

UNITED THERAPEUTICS Corp  
Form 10-K  
February 26, 2013

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

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**FORM 10-K**

(Mark One)

**ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES  
EXCHANGE ACT OF 1934.**

**For the fiscal year ended December 31, 2012**

**OR**

**TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES  
EXCHANGE ACT OF 1934.**

**For the transition period from \_\_\_\_\_ to \_\_\_\_\_  
Commission file number 0-26301**

**United Therapeutics Corporation**

(Exact Name of Registrant as Specified in Its Charter)

**Delaware**  
(State or Other Jurisdiction of  
Incorporation or Organization)

**52-1984749**  
(I.R.S. Employer  
Identification No.)

**1040 Spring Street, Silver Spring, MD**  
(Address of Principal Executive Offices)

**20910**  
(Zip Code)

**(301) 608-9292**

Registrant's Telephone Number, Including Area Code

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

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

**Name of each exchange on which registered**  
NASDAQ Global Select Market

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

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**None**  
(Title of Class)

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

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

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes  No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

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

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

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

The aggregate market value of the Common Stock held by non-affiliates of the registrant, based on the closing price on June 30, 2012, as reported by the NASDAQ Global Select Market was approximately \$2,256,964,700.

**The number of shares outstanding of the issuer's common stock, par value \$0.01 per share, as of February 18, 2013, was 50,183,353.**

## DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement for the registrant's 2013 annual meeting of shareholders scheduled to be held on June 26, 2013, are incorporated by reference in Part III of this Form 10-K.

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**PART I**

**ITEM 1. BUSINESS**

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 conditions.

Our key therapeutic products and product candidates include:

*Prostacyclin Analogues.* Prostacyclin analogues are stable synthetic forms of prostacyclin, an important molecule produced by the body that has powerful effects on blood vessel health and function. Our lead product is Remodulin® (treprostinil) Injection (Remodulin), which is administered subcutaneously or intravenously for the treatment of pulmonary arterial hypertension (PAH). The United States Food and Drug Administration (FDA) initially approved Remodulin in 2002 for subcutaneous (under the skin) administration. Subsequently, the FDA broadened its approval of Remodulin for intravenous (in the vein) use and for the treatment of patients who require transition from Flolan® (epoprostenol), the first FDA-approved prostacyclin therapy for PAH. In addition to the United States, Remodulin is approved in 37 other countries, most of which have approved both routes of administration. In 2009, the FDA approved Tyvaso® (treprostinil) Inhalation Solution (Tyvaso), an inhaled prostacyclin therapy for the treatment of PAH, and we commenced commercial sales later that year. We are in the late stages of developing our oral tablet of treprostinil diolamine for the treatment of PAH, and have recently commenced pre-clinical studies of a self-injectable form of treprostinil, which we refer to as TransCon Treprostinil. Our wholly-owned subsidiary Lung LLC is separately developing beraprost, another type of prostacyclin analogue, as an oral tablet known as 314d and as an extended release injection we refer to as TransCon Beraprost, both for the treatment of PAH.

*Phosphodiesterase Type 5 (PDE-5) Inhibitor.* PDE-5 inhibitors act to inhibit the degradation of cyclic guanosine monophosphate (cGMP) in cells. cGMP is activated by nitric oxide (NO) to effect relaxation of vascular smooth muscle. Our PDE-5 inhibitor product is Adcirca® (tadalafil) tablets (Adcirca), a once-daily oral therapy for the treatment of PAH. We acquired exclusive U.S. commercialization rights to Adcirca from Eli Lilly and Company (Lilly) in 2008. In 2009, the FDA approved Adcirca for the treatment of PAH, and we commenced commercial sales later that year.

*Monoclonal Antibodies (MAbs).* MAbs act by targeting tumor-associated antigens on cancer cells to activate a patient's immune system against the cancer cells. We are developing the antibody Ch14.18 MAb for the treatment of neuroblastoma, under an agreement with the National Cancer Institute of the United States National Institutes of Health (NIH). We are also developing another antibody, 8H9 MAb, for the treatment of metastatic brain cancer, under an agreement with Memorial Sloan-Kettering Cancer Center.

*Glycobiology Antiviral Agents.* Glycobiology antiviral agents are a novel class of small, sugar-like molecules that have shown pre-clinical indications of efficacy against a broad range of viruses. In September 2011, we were awarded a contract from the National Institute of Allergy and Infectious Diseases of the NIH for studies directed at the development of a broad spectrum antiviral drug based on our glycobiology antiviral platform.

*Cell-Based Therapy.* In June 2011, we entered into a license agreement with Pluristem Ltd. (Pluristem) to develop and commercialize its cell-based product known as PLacental eXpanded (PLX) cells for the treatment of PAH using Pluristem's proprietary cell technology. We are currently conducting preclinical toxicology and pharmacology studies to support a potential investigational new drug application for the treatment of PAH, and expect to commence a phase I clinical study in Australia during the first half of 2013.

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*Engineered Lungs and Lung Tissue for Transplantation.* The only reported cure for PAH is a full lung transplant. Using the xenotransplantation technology we acquired through our July 2011 acquisition of Revivicor Inc. and several regenerative medicine technologies that we have licensed, we are in the early pre-clinical stage of developing engineered lungs and lung tissue which can be transplanted into patients suffering from PAH and other lung diseases.

We devote most of our research and development resources to developing these key products and product candidates.

We generate revenues primarily from the sale of Remodulin, Tyvaso and Adcirca (which we refer to as our commercial products). Our sales and marketing staff supports the availability of our commercial products in the countries in which they are approved. These efforts are supplemented by our specialty pharmaceutical distributors in the United States and our other distributors internationally.

United Therapeutics was incorporated in Delaware in June 1996. Our principal executive offices are located at 1040 Spring Street, Silver Spring, Maryland 20910. We also maintain executive offices at 55 T.W. Alexander Drive, Research Triangle Park, North Carolina 27709.

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:

<b>Product</b>	<b>Mode of Delivery</b>	<b>Indication/Market</b>	<b>Current Status</b>	<b>Our Territory</b>
Remodulin	Continuous subcutaneous	Pulmonary arterial hypertension	Approved in the U.S., most of Europe*, Argentina, Australia, Canada, Chile, Israel, Mexico, Peru, Saudi Arabia, South Korea, Taiwan and Venezuela; commercial sales in most of these countries	Worldwide
Remodulin	Continuous intravenous	Pulmonary arterial hypertension	Commercial in the U.S., Canada, Israel, Switzerland, Argentina and Saudi Arabia; also approved in most of Europe*, Mexico, Peru and South Korea	Worldwide
Tyvaso	Inhaled	Pulmonary arterial hypertension	Commercial in the U.S.	Worldwide
Adcirca	Oral	Pulmonary arterial hypertension	Commercial in the U.S.	United States
Oral Treprostinil	Oral	Pulmonary arterial hypertension	NDA filed with FDA; resubmission filed in response to FDA's complete response letter	Worldwide
Oral Treprostinil Combination Therapy	Oral	Pulmonary arterial hypertension	Phase III	Worldwide
Ch14.18 MAb	Intravenous	Neuroblastoma	Phase III	Worldwide

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<b>Product</b>	<b>Mode of Delivery</b>	<b>Indication/Market</b>	<b>Current Status</b>	<b>Our Territory</b>
Remodulin	Continuous intravenous via implantable pump	Pulmonary arterial hypertension	Phase III	United States, United Kingdom, France, Germany, Italy and Japan
Beraprost 314d	Oral	Pulmonary arterial hypertension	Phase II	North America, Europe, Mexico, South America, Egypt, India, South Africa and Australia
8H9 MAb	Intravenous	Metastatic brain cancer	Phase I	Worldwide
TransCon Treprostinil	Self-Injection	Pulmonary arterial hypertension	Pre-Clinical	North America, Europe, Mexico, South America, Egypt, India, South Africa and Australia
TransCon Beraprost	Self-Injection	Pulmonary arterial hypertension	Pre-Clinical	North America, Europe, Mexico, South America, Egypt, India, South Africa and Australia
PLX Cells	Intravenous	Pulmonary arterial hypertension	Pre-Clinical	Worldwide
Glycobiology Antiviral Agents	Oral	Broad-spectrum agents against viral infectious diseases	Pre-Clinical	Worldwide
Engineered Lungs for Transplantation	Various	End-stage lung disease	Pre-Clinical	Worldwide

\*

We have obtained approval for subcutaneous Remodulin in 23 member countries of the European Economic Area (EEA), as well as other non-EEA countries in Europe, and have received pricing approval in most of these countries. We have obtained approval for intravenous Remodulin in 23 EEA countries and Switzerland, and are in the process of submitting pricing applications and our risk management plan in select countries based on market factors.

**Products to Treat Cardiopulmonary Diseases****Pulmonary Arterial Hypertension**

PAH is a life-threatening disease that affects the blood vessels in the lungs and is characterized by increased pressure in the pulmonary arteries, which are the blood vessels leading from the heart to the lungs. The elevated pressure in the pulmonary arteries strains the right side of the heart as it pumps blood to the lungs. This eventually leads to right heart failure and, ultimately, death. PAH is characterized by structural changes in blood vessel walls, aggregation of platelets and alteration of smooth muscle cell function. It is estimated that PAH affects between 100,000 and 200,000 individuals worldwide. The awareness of PAH continues to grow, as we have seen increases in the number of people diagnosed with the disease. However, due to the rarity of the disease and the complexity of diagnosing it, only a small fraction of patients with PAH are being treated. There is scientific interest in identifying easier, less invasive methods of diagnosing PAH. If this research is successful, more patients could be diagnosed at an earlier stage of the disease.



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Currently, treatment of PAH focuses on three distinct molecular pathways that have been implicated in the disease process: the prostacyclin pathway, the NO pathway, and the endothelin (ET) pathway. The three classes of drugs that target these three pathways are:

*Prostacyclin Analogues.* Patients with PAH have been shown to have reduced levels of prostacyclin, a naturally occurring substance that has the effect of relaxing the pulmonary blood vessels, preventing platelet aggregation, and inhibiting the proliferation of smooth muscle cells in the pulmonary vessels. Therefore, drugs that mimic the action of prostacyclin, known as prostacyclin analogues, are established PAH treatments.

*PDE-5 Inhibitors.* Patients with PAH have also been shown to have reduced levels of the enzyme responsible for producing NO, a naturally occurring substance in the body that causes relaxation of the pulmonary blood vessels. NO produces this effect by increasing intracellular levels of an intermediary known as cyclic guanosine monophosphate (cGMP). Therefore, another established therapeutic approach has been to inhibit the degradation of cGMP, using drugs that are known as PDE-5 inhibitors.

*Endothelin Receptor Antagonists.* PAH patients have also been shown to have elevated levels of endothelin-1, a naturally occurring substance in the body that causes constriction and structural changes of the pulmonary blood vessels. Therefore, another established therapeutic approach has been to block the action of endothelin with drugs that are known as endothelin receptor antagonists (ETRAAs).

Because any or all of the three pathways may be therapeutic targets in a patient, these three classes of drugs are used alone or in combination to treat patients with PAH. We currently market drugs in two of these three classes. Remodulin and Tyvaso are prostacyclin analogues, and Adcirca is a PDE-5 inhibitor.

***Remodulin***

Our lead product for treating PAH is Remodulin (treprostinil) Injection, the active pharmaceutical ingredient of which is a prostacyclin analogue known as treprostinil. We sell Remodulin to specialty pharmaceutical distributors in the United States and to international pharmaceutical distributors. We recognized approximately \$458.0 million, \$430.1 million and \$403.6 million in Remodulin revenues, representing 50 percent, 58 percent and 68 percent of our net revenues for the years ended December 31, 2012, 2011 and 2010, respectively. In 2002, Remodulin was approved by the FDA as a continuous subcutaneous infusion for the treatment of PAH in patients with New York Heart Association (NYHA) Class II-IV (moderate to severe) symptoms. In 2004, the FDA expanded its approval to permit continuous intravenous infusion of Remodulin for patients who cannot tolerate subcutaneous infusion. In 2006, the FDA expanded its approval to include transition of patients to Remodulin from Flolan® (epoprostenol), the first FDA-approved prostacyclin therapy for PAH. In 2007, the results of a prospective, open-label study demonstrated that stable patients with PAH can be safely transitioned from Flolan to intravenous Remodulin using a rapid switch protocol. Remodulin is the only prostacyclin analogue approved for patients with NYHA class II-IV symptoms.

Outside of the United States, Remodulin is approved for treatment of PAH in 37 countries by continuous subcutaneous administration. Remodulin is also approved for treatment of PAH by continuous intravenous administration in 31 countries outside the U.S., including 23 countries in Europe that granted approval in December 2011. Applications for approval of both subcutaneous and intravenous Remodulin are under review in other countries. We continue to work toward commercializing Remodulin in new territories, including China (where we filed a marketing application in September 2011) and Japan (where we expect to file a marketing application in 2013).



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We believe Remodulin offers many competitive advantages over Flolan, which is delivered continuously through a surgically implanted intravenous catheter connected to an external pump and is not approved for subcutaneous use. Flolan is approved for the treatment of patients with PAH. Generic formulations of Flolan are also available. We believe subcutaneous 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 potentially safer and more convenient drug delivery to patients. Unlike Flolan, Remodulin can be delivered by subcutaneous infusion with a pager-sized miniature infusion pump. 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, the active ingredient in Remodulin, is highly soluble in an aqueous solution, which enables us to manufacture Remodulin in 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 keep the drug cool during infusion. This eliminates the need for cooling packs or refrigeration to keep Remodulin stable, as is required with Flolan due to Flolan's chemical instability at room temperature.

In 2008, Teva Pharmaceuticals Industries Ltd. (Teva) announced that the FDA approved its version of generic epoprostenol (the active ingredient in Flolan) for the treatment of PAH, which has all of the attributes of Flolan discussed above. Also in 2008, the FDA approved another intravenous version of epoprostenol, which is currently marketed by Actelion Pharmaceuticals Ltd (Actelion) under the name Veletri®. Veletri is stable at room temperature but shares most of Flolan's other attributes including risk of central venous catheter infection, required hospitalization at the start of treatment, short half-life (which increases risk of rebound PAH), mixing requirements, daily pump refills and large pump size. Actelion also markets Tracleer®, an ETRA, and Ventavis®, an inhaled prostacyclin, for the treatment of PAH.

In February 2012, we received notice of an abbreviated new drug application by Sandoz Inc. requesting FDA approval to market a generic version of the 10 mg/mL strength of Remodulin. On December 7, 2012, we received notice that Sandoz had amended its previously filed abbreviated new drug application to request additional approval to market generic versions of the 1mg/mL, 2.5 mg/mL, and 5 mg/mL strengths of Remodulin. For further details, see the section below entitled *Governmental Regulation Hatch-Waxman Act and Item 3. Legal Proceedings.*

There are noteworthy adverse events associated with Remodulin. When infused subcutaneously, Remodulin causes varying degrees of infusion site pain and reaction (redness and swelling) in most patients. Patients who cannot tolerate the infusion site pain related to use of subcutaneous Remodulin may instead use intravenous Remodulin. Intravenous Remodulin is delivered continuously through a surgically implanted central venous catheter, similar to Flolan, Veletri and generic epoprostenol. When delivered intravenously, Remodulin bears the risk of central venous catheter infection and a serious bloodstream infection known as sepsis, as do Flolan, Veletri and generic epoprostenol. General side effects associated with Remodulin include diarrhea, jaw pain, vasodilation and edema.

*International Regulatory Review of Subcutaneous and Intravenous Remodulin*

Remodulin is approved in 37 countries outside the United States. In 31 of these countries, it is approved for both subcutaneous and intravenous use. In the other six countries, Remodulin is approved for subcutaneous use only.

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We used the mutual recognition process, described more fully in *Governmental Regulation Marketing Pharmaceutical Products Outside the United States*, to obtain approval of subcutaneous Remodulin in most countries in the European Union (EU). The mutual recognition process for subcutaneous Remodulin was completed in 2005, with positive decisions received from 23 member countries of the EEA. We withdrew our applications in the Republic of Ireland (Ireland), Spain and the United Kingdom (UK) following a request for additional documentation from these countries. In December 2011, we received regulatory approval by the French regulatory agency, *L'Agence Nationale de Sécurité du Médicament et des Produits de Santé* (ANSM), for the intravenous use of Remodulin to treat PAH. The ANSM approval followed a review period during which each EEA member nation which had previously approved subcutaneous Remodulin through the mutual recognition process reviewed and endorsed the final variation assessment report issued by ANSM, which will allow us to market intravenous Remodulin in those countries following pricing approval and approval of our risk management plan (RMP) in each country.

In Europe, an RMP is routinely required as part of the regulatory approval process for new medicines and also for significant variations involving a change to the route of administration, formulation or indication. For intravenous Remodulin, we will implement an RMP focused on minimizing the known risks of central venous catheter-related blood stream infections associated with intravenous administration. To date, our RMP for intravenous Remodulin has been approved in ten EEA countries.

Remodulin is available under the named-patient system in the EEA member countries where Remodulin is not approved (including the UK, Ireland and Spain). Under the named-patient system, our distributors are permitted to import Remodulin into EEA member countries based on requests for Remodulin for use in treating specific patients, but neither we nor our distributors are permitted to market the product in those countries. We are evaluating the resubmission of our applications for Remodulin in Ireland and Spain.

*Intravenous Remodulin Administered via Implantable Pump*

A majority of the patients who die of PAH in the United States each year have not initiated treatment with an infused prostacyclin analogue, which is a complex and burdensome form of medical therapy. In 2009, we entered into an agreement with Medtronic, Inc. (Medtronic) to develop its Synchronomed® implantable pump to deliver Remodulin, which, if successful, could eliminate many of the patient burdens associated with infused prostacyclins.

Medtronic commenced a clinical trial administering Remodulin using the Synchronomed in April 2011 to support FDA approval for the use of Remodulin with its implantable pump. Patient enrollment in the clinical trial was completed in late November 2012. Based on current projections of patient days and discontinuations, we expect that the clinical trial will be completed in late 2013. In certain countries in Europe, an implantable pump distributed by OMT GmbH & Co. KG is used to deliver intravenous Remodulin to some patients.

*Tyvaso*

We commenced commercial sales of Tyvaso in the United States in 2009. We sell Tyvaso to the same specialty pharmaceutical distributors in the United States that distribute Remodulin. For the years ended December 31, 2012, 2011 and 2010, we recognized approximately \$325.6 million, \$240.4 million and \$151.8 million in Tyvaso revenues, representing 36 percent, 32 percent and 26 percent, respectively, of our net revenues.

Currently, the only other FDA-approved inhaled prostacyclin analogue is Ventavis. Ventavis is marketed by Actelion in the United States and by Bayer Schering Pharma AG in Europe. The active ingredient in Ventavis, iloprost, has a half-life of approximately 20 to 30 minutes and can cause a

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decrease in systemic (body-wide) blood pressure if the drug is administered at too high a dose. Patients need to inhale Ventavis six to nine times per day via a nebulizer. According to its package insert, each Ventavis inhalation consists of four to ten minutes of continuous inhalation via the nebulizer.

In contrast to iloprost, treprostinil (the active ingredient in Tyvaso) has a longer half-life and greater selectivity to the lungs. Tyvaso is administered four times a day, by inhaling up to nine breaths during each two- to three-minute treatment session. Tyvaso is required to be administered using our proprietary Tyvaso Inhalation System, which consists of an ultra-sonic nebulizer that provides a dose of Tyvaso on a breath-by-breath basis. In addition, a day's supply of Tyvaso is packaged in a single ampule emptied into the Tyvaso Inhalation System once a day. As a result, unlike the Ventavis nebulizer which requires cleaning after each use, the Tyvaso Inhalation System only needs to be cleaned once a day.

Tyvaso has been generally well tolerated in our trials, during which adverse events appeared to be similar to those previously reported for treprostinil or due to administration by inhalation. The most common adverse events were transient cough, headache, nausea, dizziness and flushing. We completed an open-label study in the United States to investigate the clinical effects of switching patients from Ventavis to Tyvaso, in which improvements in patient quality of life were observed. Patients in this study also saved an average of approximately 1.4 hours per day when administering Tyvaso compared to Ventavis.

*Regulatory Approval of Tyvaso*

In 2009, the FDA approved Tyvaso for the treatment of PAH using the Tyvaso Inhalation System. Tyvaso is indicated to increase walk distance in patients with NYHA Class III symptoms of PAH, which includes multiple etiologies such as idiopathic and familial PAH, as well as PAH associated with scleroderma and congenital heart disease.

In connection with the Tyvaso approval, we agreed to a post-marketing requirement (PMR) and certain post-marketing commitments (PMCs). PMRs and PMCs are studies that sponsors conduct after FDA approval to gather additional information about a product's safety, efficacy, or optimal use. PMRs are required studies, whereas a sponsor voluntarily commits to conduct PMCs.

Under the PMCs, we committed to modify particular aspects of the Tyvaso Inhalation System. As part of these modifications, we agreed to perform a usability analysis incorporating the evaluation and prioritization of user-related risk followed by a human factors study. The modifications and usability analysis have been completed, and in September 2011, the FDA notified us that we had fulfilled the requirements of the PMCs. In July 2012, we received FDA approval for a modified Tyvaso Inhalation System based on the results of the PMCs. As a result, we are currently manufacturing the modified inhalation system, which we expect to release commercially in 2013.

We are working to further improve the Tyvaso Inhalation System to make it easier for patients to use. If ultimately approved by the FDA, an improved Tyvaso Inhalation System could enhance patient convenience and potentially increase the number of patients using Tyvaso.

In accordance with our PMR, we are enrolling patients in a long-term observational study in the United States that will include 1,000 patient years of follow-up in patients treated with Tyvaso, and 1,000 patient years of follow-up in control patients receiving other PAH treatments. This study will allow us to continue assessing the safety of Tyvaso. We are required to provide the FDA with annual updates on our PMR, and to submit the results of the study by December 15, 2014. While we believe we are on schedule to complete the PMR by this deadline, any failure or delay could result in penalties, including fines or withdrawal of Tyvaso from the market, unless we are able to demonstrate good cause for the failure or delay.

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In June 2010, the FDA granted orphan drug designation for Tyvaso. Such a designation, coupled with an approval of the product for the orphan indication, confers an exclusivity period through July 2016, during which the FDA may not approve any application to market the same drug for the same indication, except in limited circumstances.

We are not seeking European Medicines Agency (EMA) approval of Tyvaso for the treatment of PAH. We expect to make Tyvaso available in certain European and Latin American countries in 2013 on an unmarketed, named-patient basis through country-specific arrangements with our distributors, to the extent physicians prescribe Tyvaso in those countries.

*Adcirca*

We began selling Adcirca in 2009. Adcirca is a PDE-5 inhibitor, the active pharmaceutical ingredient of which is tadalafil. Tadalafil is also the active pharmaceutical ingredient in Cialis®, which is marketed by Lilly for the treatment of erectile dysfunction. We acquired the commercial rights to Adcirca for the treatment of PAH in the U.S. from Lilly in 2008. We sell Adcirca at prices established by Lilly, which are at parity with Cialis pricing and typically set at a discount from an average wholesale price to pharmaceutical wholesalers. For the years ended December 31, 2012, 2011 and 2010, we recognized approximately \$122.5 million, \$70.6 million and \$36.3 million in Adcirca revenues, representing 13 percent, 9 percent and 6 percent, respectively, of our net revenues.

Patients with PAH have been shown to have reduced levels of the enzyme responsible for producing NO, a naturally occurring substance in the body that has the effect of relaxing vascular smooth muscle cells. Impaired blood vessel relaxation in penile tissue is also a cause of erectile dysfunction. NO works to relax pulmonary blood vessels by increasing intracellular levels of an intermediary known as cyclic GMP. Because cyclic GMP is degraded by PDE-5, an established therapeutic approach in the treatment of PAH is to use PDE-5 inhibitors to increase levels of cGMP in blood vessels and improve cardiopulmonary function in PAH patients.

Prior to the approval of Adcirca, Revatio®, which is marketed by Pfizer Inc. (Pfizer), was the only PDE-5 inhibitor approved for the treatment of PAH. Sildenafil citrate, the active ingredient in Revatio, is also the active ingredient in Viagra®, which is marketed by Pfizer for the treatment of erectile dysfunction. Revatio is dosed three times daily. Adcirca is dosed once daily. In the fourth quarter of 2012, several companies launched generic formulations of sildenafil citrate.

*FDA Approval of Adcirca*

In 2009, the FDA approved Adcirca with a recommended dose of 40 mg, making it the first once-daily PDE-5 inhibitor for the treatment of PAH. Adcirca is indicated to improve exercise ability in World Health Organization Group I PAH patients, which encompasses patients with multiple forms of PAH including etiologies such as idiopathic and familial PAH as well as PAH associated with collagen vascular disease and congenital heart disease.

*Commercial Rights to Adcirca*

In 2008, we entered into several agreements with Lilly, namely, 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 Adcirca for the treatment of pulmonary hypertension in the United States and Puerto Rico. Pursuant to the manufacturing and supply agreement, Lilly agreed to manufacture Adcirca and distribute it on our behalf via its wholesaler network, in the same manner that it distributes its own pharmaceutical products. In 2008, we made a one-time, non-refundable, non-creditable 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, Lilly purchased 6.3 million

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shares of our common stock (adjusted for our September 2009 two-for-one stock split) for an aggregate purchase price of \$150.0 million. See *Strategic Licenses and Relationships* below for more details on these agreements.

***UT-15C Sustained Release Tablets (Oral Treprostinil)***

There are currently no approved oral prostacyclin therapies available to patients in the United States or Europe. We are developing a novel salt form of treprostinil for oral administration, treprostinil diolamine tablets. If we are successful in developing oral treprostinil, then patients and physicians may use prostacyclin earlier in the PAH disease continuum, which could increase demand for our PAH therapies.

In December 2011, we submitted to the FDA an NDA for the approval of oral treprostinil for treatment of PAH. Our NDA included the results of three phase III studies:

*Combination Therapy Studies (FREEDOM-C and FREEDOM-C<sup>2</sup>):* Two separate 16-week studies of patients on approved background therapy using a PDE-5 inhibitor, such as Revatio, or an ETRA, such as Tracleer, or a combination of both. The FREEDOM-C and FREEDOM-C<sup>2</sup> trials were completed in 2008 and 2011 respectively, and neither achieved statistical significance for its primary endpoint of improvement in six-minute walk distance at week 16 (p=0.072 and p=0.089, respectively).

*Monotherapy Study (FREEDOM-M):* A 12-week study of PAH patients who were not on any approved background therapy. In June 2011, we announced that the FREEDOM-M trial met its primary endpoint of improvement in six-minute walk distance at week 12. Analysis of the FREEDOM-M results demonstrated that patients receiving oral treprostinil improved their six-minute walk distance by a median of approximately 23 meters (p=0.0125, Hodges-Lehmann estimate and non-parametric analysis of covariance in accordance with the trial's pre-specified statistical analysis plan) as compared to patients receiving placebo. The median change from baseline at week 12 was 25 meters for patients receiving oral treprostinil and -5 meters for patients receiving placebo.

We believe that patients in the FREEDOM-C and FREEDOM-C<sup>2</sup> trials needed longer-term treatment with oral treprostinil to provide a statistically significant clinical trial outcome. As such, we began enrolling patients in a new phase III clinical trial (FREEDOM-EV) in the third quarter of 2012. FREEDOM-EV is a placebo-controlled study of newly-diagnosed patients who have initiated an approved background therapy (either an ETRA or a PDE-5 inhibitor, but not both), with one co-primary endpoint being the time to clinical worsening, generally defined as (1) death; (2) an unplanned hospitalization due to PAH; (3) initiation of prostacyclin for the treatment of PAH; (4) a decrease in six-minute walk distance of at least 15 percent from baseline (or too ill to walk) as a result of the progression of PAH; or (5) unsatisfactory long-term clinical response. The other co-primary endpoint is change in six minute-walk distance at week 24. We plan to enroll up to 858 patients in order to observe 349 clinical worsening events.

On October 23, 2012, the FDA issued a complete response letter in which it declined to approve our NDA. In January 2013, we filed a resubmission of our NDA in response to the concerns raised in the FDA's complete response letter. The FDA has acknowledged our resubmission as complete and set a targeted response date of March 31, 2013. Despite the FDA's complete response letter and uncertainty as to whether our resubmission will be approved, we remain committed to further studying oral treprostinil and seeking FDA approval before the end of 2016. We currently expect to seek approval of oral treprostinil in Europe upon completion of the FREEDOM-EV study. In 2005, the EMA announced that oral treprostinil had been designated an orphan medicinal product for the treatment of PAH.

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***Self-Injectable Prostacyclin Analogues***

In September 2012, we announced that we signed an exclusive agreement with Ascendis Pharma A/S (Ascendis Pharma) to apply Ascendis Pharma's proprietary TransCon technology platform to our treprostinil molecule. We believe that the TransCon technology platform may enable a sustained release of a novel, carrier-linked product, which will significantly enhance the delivery of treprostinil by establishing a once-daily, self-injectable alternative for patients who currently administer Remodulin through a continuous infusion pump for the treatment of PAH. We expect that this self-injectable form of treprostinil could enable patients to avoid infusion site pain associated with subcutaneous Remodulin. Under this agreement, we also intend to pursue development of a TransCon technology-enabled sustained release formulation of beraprost, which is another prostacyclin analogue, as discussed below.

***Beraprost***

We have the exclusive right to develop and market a modified-release formulation of beraprost (beraprost-MR) in the United States, Canada, Mexico, South America, Europe, Egypt, India, South Africa and Australia for the treatment of cardiovascular indications, pursuant to our license agreement with Toray Industries, Inc. (Toray), which is described below under *Strategic Licenses and Relationships Toray Amended License Agreement*.

Beraprost is a chemically stable, orally bioavailable prostacyclin analogue. Like natural prostacyclin and Remodulin, beraprost is believed to dilate blood vessels, prevent platelet aggregation and prevent proliferation of smooth muscle cells surrounding blood vessels. In 2007, Toray announced that beraprost-MR received regulatory approval in Japan for use in the treatment of PAH.

In July 2011, we amended our license agreement with Toray regarding the development of beraprost-MR for the treatment of PAH. The July 2011 amendment did not materially change the terms of our license agreement, except for a reduction in royalty rates. In exchange for the reduction in royalty rates, we agreed to pay Toray \$50.0 million in equal, non-refundable payments over a five-year period ending in 2015.

***314d***

In November 2011, we announced that a phase II trial of beraprost-MR did not provide data supporting the initiation of a phase III study using a twice-daily dosing regimen. The results of this study suggested that the efficacy of beraprost may be improved by providing more stable and consistent plasma concentrations of beraprost, thereby increasing the therapeutic exposure to the drug. Therefore, we commenced studies of a reformulated, single-isomer version of beraprost (314d), with a dosing regimen of four times per day. We completed a phase I safety trial in July 2012, and the preliminary data suggests that dosing 314d four times a day is safe. We believe that 314d and treprostinil bind selectively to different sets of prostacyclin receptors within the lung and thus could provide certain groups of patients a differing set of safety and efficacy profiles. We are developing a phase III study to evaluate the clinical benefit of 314d as an add-on therapy to Tyvaso.

***TransCon Beraprost***

During the third quarter of 2012, we initiated efforts to develop an extended-release injection we refer to as TransCon Beraprost, which incorporates the TransCon technology described above and is intended to be self-administered by PAH patients once daily.

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***Cell-Based Therapy***

In June 2011, we entered into a license agreement with Pluristem Ltd. (Pluristem) to develop and commercialize a cell-based product for the treatment of PAH using Pluristem's proprietary cell technology. The license agreement became effective in August 2011, at which time we made a one-time, non-refundable payment of \$7.0 million to Pluristem, \$5.0 million of which consisted of a license fee that was charged to research and development expenses during the year ended December 31, 2011. We are currently conducting preclinical toxicology and pharmacology studies to support a potential investigational new drug application for the treatment of PAH, and expect to commence a phase I clinical study in Australia in the first half of 2013.

**Products to Treat Cancer**

***Ch14.18 Antibody***

In July 2010, we entered into a Cooperative Research and Development Agreement (CRADA) with the National Cancer Institute (NCI) of the United States National Institutes of Health to collaborate on the late-stage development and regulatory agency submissions of Chimeric Monoclonal Antibody 14.18 (Ch14.18) for children with high-risk neuroblastoma and patients with other forms of cancers. Ch14.18 is an antibody that has shown potential in the treatment of certain types of cancer by targeting GD2, a glycolipid on the surface of tumor cells. Neuroblastoma is a rare cancer of the sympathetic nervous system mainly affecting children. It is the most common extracranial, outside the skull, solid cancer in children and the most common cancer in infants. There are fewer than 1,000 new cases of neuroblastoma diagnosed each year. Ch14.18 is a chimera, composed of a combination of mouse and human DNA, monoclonal antibody that induces antibody-dependent cell-mediated cytotoxicity, a mechanism of cell-mediated immunity whereby the immune system actively targets a cell that has been bound by specific antibodies.

Results from NCI's phase III study were published in September 2010. In that study, immunotherapy with Ch14.18 significantly improved patient outcome compared with standard therapy in patients with high risk neuroblastoma. Specifically, the two-year estimate for event-free survival was 66%±5% in the Ch14.18 immunotherapy group and 46%±5% in the standard therapy group (p=0.01 without adjustment for interim analyses). The Ch14.18 immunotherapy group was also significantly better than the standard therapy group in the estimated rate of overall survival (86%±4% vs. 75%±5% at two years, p=0.02 without adjustment for interim analyses). This study was coordinated by the Children's Oncology Group, a national consortium of researchers supported by the NCI.

Under the terms of the CRADA, NCI has completed a second phase III clinical trial in 105 patients to define more clearly the safety and toxicity profile of Ch14.18 immunotherapy in children, and we are developing the commercial production capability for the antibody. As part of developing our commercial production capability, we will need to demonstrate comparability of our Ch14.18 to the NCI-produced Ch14.18, which typically includes a series of analytical and bioanalytical assays and human pharmacokinetics. The human pharmacokinetics study is currently open to enrollment in the United States. The NCI studies, including a previously conducted phase III clinical trial and all other necessary studies supported by NCI, will be used as the basis for a biologics license application we expect to file seeking FDA approval of Ch14.18 immunotherapy for the treatment of neuroblastoma and a marketing authorization application we expect to file with the EMA for approval in Europe. We have received orphan drug designation for Ch14.18 from the FDA and the EMA.

***8H9 Antibody***

Pursuant to our 2007 agreement with Memorial Sloan-Kettering Cancer Center, we obtained certain license rights to an investigational monoclonal antibody, 8H9, for the treatment of metastatic brain cancer. 8H9 is a mouse IgG1 MAb that is highly reactive with a range of human solid tumors,

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including human brain cancers. The 8H9 antibody is in early investigational development for metastases that develop in the brain from the spread of cancers from other tissues in the body. Metastatic brain cancers are ten times more common than cancers that originate in the brain, and prognosis for patients with metastatic brain cancers is very poor. In the United States, more than 100,000 cases of metastatic brain cancer are diagnosed each year.

**Products to Treat Infectious Diseases Glycobiology Antiviral Agents**

Pursuant to our research agreement with the University of Oxford (Oxford), we have the exclusive right to commercialize a platform of glycobiology antiviral drug candidates in various preclinical and clinical stages of testing for the treatment of a wide variety of viruses. Through our research agreement with Oxford, we are also supporting research into new glycobiology antiviral drug candidates and technologies. We are currently testing many of these compounds in preclinical studies and Oxford continues to synthesize new agents that we may elect to test.

In September 2011, we were awarded a cost plus fixed fee contract with an aggregate value of up to \$45.0 million under a Broad Agency Announcement from the National Institute of Allergy and Infectious Diseases (NIAID) of the United States National Institutes of Health for studies directed at the development of a broad spectrum antiviral drug based on our glycobiology antiviral platform. Under the contract's base period of 42 months, we will receive \$10.6 million in funding. In addition, there are eight milestone-based options to expand the project and funding under the contract. In August 2012, we received a contract modification exercising two of the above-mentioned milestone-based options, increasing total contract funding by \$8.7 million. We recognize revenue under this contract to the extent of costs incurred, plus a proportionate amount of fee earned.

**Engineered Lungs and Lung Tissue for Transplantation**

In July 2011, we acquired all of the outstanding stock of Revivicor, Inc. (Revivicor), a company focused on developing genetic biotechnology platforms to provide alternative tissue sources for treatment of human degenerative disease through tissue and organ xenotransplantation. The acquisition date fair value of the consideration consisted of \$4.2 million in cash and \$3.4 million in contingent consideration. For further details, see Note 16 *Acquisitions Revivicor, Inc.* to our consolidated financial statements included in this Annual Report on Form 10-K.

We acquired Revivicor to pursue early-stage development of replacement lungs for transplantation. PAH has not been reported to reoccur in end-stage patients who have received a full lung transplant. Only a few hundred PAH patients receive a lung transplantation each year due to the shortage of available lungs for transplant and there is high demand for transplantable lungs by patients with end-stage pulmonary disease, such as chronic obstructive pulmonary disease and idiopathic pulmonary fibrosis.

We are also engaged in preclinical development of several regenerative medicine technologies for creating transplantable lung tissue and whole lungs for patients with end-stage lung disease.

**Products to Provide Telemedicine Services for Cardiac Arrhythmias and Ischemic Heart Disease**

Until March 2011, we provided telemedicine monitoring services to detect cardiac arrhythmias and ischemic heart disease through our wholly-owned subsidiary Medicomp, Inc. (Medicomp). In February 2011, we entered into an agreement and plan of merger to sell Medicomp to a group of private investors. As Medicomp did not represent a core component of our business, its sale allowed us to devote more resources to our principal operations. In March 2011, we closed the transaction and received aggregate consideration of \$14.9 million, consisting of shares of United Therapeutics common stock held by the investors, with an aggregate value of \$2.8 million, and a \$12.1 million ten-year promissory note issued by Medicomp. Immediately after closing the sale, we purchased a 19.9 percent



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ownership interest in Medicomp in exchange for \$1.0 million in cash and an approximately \$2.0 million reduction in the face value of the promissory note.

Due to our agreement to sell Medicomp, we recognized an impairment charge of \$6.2 million, representing the write-off of the carrying value of Medicomp's goodwill, in the fourth quarter of 2010. We recognized a gain of \$860,000 on the sale of Medicomp. In addition, we have met all the criteria for reporting Medicomp as a discontinued operation. As a result, we have included the operating results of Medicomp, including the gain recognized on its disposal, within discontinued operations in our consolidated statements of operations for the years ended December 31, 2011 and 2010. For further details, see Note 17 *Sale of Medicomp, Inc.* to our consolidated financial statements included in this Annual Report on Form 10-K.

**Sales and Marketing**

Our marketing strategy for our commercial products is to use our sales and marketing teams to reach out to the prescriber community to: (1) increase PAH awareness; (2) increase understanding of the progressive nature of PAH; and (3) increase awareness of our commercial products and how they fit into the various stages of disease progression and treatment. Our sales and marketing teams consisted of 126 employees as of December 31, 2012. We have divided our domestic sales force into two teams. One team sells Remodulin and Tyvaso, while the other team sells Adcirca. The efforts of our sales and marketing teams are supplemented in the United States by our specialty pharmaceutical distributors for Remodulin and Tyvaso. Our U.S.-based 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 distribution agreements for Remodulin covering many territories worldwide. We are working with our international distributors to expand Remodulin sales into other countries in which they have distribution rights.

***Domestic Distribution of Commercial Products***

***Remodulin and Tyvaso***

We have entered into separate, non-exclusive distribution agreements with CuraScript, Inc. (CuraScript), Accredo Health Group, Inc. (Accredo), and CVS Caremark (Caremark), our specialty pharmaceutical distributors in the United States, to market, promote and distribute both Remodulin and Tyvaso. In April 2012, Express Scripts, Inc., the parent company of CuraScript, completed its acquisition of Medco Health Solutions, Inc., the parent company of Accredo. Thus far, the merger has not affected our business and we do not expect the merger to materially affect our business in the future.

Our Remodulin distribution agreements with Accredo and Caremark include automatic term renewals for additional one-year periods subject to notice of termination. Our Remodulin distribution agreement with CuraScript contains automatic term renewals for additional two-year periods subject to notice of termination. We entered into our distribution agreements for Tyvaso in 2009. Our Tyvaso distribution agreements have one-year terms and renew automatically for additional one-year periods, unless terminated earlier. We update our distribution agreements from time to time to reflect changes in the regulatory environment. Such changes have not had a significant impact on our operations or our relationships with our distributors, and tend to occur in the ordinary course of business. For specific services requested by us, we compensate our distributors on a fee-for-service basis as set forth in our distribution agreements. If any of our distribution agreements expire or terminate, we may, under certain circumstances, be required to repurchase any unsold Remodulin or Tyvaso inventory held by our distributors. None of our current agreements grants our distributors the distribution rights for oral tadalafil in the United States.

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Our specialty pharmaceutical distributors are responsible for assisting patients with obtaining reimbursement for the cost of Remodulin and Tyvaso and providing other support services. Under our distribution agreements, we sell Remodulin and Tyvaso to our distributors at a transfer price that we establish. We have also established a patient assistance program in the United States, which provides eligible uninsured or under-insured patients with Remodulin and Tyvaso at no charge for a certain period of time.

From time-to-time, we increase the price of Tyvaso. We increased the price of Tyvaso by 4.9 percent effective in April 2012, and again effective January 1, 2013.

*Adcirca*

We sell Adcirca to pharmaceutical wholesalers at a discount from an average wholesale price. Under our manufacturing and supply agreement with Lilly (see *Strategic Licenses and Relationships* below for more details), Lilly has agreed to manufacture Adcirca and distribute it via its wholesaler network, which includes our specialty pharmaceutical distributors, in the same manner that it distributes its own pharmaceutical products. Under the terms of this agreement, we take title to Adcirca upon completion of its manufacture by Lilly. Adcirca is shipped to customers in accordance with purchase orders received by Lilly. When customers take delivery of Adcirca, Lilly sends an invoice and collects the amount due from the customer subject to customary discounts and rebates, if any. Although Lilly provides these services on our behalf, we maintain the risk of loss as it pertains to inventory and non-payment of invoices. The manufacturing and supply agreement will continue in effect until expiration or termination of the license agreement. Lilly retains authority under the license agreement for all regulatory activities with respect to Adcirca, as well as retail pricing, which is expected to be at price parity with Cialis. Since receiving FDA approval of Adcirca, Lilly has generally increased the net wholesale price of Adcirca twice annually. During 2012, Lilly increased the price of Adcirca by 8.9 percent effective in each of January 2012 and July 2012. More recently, Lilly announced a 9.5 percent increase of the net wholesale price of Adcirca effective January 2013.

*International Distribution of Remodulin*

We currently sell subcutaneous and intravenous Remodulin outside the United States to five distributors, each of which has exclusive distribution rights in one or more countries within Europe, Israel and the Middle East, Asia and South and Central America. We also distribute Remodulin in Canada through a specialty pharmaceutical wholesaler. In some of the European markets where we are not licensed to market Remodulin, we sell (but do not market) Remodulin under the named-patient system in which therapies are approved for individual patients by a national medical review board on a case-by-case basis. We are working on expanding our sales of subcutaneous and intravenous Remodulin into new territories outside of the United States through our existing distributors and by creating relationships with new distributors. In 2007 and 2010, we entered into distribution agreements with Mochida Pharmaceutical Co., Ltd. (Mochida) and Lee's Pharmaceutical (HK) Limited (Lee's Pharma) to obtain approval and exclusively distribute subcutaneous and intravenous Remodulin in Japan and China, respectively. Lee's Pharma submitted an application for approval of intravenous and subcutaneous Remodulin in China in September 2011. Mochida is conducting an open-label phase III study to support a new drug application for subcutaneous and intravenous Remodulin in Japan, which we anticipate will be filed in 2013. In addition, Grupo Ferrer Internacional, S.A. (Grupo Ferrer) has been actively working toward commencing commercial sales of subcutaneous Remodulin in Taiwan and South Korea. In some countries, such as Japan, in order to commercialize Remodulin we are required to conduct new clinical trials, called bridging studies, to demonstrate the efficacy and safety of Remodulin in their local patient population prior to approval. Therefore it could take several years before we can commence commercial sales in new countries.

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**Strategic Licenses and Relationships**

*Lilly Agreements Related to Adcirca*

In 2008, we entered into several agreements with Lilly regarding Adcirca, including a license agreement, a manufacturing and supply agreement, and a stock purchase agreement.

*License Agreement*

Under the terms of the license agreement, which is more fully described below in *Patents and Proprietary Rights Lilly License*, Lilly granted us an exclusive license for the right to develop, market, promote and commercialize Adcirca for the treatment of pulmonary hypertension in the United States and Puerto Rico. Lilly retains authority for all regulatory activities with respect to Adcirca, as well as retail pricing, which is expected to be at price parity with Cialis.

The license agreement will continue in effect until the later of: (1) expiration, lapse, cancellation, abandonment or invalidation of the last claim to expire within a Lilly patent covering the commercialization of Adcirca for the treatment of pulmonary hypertension in the United States and Puerto Rico; or (2) expiration of any government-conferred exclusivity rights to use Adcirca for the treatment of pulmonary hypertension in the United States and Puerto Rico. We have the right to terminate the license agreement upon six months written notice to Lilly. Either party may terminate the license agreement upon a material breach by the other party of it or the manufacturing and supply agreement, described below. Lilly has the right to terminate the license agreement in connection with certain changes of control of our company.

*Manufacturing and Supply Agreement*

Under the terms of the manufacturing and supply agreement, Lilly agreed to manufacture Adcirca and distribute it on our behalf via its pharmaceutical wholesaler network, in the same manner that it distributes its own pharmaceutical products. Under the terms of this agreement, we take title to Adcirca upon its manufacture by Lilly. Adcirca is shipped to customers, generally pharmaceutical wholesalers, in accordance with customers' purchase orders received by Lilly. Lilly invoices and collects amounts due from the customer subject to customary discounts and rebates, if any, and remits the collections to us. Although Lilly is providing these services on our behalf, we maintain the risk of loss as it pertains to inventory and nonpayment of sales invoices. The manufacturing and supply agreement will continue in effect until expiration or termination of the license agreement.

As consideration for Lilly's agreement to manufacture and supply Adcirca, we made a non-refundable payment to Lilly of \$125.0 million in 2008, which was expensed. We also agreed to purchase Adcirca at a fixed manufacturing cost. The agreement provides a mechanism, generally related to the increase in the national cost of pharmaceutical manufacturing, pursuant to which Lilly may raise the manufacturing cost of Adcirca.

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*Stock Purchase Agreement*

Under the terms of the stock purchase agreement, in 2008, we issued 6.3 million shares of our common stock to Lilly from treasury for an aggregate purchase price of \$150.0 million, representing approximately 13.6% of the then-current outstanding shares of our common stock. In September 2010, Lilly filed with the SEC a Form 4 (Statement of Changes in Beneficial Ownership) disclosing that it had entered into forward contracts to sell up to an aggregate of approximately 3.1 million shares of our common stock held. According to the Schedule 13G/A filed by Lilly on February 16, 2012, Lilly currently beneficially owns approximately 3.2 million shares of our common stock.

*Toray Amended License Agreement*

In 2000, we licensed from Toray the exclusive right to develop and market beraprost-SR for cardiovascular indications. Beraprost-SR is a chemically stable oral prostacyclin analogue in a sustained release formulation, which produces \$300 million of sales annually in Japan primarily for peripheral vascular disease, for the treatment of cardiovascular indications. In 2007, Lung LLC entered into an amended agreement with Toray to assume and amend the rights and obligations of our 2000 agreement concerning the commercialization of beraprost-MR, a modified release formulation of beraprost. The amended agreement granted us additional exclusive rights to commercialize beraprost-MR in Europe and broadened the indication to vascular disease (excluding renal disease), among other revisions. In 2010, we entered into a supplement to our license agreement under which we agreed on the timing of two of the milestone payments under our existing agreement. In July 2011, we amended and replaced our existing 2007 license agreement regarding beraprost-MR. The terms of the July 2011 license agreement did not materially change from the previous license agreement and license agreement supplements except for a reduction in royalty rates. Our exclusive rights to develop beraprost-MR extend to North America, Europe, Mexico, South America, Egypt, India, South Africa and Australia.

*Significant Agreement Terms*

In 2007, we issued 400,000 shares of our common stock to Toray in exchange for the cancellation of Toray's existing right under the 2000 agreement to receive an option grant to purchase 1,000,000 shares of our common stock. Toray has the right to request that we repurchase the 400,000 shares of our common stock upon 30 days prior written notice at the price of \$27.21 per share. The 2007 amendment also provided for certain milestone payments during the development period and upon receipt of regulatory approval in the United States or the European Union.

In 2011, we amended our license agreement with Toray. The amendment did not materially change the terms of our license agreement, except for a reduction in royalty rates. In exchange for the reduction in royalty rates, we agreed to pay Toray \$50.0 million in equal, non-refundable payments over the five-year period ending in 2015. Since these payments are non-refundable and have no contingencies attached to them, we recognized an obligation and a corresponding charge to research and development expense of \$46.3 million, which represented the present value of the related payments discounted by our estimated current cost of debt. Toray has the right to terminate the license agreement in the event of a change of control of our company under certain circumstances.

*NEBU-TEC Agreement of Sale and Transfer*

In 2008, we entered into an agreement with NEBU-TEC International Med Products Eike Kern GmbH (NEBU-TEC), to purchase its line of business relating to the manufacture of the Tyvaso Inhalation System for €5.0 million plus future milestone payments of up to €10.0 million (of which we have already paid €2.5 million). The transaction closed in 2009 after we received FDA approval for Tyvaso. Under the terms of our agreement, we manage all aspects of the manufacturing process for the

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Tyvaso Inhalation System and NEBU-TEC supplies the labor to assemble the devices. NEBU-TEC also granted us an option to acquire its next generation inhalation device, the SIM-Neb.

In December 2011, we closed on an agreement with NEBU-TEC to purchase all rights to its SIM-Neb device, which is currently under development. Under the terms of the agreement, we assumed all funding responsibilities for the development and production of the SIM-Neb and NEBU-TEC will receive milestone payments for FDA and EMA approvals and additional milestone payments based on the number of commercial patients using the SIM-Neb.

***Pluristem License Agreement***

In June 2011, we entered into a license agreement with Pluristem Ltd. (Pluristem) for exclusive worldwide rights to develop and commercialize a cell-based product for the treatment of PAH using Pluristem's proprietary PLX cell technology. The license agreement became effective in August 2011, at which time we made a one-time, non-refundable payment of \$7.0 million to Pluristem, \$5.0 million of which consisted of a license fee that was charged to research and development expenses. The agreement provides for additional milestone payments to Pluristem at various stages, as well as royalties on commercial sales.

**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, GlaxoSmithKline PLC (formerly Glaxo Wellcome, Inc.) (Glaxo) assigned to us all rights to the use of the stable prostacyclin analogue now known as treprostinil, the active ingredient in Remodulin, Tyvaso and our oral treprostinil tablet. The patent covering the use of treprostinil for PAH expires in the United States in October 2014 (as extended *see Patent Term Extensions* below) and on various dates from May 2011 to June 2014 in three other countries. Under the agreement, Glaxo is entitled to receive royalties on sales exceeding a specified threshold for a minimum period of ten years (or until expiration of the licensed patents) following the date of the first commercial sale of any product containing treprostinil. Glaxo retains an exclusive option and right of first refusal to negotiate an agreement with us if we decide to license any commercialization rights with respect to treprostinil-based products anywhere in the world.

***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 treprostinil. We filed our own patent application for a new synthesis and production method for treprostinil in October 1997 in the United States, Europe and various other countries. 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 treprostinil. Our obligation to pay royalties under this license agreement expired in May 2012. However, this has not resulted in any immediate impact on our aggregate royalty rate for Remodulin because the royalty offset provisions under the Glaxo assignment agreement (which does not expire until the Glaxo patent expires) caused a corresponding increase in our royalty rate to Glaxo. Our 1997 synthesis application resulted in the grant of three patents in the United States, all of which expire in October 2017, as well as granted patents in a number of other countries, expiring in October 2018. Our synthesis application remains pending in Canada. We continue to conduct research into new methods to synthesize treprostinil and

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have filed a number of additional patent applications relating to production of tadalafil, several of which have already been granted in the United States. We have also been granted a U.S. patent covering an improved diluent for Remodulin, which will expire in March 2029.

***Patent Term Extension***

In February 2005, we were granted a five-year patent term extension by the United States Patent and Trademark Office for a patent covering the method of treating PAH using Remodulin and Tyvaso. U.S. Patent Number 5,153,222, entitled "Method of Treating Pulmonary Hypertension with Benzidine Prostaglandins", was originally scheduled to expire on October 6, 2009. It will now expire on October 6, 2014. The five-year Hatch-Waxman Act extension is the maximum extension allowed under 35 U.S.C. §156. Additional patents covering other products to which we have rights may also be eligible for extensions of up to five years based upon patent term restoration procedures under the Hatch-Waxman Act in the United States. Similar procedures exist in Europe and other countries for obtaining patent extensions on new products that are approved after a regulatory review period. See *Governmental Regulation Hatch-Waxman Act* below for further details.

***Lilly License***

In 2008, we entered into a license agreement with Lilly pursuant to which Lilly granted us the exclusive right to develop, market, promote and commercialize Adcirca for the treatment of pulmonary hypertension in the United States and Puerto Rico.

In exchange for the license, we paid Lilly a non-refundable fee of \$25.0 million in 2008, which was expensed since Adcirca had not yet received regulatory approval for commercial sales. We also agreed to pay Lilly royalties equal to 5 percent of our net sales of Adcirca 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.

Lilly retained the exclusive rights to develop, manufacture and commercialize pharmaceutical products containing tadalafil, the active pharmaceutical ingredient in Adcirca, for the treatment of pulmonary hypertension outside of the United States and Puerto Rico and for the treatment of other diseases worldwide. Lilly retained authority for all regulatory activities with respect to Adcirca, including retail pricing, which is expected to be at price parity with Cialis.

The license agreement will continue in effect until the later of: (1) expiration, lapse, cancellation, abandonment or invalidation of the last claim to expire within a Lilly patent covering the commercialization of Adcirca for the treatment of pulmonary hypertension in the United States and Puerto Rico; or (2) expiration of any government-conferred exclusivity rights to use Adcirca for the treatment of pulmonary hypertension in the United States and Puerto Rico.

We have the right to terminate the license agreement upon six months written notice to Lilly. Lilly has the right to terminate in the event of a change of control of our company. Either party may terminate upon a material breach by the other party of the license agreement or the manufacturing and supply agreement, described above.

***Supernus Pharmaceutical License***

In 2006, we entered into an exclusive license agreement with Supernus to use certain of its technologies in our sustained release oral tadalafil tablet. Under the agreement, we will pay Supernus certain amounts upon the achievement of specified milestones based on the development of oral tadalafil and a \$2.0 million payment upon its commercial launch. In addition, the agreement provides that we will pay a royalty to Supernus based on net worldwide sales. Any such royalty will be paid for approximately twelve years commencing with the first product sale and is subject to

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adjustments as specified in the agreement. Additional milestone payments and royalty payments may be due for the development and commercialization of other products developed using the technology granted under this license.

***National Cancer Institute***

In July 2010, we entered into a CRADA with NCI to collaborate on the late-stage development and regulatory agency submissions of Chimeric Monoclonal Antibody 14.18 (Ch14.18) for children with high-risk neuroblastoma and patients with other cancers. Neuroblastoma is a rare cancer of the sympathetic nervous system mainly affecting children. Under the terms of the CRADA, NCI has completed a second phase III clinical trial in 105 patients to define more clearly the safety and toxicity profile of Ch14.18 immunotherapy in children and we are developing the commercial manufacturing capability for the antibody. As part of developing our commercial manufacturing capability, we will need to demonstrate comparability of our Ch14.18 to the NCI-produced Ch14.18, which typically includes a series of analytical and bioanalytical assays and human pharmacokinetics. The human pharmacokinetics study is currently open to enrollment in the United States. The NCI studies, including a previously-conducted phase III study and all other studies supported by NCI will be used in support of a biologics license application we plan to file seeking FDA approval of Ch14.18 immunotherapy for the treatment of neuroblastoma.

***Memorial Sloan Kettering License***

Pursuant to a 2007 agreement with Memorial Sloan-Kettering Cancer Center, we obtained certain license rights to an investigational monoclonal antibody, 8H9, for the treatment of metastatic brain cancer. 8H9 is a mouse IgG1 MAb that is highly reactive with a range of human solid tumors, including human brain cancers. The 8H9 antibody is in early investigational development for metastases that develop in the brain from the spread of cancers from other tissues in the body. Metastatic brain cancers are ten times more common than cancers that originate in the brain, and prognosis for patients with metastatic brain cancers is very poor. In the United States, more than 100,000 cases of metastatic brain cancer are diagnosed each year.

***Ascendis Pharma A/S***

In September 2012, we signed an exclusive agreement with Ascendis Pharma to apply Ascendis Pharma's proprietary TransCon technology platform to our treprostinil molecule. We believe that the TransCon technology platform may enable a sustained release of a novel, carrier-linked product, which will significantly enhance the delivery of treprostinil by establishing a once-daily, self-injectable alternative for patients who currently administer Remodulin through a continuous infusion pump for the treatment of PAH. We expect that this self-injectable form of treprostinil could enable patients to avoid the infusion site pain associated with subcutaneous Remodulin. Under this agreement, we also intend to pursue development of a TransCon technology-enabled sustained release formulation of beraprost, which is another prostacyclin analogue. Under the agreement, we may be required to make future development-related milestone payments and royalty payments based on commercial sales.

**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 the years ended December 31, 2012, 2011 and 2010 totaled approximately \$173.4 million, \$180.0 million and \$165.3 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.

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**Production and Supply**

We synthesize treprostinil, the active ingredient in Remodulin and Tyvaso, and treprostinil diolamine, the active ingredient for oral treprostinil, at our facility in Silver Spring, Maryland. In March 2011 and August 2011, we received FDA approval to produce Tyvaso and Remodulin, respectively, at our Silver Spring facility. In June 2012, we received a Good Manufacturing Practice certificate from the U.K. Medicines and Health Products Regulatory Agency to produce Remodulin and Tyvaso in our Silver Spring facility.

Baxter Pharmaceutical Solutions, LLC (Baxter) currently produces Remodulin for commercial use for us. In 2009, we amended our contract with Baxter to extend the contract term through the end of 2013. During the fourth quarter of 2012, we notified Baxter that we will not renew our current contract when it expires at the end of 2013. However, we expect to negotiate and enter into a new contract with Baxter prior to the expiration of the current contract. In 2009, we also agreed with Baxter, that Remodulin will be produced using a different set of equipment and in larger quantities than the currently approved process. Since Baxter will produce Remodulin on different equipment and in a larger batch than the current process, we are required to have the new equipment and process approved by the FDA. We are currently conducting the validation and stability testing for the new equipment and process. If the validation and stability testing are successful and we are successful in negotiating a new contract with Baxter, we anticipate filing for regulatory approval of the new equipment and process shortly after entering into the new contract with Baxter. Baxter continues to produce Remodulin for us according to the currently-approved process. In 2011, the FDA and European regulatory authorities approved Jubilant Hollister-Stier Contract Manufacturing and Services as an additional Remodulin producer, in the larger quantities described above.

We rely on Catalent Pharma Solutions, Inc. (Catalent) to do the following: (1) conduct stability studies on Remodulin, (2) serve as an additional producer of Tyvaso and oral treprostinil tablets, and (3) analyze other products we develop. We are also manufacturing oral treprostinil tablets, which are being used in our clinical trials, in our facility in Research Triangle Park, North Carolina (RTP Facility).

We intend to use our own facilities to produce our primary supply of Remodulin, Tyvaso and oral treprostinil tablets, and we will continue to contract with third parties to supplement our production capacity. Also, although we maintain a two-year inventory of Remodulin and Tyvaso based on expected demand, we believe that having third parties approved to produce these products will mitigate some of our risks, including the risk that we might not be able to produce sufficient quantities to meet patient demand.

Under our manufacturing and supply agreement with Lilly, Lilly manufactures and distributes Adcirca through its wholesaler network in the same manner that it distributes its own pharmaceutical products. Under the terms of this agreement, we take title to Adcirca upon completion of its manufacture by Lilly. Adcirca is shipped to customers, generally pharmaceutical wholesalers, in accordance with purchase orders received by Lilly. Although Lilly provides these services on our behalf, we maintain the risk of loss as it pertains to inventory and non-payment of invoices.

We manufacture the nebulizer used in our Tyvaso Inhalation System. While we manage the manufacturing process, NEBU-TEC supplies all the labor to manufacture the nebulizers. In December 2010, Minnetronix, Inc. (Minnetronix) was approved by the FDA as a second manufacturer of the Tyvaso Inhalation System.

In July 2012, we received FDA approval for a modified Tyvaso Inhalation System based on the results of the completion of certain post marketing commitments relating to the inhalation device. As a result, we are currently manufacturing the modified inhalation system (TD-100), which we expect to release commercially during 2013. Consequently, as of December 31, 2012, we increased our reserves



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for inventory obsolescence by \$8.9 million based on the estimated cost of inhalation device inventory we do not expect to be salable as a result of the commercial release of TD-100.

Although we believe that other third parties could provide similar products, services and materials, there are few companies that could replace our existing producers and suppliers. A change in supplier or manufacturer could cause a delay in the manufacture, distribution and research efforts associated with our respective products or result in increased costs. See also *Item 1A Risk Factors* included in this Annual Report on Form 10-K.

**Competition**

Many drug companies engage in research and development to commercialize products to treat cardiovascular and infectious diseases and cancer. For the treatment of PAH, we compete with many approved products in the United States and the rest of the world, including the following:

*Flolan*. The first product approved by the FDA for treating PAH, Flolan (epoprostenol) is a prostacyclin that is delivered by intravenous infusion. Glaxo began marketing Flolan in the United States in 1996. In 2006, Myogen, Inc. (Myogen) acquired the marketing rights from Glaxo for Flolan in the United States. In 2006, Myogen was acquired by Gilead Sciences, Inc. (Gilead). In 2009, Gilead returned the rights to Flolan to Glaxo. The generic exclusivity period for Flolan expired in April 2007;

*Generic epoprostenol and Veletri*. In 2008, Teva announced that the FDA approved its version of generic epoprostenol for the treatment of PAH. In 2008, GeneraMedix Inc. (GeneraMedix) received FDA approval for its version of epoprostenol, which is stable at room temperature. In 2009, Actelion announced that it had entered into an agreement with GeneraMedix to acquire its epoprostenol product, marketed as Veletri, and began commercial sales in 2010;

*Ventavis and Ilomedin®*. Approved in 2004 in the United States and in 2003 in Europe, Ventavis (iloprost) is an inhaled prostacyclin analogue. Ventavis was initially marketed by CoTherix, Inc. (CoTherix) in the United States and is marketed by Bayer Schering Pharma AG (Bayer) in Europe as Iloprost. In 2007, CoTherix was acquired by Actelion, the manufacturer and distributor of Tracleer and distributor of Veletri. Iloprost is also marketed by Bayer in certain countries outside the United States in an intravenous form known as Ilomedin;

*Tracleer*. The first oral drug to be approved for PAH, Tracleer (bosentan) is also the first drug in its class, which consists of drugs known as ETAs. Tracleer was approved in 2001 in the United States and in 2002 in Europe. Tracleer is marketed worldwide by Actelion;

*Letairis®*. Approved in 2007 in the United States, Letairis (ambrisentan) is an oral therapy marketed by Gilead for the treatment of PAH. Like Tracleer, Letairis is an ETA. In 2008, Glaxo received marketing authorization from the EMA for Letairis in Europe, where it is known as Volibris®;

*Revatio*. Approved in 2005 in the United States, Revatio (sildenafil citrate) is also an oral therapy and is marketed by Pfizer. Revatio contains sildenafil citrate, the same active ingredient as Viagra, and is the first PDE-5 inhibitor to be approved for PAH; and

*Generic sildenafil citrate*. In the fourth quarter of 2012, several companies began marketing generic formulations of sildenafil citrate.

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There are also a variety of investigational PAH therapies in the later stages of development, including the following:

*Macitentan*, an oral ETRA being developed by Actelion. In November 2012, Actelion submitted an MAA for macitentan to the EMA. In December 2012, the FDA accepted Actelion's NDA for macitentan;

*Riociguat*, an oral agent targeting a similar vasodilatory pathway as PDE-5 inhibitors. In February 2013, Bayer announced that it had filed an NDA and a Marketing Authorization Application (MAA) for the approval of Riociguat for the treatment of PAH in the United States and Europe;

*Selexipag*, an oral prostacyclin receptor agonist being developed jointly by Actelion and Nippon Shinyaku Co., Ltd. in Japan, and by Actelion outside Japan, is currently undergoing a phase III trial; and

*Gleevec® (imatinib)*, a small molecule kinase inhibitor in oral tablet form approved for treating various cancers, is being studied for the treatment of PAH. Novartis Pharmaceuticals Corporation (Novartis) completed a phase III trial of Gleevec for the treatment of PAH in September 2011. During the third quarter of 2012, Novartis withdrew its NDA in order to submit additional data to the FDA and during the first quarter of 2013 withdrew the MAA it had filed with the EMA.

Oral therapies (Adcirca, Revatio, generic sildenafil citrate, Tracleer and Letairis) are commonly prescribed as first-line treatments for the least severely ill patients (NYHA Class II patients). As patients progress in their disease severity (NYHA Class III and IV), inhaled therapies (Tyvaso and Ventavis) or infusion therapies (Remodulin and Flolan) are commonly added. The use of the available oral therapies and Tyvaso, either alone or in combination, could delay the need for infusion therapy for many patients. As a result, the success of other therapies in preventing disease progression affects our commercial products. Furthermore, the commercialization of generic forms of other approved PAH therapies and the development of new 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 compete successfully with established and newly developed drugs or products, or the companies that develop and market them.*

We could also face competition from generic pharmaceutical companies in the future. In February 2012, we received notice of an abbreviated new drug application by Sandoz Inc. requesting FDA approval to market a generic version of the 10 mg/mL strength of Remodulin. On December 7, 2012, we received notice that Sandoz had amended its previously filed abbreviated new drug application to request additional approval to market generic versions of the 1 mg/mL, 2.5 mg/mL, and 5 mg/mL strengths of Remodulin. For further details, see the section below entitled *Governmental Regulation Hatch-Waxman Act and Item 3. Legal Proceedings.*

In addition, certain Revatio patents expired in 2012, leading several manufacturers to launch generic formulations of sildenafil citrate, which physicians could prescribe for the treatment of PAH. Generic sildenafil citrate's lower price, relative to Adcirca, could lead to an erosion of Adcirca's market share and limit its growth potential. Although we believe Adcirca's once-daily dosing regimen provides a significant competitive advantage over generic sildenafil citrate's dosing regimen of three times per day, we expect government payers and private insurance companies to favor the use of the less expensive generic sildenafil citrate instead of Adcirca.

We compete with the developers, manufacturers and distributors of all of these products 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,

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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**

*Pharmaceutical Product Approval Process*

The research, development, testing, manufacture, promotion, marketing, distribution, sampling, storage, approval, labeling, record keeping, post-approval monitoring and reporting, and import and export of pharmaceutical products (drugs or biological products, hereinafter collectively drugs) are extensively regulated by governmental agencies in the United States and in other countries. In the United States, failure to comply with requirements under the Federal Food, Drug, and Cosmetic Act (FDC Act), the Public Health Service Act, and other federal statutes and regulations, may subject a company to a variety of administrative or judicial sanctions, such as FDA refusal to approve pending NDAs or biologics license applications (BLAs), warning letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, civil penalties, and criminal prosecution.

Satisfaction of FDA pre-market approval requirements typically takes many years, and the actual time required may vary substantially based upon the type, complexity and novelty of the product or disease. Drugs are subject to rigorous regulation by the FDA in the United States, the EMA 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, which must become effective before clinical testing may commence;

Clinical studies in healthy volunteers;

Clinical studies in patients to explore safety, efficacy and dose-response characteristics;

Adequate and well-controlled clinical trials to establish the safety and efficacy of the drug for each indication;

The submission of an NDA or BLA to the FDA; and

FDA review and approval of the NDA or BLA prior to any commercial sale or shipment of the drug.

Preclinical tests include laboratory evaluation of product chemistry and formulation, as well as animal studies to explore toxicity and for proof-of-concept. The conduct of the preclinical tests must comply with federal regulations and requirements including good laboratory practices. In the United States, the results of preclinical testing are submitted to the FDA as part of an IND, along with other information including information about product chemistry, manufacturing and controls and a proposed clinical trial protocol. Long-term preclinical tests, such as animal tests of reproductive toxicity and carcinogenicity, may continue after the IND is submitted. Absent FDA objection within 30 days after submission of an IND, the IND becomes effective and the clinical trial proposed in the IND may begin. At any time during this 30-day period or at any time thereafter, the FDA may halt proposed or ongoing clinical trials. 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.

Clinical trials involve the administration of the investigational new drug or biologic to healthy volunteers or patients under the supervision of a qualified investigator. Clinical trials must be

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conducted: (i) in compliance with federal regulations; (ii) in compliance with good clinical practices (GCP), an international standard meant to protect the rights and health of patients and to define the roles of clinical trial sponsors, administrators, and monitors; and (iii) under protocols detailing the objectives of the trial, the parameters to be used in monitoring safety and the criteria to be evaluated. Each protocol involving testing on U.S. patients and subsequent protocol amendments must be submitted to the FDA as part of the IND.

The FDA may order the temporary or permanent discontinuation of a clinical trial at any time or impose other sanctions if it believes that the clinical trial is not being conducted in accordance with FDA requirements or presents an unacceptable risk to the clinical trial patients. The study protocol and informed consent information for patients in clinical trials must also be submitted to an institutional review board (IRB) for approval. An IRB may also require the clinical trial at a site to be halted temporarily or permanently for failure to comply with the IRB's requirements, or may impose other conditions.

Clinical trials in support of an NDA or a BLA are typically conducted in three sequential phases, but the phases may overlap. During phase I, the initial introduction of the drug into healthy human subjects or patients, the drug is tested to assess metabolism, pharmacokinetics, pharmacological actions, side effects associated with increasing doses, and, if possible, early evidence on effectiveness. Phase II usually involves studies in a limited patient population to: assess the efficacy of the drug in specific, targeted indications; assess tolerance and optimal dosage; and identify possible adverse effects and safety risks. If a compound is found to be potentially effective and to have an acceptable safety profile in phase II evaluations, then phase III trials, also called pivotal studies, major studies or advanced clinical trials, are undertaken to demonstrate clinical efficacy and safety in a larger number of patients, typically at geographically diverse clinical study sites, to permit the FDA to evaluate the overall benefit-risk relationship of the drug and to provide adequate information for the labeling of the drug.

After successful completion of the required clinical testing, an NDA or a BLA is typically submitted to the FDA in the United States, and an MAA is typically submitted to the EMA in the EU. FDA approval of the NDA or BLA is required before marketing of the product may begin in the U.S. The NDA or BLA must include the results of all preclinical, clinical and other testing and a compilation of data relating to the product's pharmacology, chemistry, manufacture, and controls. The cost of preparing and submitting an NDA or BLA is substantial. Under federal law, the submission of most NDAs and BLAs is additionally subject to a substantial application fee, currently exceeding \$1.95 million, and the manufacturer and/or sponsor of an approved new drug application are also subject to annual product and establishment fees, currently exceeding \$98,000 per product and \$526,000 per establishment. These fees are typically increased annually. However, the application fees may be waived for orphan drugs if certain requirements are met.

The FDA has 60 days from its receipt of an NDA or a BLA to determine whether the application will be accepted for filing based on the agency's threshold determination that it is sufficiently complete to permit substantive review. Once the submission is accepted for filing, the FDA begins an in-depth review. The FDA has agreed to certain performance goals in the review of new drug applications. Most such applications for non-priority drug products are reviewed within ten to twelve months, while most applications for priority review drugs are reviewed in six to eight months. Priority review can be applied to drugs that the FDA determines offer major advances in treatment, or provide a treatment where no adequate therapy exists. For biologics, priority review is further limited to drugs intended to treat a serious or life-threatening disease. The review process may be extended by the FDA for three additional months to consider certain information submitted during FDA review, including information intended to clarify information already provided in the submission. The FDA may also refer applications for novel pharmaceutical products or pharmaceutical products that present difficult questions of safety or efficacy to an advisory committee, typically a panel that includes clinicians and other experts, for review, evaluation and a recommendation as to whether the application should be

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approved. The FDA is not bound by the recommendation of an advisory committee, but it generally follows such recommendations. Before approving an NDA or a BLA, the FDA will typically inspect one or more clinical sites to assure compliance with GCP. Additionally, the FDA will inspect the facility or the facilities at which the drug is manufactured. The FDA will not approve the product unless compliance with current good manufacturing practices is satisfactory and the NDA or BLA contains data that provide substantial evidence that the pharmaceutical product is safe and effective for the indication studied.

In the United States, after the FDA evaluates the NDA and the manufacturing facilities, the FDA may issue either an approval letter or a complete response letter. A complete response letter generally outlines the deficiencies in the submission and may require substantial additional testing or information in order for the FDA to reconsider the application. If and when those conditions have been addressed to the FDA's satisfaction in a resubmission of the NDA or BLA, the FDA will issue an approval letter. The FDA has committed to reviewing such resubmissions in two or six months depending on the type of information included. A Class 1 resubmission may contain only limited information such as labeling, safety updates, stability updates, or minor analysis updates or clarifying information and is subject to a two-month review period. All other resubmissions are categorized as Class 2 and are subject to a six-month review period.

An approval letter authorizes commercial marketing of the drug with specific prescribing information for specific indications. As a condition of NDA approval, the FDA may require a risk evaluation and mitigation strategy (REMS) to help ensure that the benefits of the drug outweigh the potential risks. A REMS can include medication guides, communication plans for healthcare professionals, and elements to assure safe use (ETASU). ETASU can include, but are not limited to, special training or recertification for prescribing or dispensing, dispensing only under certain circumstances, special monitoring, and the use of patient registries. The requirement for a REMS can materially affect the potential market and profitability of the drug. To continue marketing our products after approval, applicable regulations require us to maintain a positive risk-benefit profile, maintain regulatory applications through periodic reports to regulatory authorities, fulfill pharmacovigilance requirements, maintain manufacturing facilities according to the FDA's current Good Manufacturing Practices requirements, and successfully complete regulatory agency inspections, among other requirements. Our manufacturing facilities are subject to continual review and periodic inspections. Once granted, product approvals may be withdrawn if compliance with regulatory standards is not maintained or problems are identified following initial marketing.

***Disclosure of Clinical Trial Information***

Sponsors of clinical trials of FDA-regulated drugs and other products are required to register and disclose certain clinical trial information related to the product, patient population, phase of investigation, study sites and investigators, and other aspects of the clinical trial. This clinical trial information is then made public as part of the sponsor's registration. Sponsors are also obligated to disclose the results of their clinical trials after completion. Competitors may use this publicly-available information to gain knowledge regarding the progress of development programs.

***Orphan Drugs***

Under the Orphan Drug Act, an applicant can request the FDA to designate a product as an "orphan drug" in the United States if the drug is intended to treat an orphan, or rare, disease or condition. A disease or condition is considered orphan if it affects fewer than 200,000 people in the United States. Orphan drug designation must be requested before submitting an NDA or BLA. After the FDA grants orphan drug designation, the generic identity of the drug and its potential orphan use are disclosed publicly by the FDA. Orphan drug designation does not convey any advantage in, or shorten the duration of, the regulatory review and approval process. The first NDA applicant to receive

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orphan drug designation and FDA approval for a particular active ingredient to treat a particular disease is entitled to a seven-year exclusive marketing period in the U.S. for that product, for that indication. During the seven-year period, the FDA may not approve any other application to market the same drug for the same disease, except in limited circumstances, such as a showing of clinical superiority to the product with orphan drug exclusivity. Orphan drug exclusivity does not prevent the FDA from approving a different drug for the same disease or condition, or the same drug for a different disease or condition. Among the other benefits of orphan drug designation are tax credits for certain research and a waiver of the NDA application user fee.

The FDA granted orphan drug designation for the active ingredient treprostinil for the treatment of PAH as a continuous infusion. However, this designation does not preclude us from seeking orphan drug designation for other formulations or routes of administration, such as oral or inhaled, of treprostinil to treat PAH, or for treprostinil used to treat other orphan diseases. In order for the FDA to grant orphan drug designation for other formulations or routes of administration of treprostinil to treat PAH, we must demonstrate that such new formulation or route of administration is clinically superior to the formulation or route of administration previously granted orphan drug designation. The FDA has granted orphan drug designation for Tyvaso.

***Pediatric Information***

Under the Pediatric Research Equity Act of 2007 (PREA), NDAs, BLAs and supplements to NDAs and BLAs must contain data to assess the safety and effectiveness of the drug for the claimed indication(s) in all relevant pediatric subpopulations and to support dosing and administration for each such pediatric subpopulation for which the drug is safe and effective. The FDA may grant deferrals for submission of data or full or partial waivers. Unless otherwise required by regulation, the PREA does not apply to any drug for an indication for which orphan drug designation has been granted.

The Best Pharmaceuticals For Children Act (BPCA) provides NDA holders a six-month extension of any exclusivity, patent or non-patent, for a drug if certain conditions are met. Conditions for exclusivity include the FDA's determination that information relating to the use of a new drug in the pediatric population may produce health benefits in that population, the FDA making a written request for pediatric studies, and the applicant agreeing to perform, and reporting on, the requested studies within the statutory timeframe. Applications under the BPCA are treated as priority applications, with all of the benefits that designation confers.

***Hatch-Waxman Act***

The Hatch-Waxman Act (also known as the Drug Price Competition and Patent Term Restoration Act) was enacted in 1984 to encourage research and development of new drugs and competition between brand and generic pharmaceutical companies. It created a faster approval process for generic drugs, called the abbreviated new drug application (ANDA), while it provided protection to brand pharmaceuticals by extending their patent protection to compensate for patent time lost during the FDA review and approval process and periods of market exclusivity to encourage continuing research on, for example, new uses, strengths or dosage forms for existing drugs. In seeking approval of a drug through an NDA, applicants are required to submit to the FDA each patent that covers the applicant's product or FDA approved method of using this product. Upon approval of a drug, each of the patents listed in the application is then published in the FDA's Approved Drug Products with Therapeutic Equivalence Evaluations, commonly known as the Orange Book. Drugs listed in the Orange Book can, in turn, be cited by potential competitors in support of approval of an ANDA. Generally, an ANDA provides for marketing of a drug product that has the same active ingredients in the same strength(s), route of administration, and dosage form as the listed drug and has been shown through bioequivalence testing to be therapeutically equivalent to the listed drug. ANDA applicants are not required to conduct or submit results of pre-clinical or clinical tests to prove the safety or effectiveness of their drug product, other than the requirement for bioequivalence testing. Drugs approved in this way are commonly referred to as "generic equivalents" to the listed drug, and can often be substituted by pharmacists under prescriptions written for the original listed drug.

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The ANDA applicant is required to certify to the FDA concerning any patents listed for the approved product in the FDA's Orange Book. Specifically, the applicant must certify that: (i) the required patent information has not been filed; (ii) the listed patent has expired; (iii) the listed patent has not expired, but will expire on a particular date and approval is sought after patent expiration; or (iv) the listed patent is invalid or will not be infringed by the new product. A certification that the new product will not infringe the already approved product's listed patents or that such patents are invalid is called a Paragraph IV certification. If the applicant does not challenge the listed patents, the ANDA application will not be approved until all the listed patents claiming the referenced product have expired. Alternatively, for a patent covering an approved method of use, an ANDA applicant may submit a statement to the FDA that the company is not seeking approval for the covered use.

If the ANDA applicant has submitted a Paragraph IV certification to the FDA, the applicant must also send notice of the Paragraph IV certification to the NDA and patent holders once the ANDA has been accepted for filing by the FDA. The NDA and patent holders may then initiate a patent infringement lawsuit in response to the notice of the Paragraph IV certification. The filing of a patent infringement lawsuit within 45 days of the receipt of a Paragraph IV certification automatically prevents the FDA from approving the ANDA until the earlier of 30 months, expiration of the patent, settlement of the lawsuit or a decision in the infringement case that is favorable to the ANDA applicant.

The ANDA application also will not be approved until any non-patent exclusivity, such as exclusivity for obtaining approval of a new chemical entity, listed in the Orange Book for the referenced product has expired. Federal law provides a period of five years following approval of a drug containing no previously approved active moiety, during which ANDAs for generic versions of those drugs cannot be submitted unless the submission contains a Paragraph IV challenge to a listed patent, in which case the submission may be made four years following the original product approval. Following approval of a listed drug that contains previously approved active ingredients but is approved in a new dosage form, route of administration or combination, or for a new condition of use that was required to be supported by new clinical trials conducted by or for the sponsor, federal law provides for an exclusivity period of three years, during which the FDA cannot grant effective approval of an ANDA for such new condition of use, dosage form or strength that meets certain statutory requirements. Both of the five-year and three-year exclusivity periods, as well as any unexpired patents listed in the Orange Book for the listed drug, can be extended by six months if the FDA grants the NDA sponsor a period of pediatric exclusivity based on studies submitted by the sponsor in response to a written request.

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 a 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 with the maximum patent term extension of five years, and the patent will expire on October 6, 2014.

In February 2012, we received notice of an abbreviated new drug application by Sandoz Inc. requesting FDA approval to market a generic version of the 10 mg/mL strength of Remodulin. On December 7, 2012, we received notice that Sandoz had amended its previously filed abbreviated new drug application, and was requesting additional approval to market generic versions of the 1mg/mL, 2.5 mg/mL, and 5 mg/mL strengths of Remodulin. For further details, see *Item 3. Legal Proceedings*.

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***Section 505(b)(2) New Drug Applications***

Most drug products (other than biological products) obtain FDA marketing approval pursuant to an NDA or an ANDA. A third alternative is a special type of NDA, commonly referred to as a Section 505(b)(2) NDA, which enables the applicant to rely, in part, on the FDA's finding of safety and efficacy data for an existing product, or published literature, in support of its application.

Section 505(b)(2) NDAs often provide an alternate path to FDA approval for new or improved formulations or new uses of previously approved products. Section 505(b)(2) permits the filing of an NDA where at least some of the information required for approval comes from studies not conducted by or for the applicant and for which the applicant has not obtained a right of reference. The applicant may rely upon certain preclinical or clinical studies conducted for an approved product. The FDA may also require companies to perform additional studies or measurements to support the change from the approved product. The FDA may then approve the new product candidate for all or some of the labeled indications for which the referenced product has been approved, as well as for any new indication for which the Section 505(b)(2) NDA applicant has submitted data.

To the extent that the Section 505(b)(2) applicant is relying on prior FDA findings of safety and efficacy, the applicant is required to certify to the FDA concerning any patents listed for the approved product in the Orange Book to the same extent that an ANDA applicant would. Thus, approval of a Section 505(b)(2) NDA can be delayed until all the listed patents claiming the referenced product have expired, until any non-patent exclusivity, such as exclusivity for obtaining approval of a new chemical entity, listed in the Orange Book for the referenced product has expired, and, in the case of a Paragraph IV certification and subsequent patent infringement suit, until the earlier of 30 months, settlement of the lawsuit or a decision in the infringement case that is favorable to the Section 505(b)(2) NDA applicant.

***Other Regulatory Requirements***

Once an NDA or a BLA is approved, a product will be subject to certain post-approval requirements. For instance, the FDA closely regulates the post-approval marketing and promotion of drugs, including standards and regulations for direct-to-consumer advertising, off-label promotion, industry-sponsored scientific and educational activities and promotional activities involving the internet.

Pharmaceutical products may be marketed only for the approved indications and in accordance with the provisions of the approved labeling. Changes to some of the conditions established in an approved application, including changes in indications, labeling, or manufacturing processes or facilities, require submission and FDA approval of a new or supplemental NDA/BLA before the change can be implemented. An NDA/BLA supplement for a new indication typically requires clinical data similar to that in the original application, and the FDA uses the same procedures and actions in reviewing supplements as it does in reviewing NDAs or BLAs.

Adverse event reporting and submission of periodic reports continue to be required following FDA approval of an NDA or a BLA. The FDA also may require post-marketing testing, known as phase IV testing, risk minimization action plans, and surveillance to monitor the effects of an approved product or place conditions on an approval that could restrict the distribution or use of the product. In addition, quality control as well as drug manufacture, packaging, and labeling procedures must continue to conform to current good manufacturing practices (cGMPs) after approval. Manufacturers and certain of their subcontractors are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA during which the agency inspects manufacturing facilities to assess compliance with cGMPs. Accordingly, manufacturers must continue to expend time, money and effort in the areas of production and quality control to maintain compliance with cGMPs. Regulatory authorities may withdraw product approvals or request



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product recalls if a company fails to comply with regulatory standards or if previously unrecognized problems are subsequently discovered.

***Marketing Pharmaceutical Products Outside the United States***

Outside of the United States, our ability to market our products is also contingent upon receiving marketing authorizations from 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.

In the EU, marketing authorizations may be submitted through a centralized body or through a decentralized/mutual recognition or a national level process. The centralized procedure is mandatory for the approval of biotechnology products, high technology products and orphan products and may be 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/mutual recognition procedure is available for all medicinal products that are not subject to the centralized procedure. The decentralized/mutual recognition 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 is required to 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 usually (depending on the country) required to engage in pricing discussions and negotiations with a separate prescription pricing authority in that country. Commercial sales typically only commence in a country once pricing approval has been obtained.

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/mutual recognition 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 EEA under the mutual recognition process described above. We withdrew applications in Spain, the United Kingdom and Ireland and are currently evaluating resubmitting applications in Spain and Ireland. In December 2011, we received approval for intravenous Remodulin in all of the 23 member nations where subcutaneous Remodulin is approved.

To secure European regulatory approval for Tyvaso, we submitted an MAA to the EMA via the centralized process in 2008. Regulations in Europe have changed since we made our initial filing for Remodulin and all therapies for orphan diseases must now use the centralized process. In February 2010, we withdrew our MAA from consideration by the EMA due to the EMA's major objection related to findings of non-compliance with good clinical practice at two clinical sites. The EMA stated that these findings would preclude a recommendation for approval of Tyvaso in the EU. The EMA had no major objections at the time of withdrawal related to the safety or efficacy of Tyvaso.

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*Biologics*

Biological products used for the prevention, treatment, or cure of a disease, or condition, of a human being are subject to regulation under the FDC Act, except the section of the FDC Act which governs NDA applications. Instead, biological products are approved for marketing under provisions of the Public Health Service Act (PHSA) via a BLA. However, the application process and requirements for approval of BLAs are very similar to those for NDAs. To help reduce the increased risk of the introduction of adventitious agents, the PHSA emphasizes the importance of manufacturing control for products whose attributes cannot be precisely defined. The PHSA also provides authority to the FDA to immediately suspend licenses in situations where there exists a danger to public health, to prepare or procure products in the event of shortages and critical public health needs, and to authorize the creation and enforcement of regulations to prevent the introduction, or spread, of communicable diseases in the United States and between states.

After a BLA is approved, the product may also be subject to official lot release. As part of the manufacturing process, the manufacturer is required to perform certain tests on each lot of the product before it is released for distribution. If the product is subject to official lot release by the FDA, the manufacturer submits samples of each lot of product to the FDA together with a release protocol showing a summary of the history of manufacture of the lot and the results of all of the manufacturer's tests performed on the lot. The FDA may also perform certain confirmatory tests on lots of some products, such as viral vaccines, before releasing the lots for distribution by the manufacturer. In addition, the FDA conducts laboratory research related to the regulatory standards on the safety, purity, potency, and effectiveness of biological products. As with drugs, after approval of biologics, manufacturers must address any safety issues that arise, are subject to recalls or a halt in manufacturing, and are subject to periodic inspection after approval.

The PPACA included a subtitle called the Biologics Price Competition and Innovation Act of 2009, or BPCI Act, which created an abbreviated approval pathway for biological products shown to be similar to, or interchangeable with, an FDA-licensed reference biological product. This is conceptually similar to the Hatch-Waxman Act in that it attempts to minimize duplicative testing. Biosimilarity, which requires that there be no clinically meaningful differences between the biological product and the reference product in terms of safety, purity, and potency must be shown through analytical studies, animal studies, and at least one clinical study absent a waiver. Interchangeability requires that a product must demonstrate that it can be expected to produce the same clinical results as the reference product and, for products administered multiple times, the biologic and the reference biologic may be switched after one has been previously administered without increasing safety risks or risks of diminished efficacy relative to exclusive use of the reference biologic. However, complexities associated with the larger, and often more complex, structures of biological products, as well as the processes by which such products are manufactured, pose significant hurdles to implementation which are still being addressed by the FDA.

A reference biologic is granted twelve years of exclusivity from the time of first licensure of the reference product. The first biologic product submitted under the abbreviated approval pathway that is determined to be interchangeable with the reference product has exclusivity against other biologics submitted under the abbreviated approval pathway for the lesser of (i) one year after first commercial marketing; (ii) eighteen months after the initial application if there is no legal challenge; (iii) eighteen months after the resolution in the applicant's favor of a lawsuit challenging the biologics' patents if an application has been submitted; or (iv) 42 months after the application has been approved if a lawsuit is ongoing within the 42 month period.

Because biologically sourced raw materials are subject to unique contamination risks, their use may be restricted in some countries.

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*Cell and Tissue Based Biologics*

Manufacturers of cell and tissue based products must comply with the FDA's current good tissue practices (cGTP), which are FDA regulations that govern the methods used in, and the facilities and controls used for, the manufacture of such products. The primary intent of the cGTP requirements is to ensure that cell and tissue based products are manufactured in a manner designed to prevent the introduction, transmission and spread of communicable diseases. Cell and tissue based products may also be subject to the same approval standards, including demonstration of safety and efficacy, as other biologic and drug products, if they meet certain criteria such as if the cells or tissues are more than minimally manipulated or if they are intended for a non-homologous use (a use different from the cell's origin).

*U.S. Regulation of Medical Devices*

New medical devices are also subject to FDA approval and extensive regulation under the FDCA. Under the FDCA, medical devices are classified into one of three classes: Class I, Class II, or Class III. The classification of a device into one of these three classes generally depends on the degree of risk associated with the medical device and the extent of control needed to ensure safety and effectiveness.

Class I devices are those for which safety and effectiveness can be assured by adherence to a set of general controls. These general controls include compliance with the applicable portions of the FDA's Quality System Regulation (QSR), which sets forth good manufacturing practice requirements; facility registration and product reporting of adverse medical events listing; truthful and non-misleading labeling; and promotion of the device only for its cleared or approved intended uses. Class II devices are also subject to these general controls and to any other special controls as deemed necessary by the FDA to ensure the safety and effectiveness of the device. Review and clearance by the FDA for these devices is typically accomplished through the so-called 510(k) pre-market notification procedure. A Class III device requires approval of a premarket application (PMA), an expensive, lengthy and uncertain process requiring many years to complete.

When 510(k) clearance is sought, a sponsor must submit a pre-market notification demonstrating that the proposed device is substantially equivalent to a previously approved device. If the FDA agrees that the proposed device is substantially equivalent to the predicate device, then 510(k) clearance to market will be granted. After a device receives 510(k) clearance, any modification that could significantly affect its safety or effectiveness, or that would constitute a major change in its intended use, requires a new 510(k) clearance or could require pre-market approval.

Clinical trials are almost always required to support a PMA and are sometimes required for a 510(k) pre-market notification. These trials generally require submission of an application for an investigational device exemption, or IDE. An IDE must be supported by pre-clinical data, such as animal and laboratory testing results, which show that the device is safe to test in humans and that the study protocols are scientifically sound. The IDE must be approved in advance by the FDA for a specified number of patients, unless the product is deemed a non-significant risk device and is eligible for more abbreviated investigational device exemption requirements.

Both before and after a medical device is commercially distributed, manufacturers and marketers of the device have ongoing responsibilities under FDA regulations. The FDA reviews design and manufacturing practices, labeling and record keeping, and manufacturers' required reports of adverse experiences and other information to identify potential problems with marketed medical devices. Device manufacturers are subject to periodic and unannounced inspection by the FDA for compliance with the QSR, current good manufacturing practice requirements that govern the methods used in, and the facilities and controls used for, the design, manufacture, packaging, servicing, labeling, storage, installation, and distribution of all finished medical devices intended for human use.

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If the FDA finds that a manufacturer has failed to comply or that a medical device is ineffective or poses an unreasonable health risk, it can institute or seek a wide variety of enforcement actions and remedies, ranging from a public warning letter to more severe actions such as:

- fines, injunctions, and civil penalties;
- recall or seizure of products;
- operating restrictions, partial suspension or total shutdown of production;
- refusing requests for 510(k) clearance or PMA approval of new products;
- withdrawing 510(k) clearance or PMA approvals already granted; and
- criminal prosecution.

The FDA also has the authority to require repair, replacement or refund of the cost of any medical device.

The FDA also administers certain controls over the export of medical devices from the United States, as international sales of medical devices that have not received FDA approval are subject to FDA export requirements. Additionally, each foreign country subjects such medical devices to its own regulatory requirements. In the EU, a single regulatory approval process has been created, and approval is represented by the CE Mark.

The nebulizer used with our Tyvaso Inhalation System was included in our NDA for Tyvaso, and was cleared by the FDA subject to compliance with the QSR as it applies to combination products. In July 2012, we received FDA approval for a modified Tyvaso Inhalation System using an updated nebulizer (TD-100) based on the results of the completion of the QSR compliance commitments.

***Government Reimbursement of Pharmaceutical Products***

In the United States, many independent third-party payers, as well as the Medicare and State Medicaid programs, reimburse buyers of our commercial products. Medicare is the federal program that provides health care benefits to senior citizens and certain disabled and chronically ill persons. Medicaid is the federal program administered by the states to provide health care benefits to certain indigent persons. The Medicare contractors who administer the program provide reimbursement for Remodulin at a rate equal to 95% of the published average wholesale price as of October 1, 2003 (the Medicare Part B payment formula, under the Durable Medical Equipment Regional Carrier Guidelines, for drugs infused through durable medical equipment) and for Tyvaso at a rate of 106% of the average sales price (the Medicare Part B payment formula for drugs inhaled through durable medical equipment and also under the Durable Medical Equipment Regional Carrier Guidelines). Adcirca, an oral drug, is reimbursed under the Medicare Part D program. The State Medicaid programs also generally provide reimbursement for our commercial products, at reimbursement rates that are below the published average wholesale price and that vary from state to state. In return for including our pharmaceutical commercial products in the Medicare Part B and Medicaid programs, we have agreed to pay a rebate to State Medicaid agencies that provide reimbursement for those products. We have also agreed to sell our commercial products under contracts with the Department of Veterans Affairs, Department of Defense, Public Health Service and numerous other federal agencies as well as certain hospitals that are designated as 340B covered entities (entities designated by federal programs to receive drugs at discounted prices) at prices that are significantly below the price we charge to our specialty pharmaceutical distributors. These programs and contracts are highly regulated and impose restrictions on our business. Failure to comply with these regulations and restrictions could result in a loss of our ability to continue receiving reimbursement for our drugs. We estimate that between 35-50% of Remodulin, Tyvaso and Adcirca sales in the United States are reimbursed under the Medicare and Medicaid programs.

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***Anti-Kickback, False Claims Laws and The Prescription Drug Marketing Act***

In addition to FDA restrictions on marketing pharmaceutical products, several other types of state and federal laws have been applied to restrict certain marketing practices in the pharmaceutical industry in recent years. These laws include anti-kickback statutes and false claims statutes. The federal healthcare program anti-kickback statute prohibits, among other things, knowingly and willfully offering, paying, soliciting or receiving remuneration to induce or in return for purchasing, leasing, ordering or arranging for the purchase, lease or order of any healthcare item or service reimbursable under Medicare, Medicaid or other federally financed healthcare programs. This statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on the one hand and prescribers, purchasers and formulary managers on the other. Violations of the anti-kickback statute are punishable by imprisonment, criminal fines, civil monetary penalties and exclusion from participation in federal healthcare programs. Although there are a number of statutory exemptions and regulatory safe harbors protecting certain common activities from prosecution or other regulatory sanctions, the exemptions and safe harbors are drawn narrowly, and practices that involve remuneration intended to induce prescribing, purchases or recommendations may be subject to scrutiny if they do not qualify for an exemption or safe harbor.

Federal false claims laws prohibit any person from knowingly presenting, or causing to be presented, a false claim for payment to the federal government, or knowingly making, or causing to be made, a false statement to have a false claim paid. Many pharmaceutical and other healthcare companies have been prosecuted under these laws for allegedly inflating drug prices they report to pricing services, which in turn were used by the government to set Medicare and Medicaid reimbursement rates, and for allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product. In addition, certain marketing practices, including off-label promotion, may also violate false claims laws. The majority of states also have statutes or regulations similar to the federal anti-kickback law and false claims laws, which apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payer. Sanctions under these federal and state laws may include civil monetary penalties, exclusion of a manufacturer's products from reimbursement under government programs, criminal fines, and imprisonment.

As part of the sales and marketing process, pharmaceutical companies frequently provide samples of approved drugs to physicians. The Prescription Drug Marketing Act (PDMA) imposes requirements and limitations upon the provision of drug samples to physicians, and prohibits states from licensing distributors of prescription drugs unless the state licensing program meets certain federal guidelines that include minimum standards for storage, handling and record keeping. In addition, the PDMA sets forth civil and criminal penalties for violations.

***Patient Protection and Affordable Care Act of 2010***

The Patient Protection and Affordable Care Act of 2010, as amended by the Health Care and Education Reconciliation Act of 2010 (PPACA) is intended to expand healthcare coverage within the U.S.

Several provisions of the new law, which have varying effective dates, may affect us and will likely increase certain of our costs. For example, an increase in the minimum Medicaid rebate rate from 15.1 percent to 23.1 percent of average manufacturer price became effective as of January 2010, and the volume of rebated drugs has been expanded to include beneficiaries in Medicaid managed care organizations, effective as of March 2010. The PPACA also imposes an annual fee on pharmaceutical manufacturers, based on the manufacturer's sale of branded pharmaceuticals and biologics (excluding orphan drugs) to certain U.S. government programs during the preceding year; expands the 340B drug discount program (excluding orphan drugs) including the creation of new penalties for non-compliance;

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and includes a 50% discount on brand name drugs for Medicare Part D participants in the coverage gap, or "donut hole". The law also revised the definition of "average manufacturer price" for reporting purposes effective October 2010, which could increase the amount of the Medicaid drug rebates paid to states.

The PPACA also created a regulatory pathway for the abbreviated approval of biological products that are demonstrated to be "biosimilar" or "interchangeable" with an FDA-approved biological product. In order to meet the standard of interchangeability, a sponsor must demonstrate that the biosimilar product can be expected to produce the same clinical result as the reference product, and for a product that is administered more than once, that the risk of switching between the reference product and biosimilar product is not greater than the risk of maintaining the patient on the reference product. Such biosimilars would reference biological products approved in the U.S. The law establishes a period of 12 years of data exclusivity for reference products, which protects the data in the original BLA by prohibiting sponsors of biosimilars from gaining FDA approval based in part on reference to data in the original BLA.

In addition, the PPACA imposes new reporting requirements for pharmaceutical and device manufacturers with regard to payments or other transfers of value made to physicians and teaching hospitals, with the first report due on March 31, 2013. In addition, pharmaceutical and device manufacturers will be required to report investment interests held by physicians and their immediate family members during the preceding calendar year. Such information is to be made publicly available by the Secretary of Health and Human Services in a searchable format beginning September 30, 2013. Failure to submit required information may result in civil monetary penalties of up to \$150,000 per year (and up to \$1 million per year for "knowing failures") for all payments, transfers of value or ownership or investment interests not reported in an annual submission. Further, the PPACA amends the intent requirement of the federal anti-kickback and criminal health care fraud statute. A person or entity no longer needs to have actual knowledge of this statute or specific intent to violate it. In addition, the government may assert that a claim including items or services resulting from a violation of the federal anti-kickback statute constitutes a false or fraudulent claim for purposes of the false claims laws.

***State Pharmaceutical and Medical Device Marketing Laws***

If not preempted by the PPACA, several jurisdictions, including the District of Columbia, Maine, Massachusetts, Minnesota, Vermont and West Virginia, require pharmaceutical companies to report expenses relating to the marketing and promotion of pharmaceutical products and to report gifts and payments to healthcare practitioners in those jurisdictions. Some of these jurisdictions also prohibit various marketing related activities. Still other states require the posting of information relating to clinical studies and their outcomes. In addition, certain states, such as California, Connecticut, Nevada, and Massachusetts, require pharmaceutical companies to implement compliance programs or marketing codes and several other states are considering similar proposals. Compliance with these laws is difficult and time consuming, and companies that do not comply with these state laws face civil penalties.

**Employees**

We had 623 employees as of February 8, 2013. The success of our business is highly dependent on attracting and retaining highly talented and qualified personnel.

**Industry Segments and Geographic Areas**

Prior to the sale of Medicomp in March 2011, we operated in two business segments: pharmaceuticals and telemedicine. Our core business is pharmaceuticals in which we closely monitor the revenues and gross margins generated by our commercial products. 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 18 *Segment Information* to our consolidated financial statements included in this Annual Report on Form 10-K.

Table of Contents**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 at <http://www.sec.gov/edgar/searchedgar/companysearch.html>.

**EXECUTIVE OFFICERS OF THE REGISTRANT**

The following is a list, as of February 26, 2013, setting forth certain information regarding our executive officers. Each executive officer holds office until the first meeting of the Board of Directors after the annual meeting of shareholders, and until his or her successor is elected and qualified or until his or her earlier resignation or removal. Each executive officer's employment will end pursuant to the terms of his or her employment contract. Each of the employment contracts generally provides for an initial term of service of five years, which five-year term may be renewed after each year for additional one-year periods.

<b>Name</b>	<b>Age</b>	<b>Position</b>
Martine A. Rothblatt, Ph.D., J.D., M.B.A.	58	Chairman, Chief Executive Officer and Director
Roger Jeffs, Ph.D.	51	President, Chief Operating Officer and Director
John M. Ferrari	58	Chief Financial Officer and Treasurer
Paul A. Mahon, J.D.	49	Executive Vice President, General Counsel and Corporate Secretary

*Martine A. Rothblatt, Ph.D., J.D., M.B.A.*, founded United Therapeutics in 1996 and has served as Chairman and Chief Executive Officer since its inception. Prior to United Therapeutics, she founded and served as Chairman and Chief Executive Officer of Sirius XM Satellite Radio. She also represented the radio astronomy interests of the National Academy of Sciences' Committee on Radio Frequencies before the Federal Communications Commission and led the International Bar Association's efforts to present the United Nations with a draft Human Genome Treaty. Her book, *YOUR LIFE OR MINE: HOW GEOETHICS CAN RESOLVE THE CONFLICT BETWEEN PUBLIC AND PRIVATE INTERESTS IN XENOTRANSPLANTATION*, was published by Ashgate in 2004. She is a co-inventor on three of our patents pertaining to treprostinil.

*Roger Jeffs, Ph.D.*, received his undergraduate degree in chemistry from Duke University and his Ph.D. in pharmacology from the University of North Carolina. Dr. Jeffs joined United Therapeutics in September 1998 as Director of Research, Development and Medical. He was promoted to Vice President of Research, Development and Medical in 2000 and to President and Chief Operating Officer in 2001. From 1993 to 1995, Dr. Jeffs worked at Burroughs Wellcome & Company where he was a member of the clinical research team that developed Flolan, the first FDA-approved therapy for patients with pulmonary arterial hypertension. From 1995 to 1998, Dr. Jeffs worked at Amgen, Inc. where he served as the worldwide clinical leader of the Infectious Disease Program. Dr. Jeffs currently leads our global clinical, commercial, manufacturing and business development efforts.

*John M. Ferrari* joined United Therapeutics in May 2001 as Controller. Mr. Ferrari was promoted to Vice President of Finance in December 2003 and to Vice President of Finance and Treasurer in June 2004. In August 2006, Mr. Ferrari was promoted to Chief Financial Officer and Treasurer. Prior to joining United Therapeutics, Mr. Ferrari served as Controller for Blackboard, Inc., from 1998 to 2001. Prior to his employment with Blackboard, Inc., Mr. Ferrari served in various senior financial management positions since beginning his accounting career in 1984.

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*Paul A. Mahon, J.D.*, has served as General Counsel and Corporate Secretary of United Therapeutics since its inception in 1996. In June 2001, Mr. Mahon joined United Therapeutics full-time as Senior Vice President, General Counsel and Corporate Secretary. In November 2003, Mr. Mahon was promoted to Executive Vice President, General Counsel and Corporate Secretary. Prior to June 2001, he served United Therapeutics, beginning with its formation in 1996, in his capacity as principal and managing partner of a law firm specializing in technology and media law.

## **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, expenses, profitability, and cash flows;

The sufficiency of current and future working capital to support operations;

Our ability to obtain future financing;

The value of our common stock and our ability and plans to complete future common stock repurchases;

The maintenance of domestic and international regulatory approvals;

The expected volume and timing of sales of Remodulin® (treprostiril) Injection (Remodulin), Tyvaso® (treprostiril) Inhalation Solution (Tyvaso), and Adcirca® (tadalafil) tablets (Adcirca);

Our expectations to commercially launch in 2013 a modified Tyvaso Inhalation System approved by United States Food and Drug Administration (FDA) in 2012 (TD-100) and regarding the potential to increase the number of patients using Tyvaso through the further improvement of the Tyvaso Inhalation System;

Our expectation to make Tyvaso available in certain European and Latin American countries in 2013 on an unmarketed, named-patient basis based on physicians' prescriptions in those countries;

The timing and outcome of clinical studies and related regulatory filings, including: (1) our further studies of oral treprostiril and our aim to obtain FDA approval for oral treprostiril before the end of 2016; (2) our plan to file for approval for oral treprostiril in Europe upon the completion of the FREEDOM-EV study; and (3) the expectation that Medtronic Inc. (Medtronic) will complete its phase III study of Remodulin administered with the Synchronmed implantable pump;

The timing and outcome of required pricing approvals and risk management plan approvals in individual European countries, in order to begin marketing intravenous Remodulin in those countries;

The expected likelihood and timing of regulatory submissions and approvals for drug candidates under development and the timing of related sales, including our anticipated application for approval of Remodulin in Japan, our pending application for approval of Remodulin in China, and our expected filing of a biologics license application with the FDA and a marketing authorization application with the European Medicines Agency (EMA) for Ch14.18;





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Our expectation that we will enter into a new contract with Baxter Pharmaceutical Solutions, LLC (Baxter), relating to the production of Remodulin, by the end of 2013 when the current contract term expires;

The outcome of potential future regulatory actions, including audits and inspections, from the FDA and international regulatory agencies;

The impact of competing therapies, including generic products and newly-developed therapies, on sales of our commercial products;

The expectation that we will be able to produce sufficient quantities and maintain adequate inventories of our commercial products, through both our in-house production capabilities and third-party production sites for our products, and our ability to obtain and maintain related approvals by the FDA and other regulatory agencies;

The adequacy of our intellectual property protections and the expiration dates of the patents we own and our licensed patents and products;

Our expectations regarding our ability to defend our intellectual property relating to Remodulin against generic challenges, including the abbreviated new drug application filed by Sandoz Inc. (Sandoz);

The potential impact of the Patient Protection and Affordable Care Act and the Health Care and Education Reconciliation Act of 2010 on our business;

The impact of the business combination between Express Scripts, Inc. (the parent company of CuraScript, Inc.) and Medco Health Solutions, Inc. (the parent company of Accredo Health Group, Inc.) on our business;

Any statements that include the words "believe," "seek," "expect," "anticipate," "forecast," "project," "intend," "estimate," "should," "could," "may," "will," "plan," or similar expressions; and

Other statements contained or incorporated by reference in this Annual Report on Form 10-K that are not historical facts.

The statements identified as forward-looking statements may appear in *Item 7 Management's Discussion and Analysis of Financial Condition and Results of Operations* or elsewhere in this Annual Report on Form 10-K. These statements are subject to risks and uncertainties and our actual results may differ materially from anticipated results. Factors that may cause such differences include, but are not limited to, those discussed below. We undertake no obligation to publicly update forward-looking statements, whether as a result of new information, future events or otherwise.

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**Risks Related to Our Business**

**We rely heavily on sales of Remodulin, Tyvaso and Adcirca to generate revenues and support our operations.**

Sales of Remodulin, Tyvaso and Adcirca comprise virtually all of our revenues. A wide variety of events, many of which are described in other risk factors below, could cause sales of these products to decline. For instance, if regulatory approvals for any of these products were withdrawn, we would be unable to sell the product and our business could be jeopardized. Any substantial change in the prescribing practices or dosing patterns of patients using Remodulin, Tyvaso or Adcirca due to combination therapies, side effects, adverse events, deaths or any other reasons, could decrease related revenues. For example, during the fourth quarter of 2012, generic sildenafil citrate became commercially available, which could result in a decrease in Adcirca's market share, or limit its growth potential. In addition, we rely on third parties to produce, market, distribute and sell Remodulin, Tyvaso and Adcirca. The inability of any one of these third parties to perform these functions satisfactorily could negatively affect our revenues. We are also increasingly internalizing elements of our production process for Remodulin and Tyvaso, and any failure to manage our internal production processes could result in an inability to meet demand. Because we are highly dependent on sales of Remodulin, Tyvaso and Adcirca, a reduction in sales of any one of these products could have a negative and material adverse impact on our operations.

**We have had periods in which we incurred losses and may not maintain profitability.**

We have experienced financial reporting periods in which we incurred net losses. While we believe we develop our annual cash-based operating budgets using reasonable assumptions and targets, unanticipated factors, including those outside of our control, could affect our profitability and cause uneven quarterly and/or annual operating results.

**If our products fail in clinical trials, we will be unable to obtain or maintain FDA and international regulatory approvals and will be unable to sell those products.**

To obtain regulatory approvals from the FDA and international regulatory agencies such as the EMA, we must conduct clinical trials demonstrating that our products are safe and effective. In the past, several of our product candidates failed or were discontinued at various stages in the development process. Moreover, we may need to amend ongoing trials or the FDA and international regulatory agencies may require us to perform additional trials beyond those we planned. Such occurrences could result in significant delays and additional costs, and related clinical trials may be unsuccessful. Approval of an NDA could be subject to delays if the FDA determines that it cannot review or approve the NDA as submitted. In such a case, the FDA would issue a refuse-to-file letter or a complete response letter outlining deficiencies in the submission, and the FDA may require substantial additional studies, testing or information in order to complete its review of the application. We may fail to address any of these deficiencies adequately and consequently would be unable to obtain FDA approval to market the product candidate.

In addition, we have commenced a new phase III clinical trial, FREEDOM-EV, which is a study of oral treprostinil in combination with other approved PAH therapies. One co-primary end point of the study is time to clinical worsening. Based on a complete response letter we received from the FDA regarding our NDA for oral treprostinil, it appears that the clinical worsening endpoint has become increasingly important to demonstrate efficacy in PAH patients to the FDA's standards. We have not previously conducted a study with a time to clinical worsening primary endpoint. Our inexperience with this type of trial design may impact our ability to achieve positive results. Failure to prove the efficacy of oral treprostinil in combination with other PAH therapies could hinder our ability to obtain FDA approval of oral treprostinil. In light of the complete response letter from the FDA, we may need to

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amend or replace the FREEDOM-EV study, or supplement it with additional studies which could further delay the approval of oral treprostinil.

The length of time that it takes for us to complete clinical trials and obtain regulatory approval for marketing varies by product, product use and country. Furthermore, we cannot predict with certainty the length of time it will take to complete necessary clinical trials or obtain regulatory approval of our future products.

Our clinical trials may be discontinued, delayed or disqualified for various reasons. These reasons include:

The drug is ineffective, or physicians believe that the drug is ineffective;

Patients do not enroll in our studies at the rate we expect;

Ongoing or new clinical trials conducted by drug companies in addition to our own clinical trials reduce the availability of patients for our trials;

Patients experience severe side effects during treatment;

Other investigational or approved therapies are viewed as more effective or convenient by physicians or patients;

Our clinical trial sites, contracted clinical trial administrators or clinical studies conducted entirely by third parties do not adhere to trial protocols and required quality controls under good clinical practice (GCP) under FDA regulations and similar regulations outside the United States;

Our trials do not comply with applicable regulations or guidelines;

We do not pass inspections by regulatory agencies;

Patients die during our trials because of an adverse event related to the trial drug, their disease is too advanced, or they experience other medical complications;

Drug supplies are unavailable or unsuitable for use in our studies;

The results of preclinical testing raise concerns regarding product safety or efficacy; and

The results of our clinical trials conducted in countries outside of the United States are not acceptable to the United States or other countries, and the results of our clinical trials conducted in the United States are not acceptable to regulators in other countries.

In addition, the FDA and its international counterparts have substantial discretion over the approval process for pharmaceutical products. As such, these regulatory agencies may not agree that we have demonstrated the requisite level of product safety and efficacy to grant approval.

**Our future growth depends, in part, on our plans to develop oral treprostinil. If we fail to secure FDA approval for oral treprostinil, our revenue growth prospects could be materially adversely affected.**

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In 2008, we reported that our FREEDOM-C phase III clinical trial of oral treprostinil in patients with pulmonary arterial hypertension (PAH) did not achieve statistical significance for its primary endpoint ( $p=0.072$ ). These results prompted us to amend the protocol for our FREEDOM-M phase III clinical trial of oral treprostinil and initiate an additional phase III clinical trial of oral treprostinil, FREEDOM-C<sup>2</sup>. In June 2011, we announced the completion of the FREEDOM-M trial, which achieved statistical significance for its primary endpoint ( $p=0.0125$ ). However, our FREEDOM-C<sup>2</sup> trial did not achieve statistical significance for its primary endpoint ( $p=0.089$ ), as we announced in August 2011. In October 2012, the FDA issued a complete response letter, declining to approve our NDA for oral treprostinil. Although we have resubmitted our NDA in response to the complete response letter,

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and the FDA has set a targeted response date of March 31, 2013, there can be no guarantee that the FDA will complete its review of our resubmission in a timely manner. Although we aim to obtain regulatory approval of oral treprostinil before the end of 2016, the FDA may not approve oral treprostinil on this timetable, or at all. For example, approval may be further delayed if the results of our FREEDOM-EV phase III clinical trial or other clinical studies are required for approval. Future studies of oral treprostinil may ultimately fail to support FDA approval for oral treprostinil, for the reasons described above under the risk factor entitled "*If our products fail in clinical trials, we will be unable to obtain or maintain FDA and international regulatory approvals and will be unable to sell those products*", among others, which would have a significant impact on our future revenue growth.

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

We compete with well-established drug companies for, among other things, funding, licenses, expertise, personnel, clinical trial patients and investigators, consultants and third-party collaborators. We also compete with these companies for market share. Most of these competitors have substantially greater financial, marketing, manufacturing, sales, distribution and technical resources than we do. These competitors also possess more experience in areas such as research and development, clinical trials, sales and marketing and regulatory matters. There are several treatments that compete with our commercial therapies, as well as several other therapies under development, including various late-stage investigational products that have recently completed or are undergoing phase III pivotal trials. For the treatment of PAH, we compete with a number of approved products in the United States and worldwide, including the following: Flolan®, Ventavis®, Ilomedin®, Tracleer®, Revatio®, Letairis®, Veletri®, generic epoprostenol and generic sildenafil citrate. Patients and doctors may perceive these competing products, or products developed in the future, as safer, more effective, more convenient and/or less expensive than our therapies. Alternatively, doctors may reduce the prescribed doses of our products if they prescribe them in combination with our competitors' products. In addition, certain competing products are less invasive than Remodulin and the use of these products may delay or prevent initiation of Remodulin therapy. Any of these circumstances may suppress our sales growth or cause our revenues to decline.

Certain of our competitors, such as Actelion Ltd. and Gilead Sciences, Inc., have achieved considerable market penetration and dominance in the PAH therapeutic area. Furthermore, the future commercialization and introduction of new PAH therapies and generic versions of our competitors' products may saturate the market which could exert downward pressure on the pricing of our products and/or reduce our market share.

**Discoveries or development of new products or technologies by others may make our products obsolete or seemingly inferior.**

Other companies may discover or introduce new products that render all or some of our technologies and products obsolete or noncompetitive. Our commercial therapies may have to compete with numerous investigational products currently in development, including several investigational PAH therapies for which phase III pivotal trials are underway or have been recently completed. In addition, alternative approaches to treating chronic diseases, such as gene therapy or cell therapy, may make our products obsolete or noncompetitive. If introduced into the market, investigational therapies for PAH could be used in combination with, or as a substitute for, our therapies. If this occurs, doctors may reduce or discontinue the use of our products for their patients.

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**Sales of our products are subject to reimbursement from government agencies and other third parties. Pharmaceutical pricing and reimbursement pressures may negatively impact our sales.**

The commercial success of our products depends, in part, on the availability of reimbursements by governmental payers such as Medicare and Medicaid, and private insurance companies. Accordingly, our commercial success is tied to such third-party payers. In the United States, the European Union and other significant or potentially significant markets for our products, government payers and/or third-party payers are increasingly attempting to limit or regulate the price of medicinal products and are frequently challenging the pricing of new and expensive drugs. Our prostacyclin analogue products (Remodulin and Tyvaso) are expensive therapies. Consequently, it may be difficult for our specialty pharmaceutical distributors or wholesalers to obtain adequate reimbursement for our products from third-party payers to yield sufficient profit to motivate such distributors or wholesalers to support our products. Alternatively, third-party payers may reduce the amount of reimbursement for our products based on changes in pricing of other therapies for PAH. If third-party payers do not approve our products for reimbursement, or limit reimbursements, patients could choose competing products that are approved for reimbursement or provide lower out-of-pocket costs. Presently, most third-party payers, including Medicare and Medicaid, provide reimbursement for our commercial products. Future reimbursements under Medicare and Medicaid could be subject to reduction. Furthermore, to the extent that private insurers or managed care programs follow any reduced Medicaid and Medicare coverage and payment developments, the negative impact on our business would be compounded. We continue to assess the potential effect of the Patient Protection and Affordable Care Act and the related Health Care and Education Reconciliation Act of 2010 (the Acts) on our business. While our business has not been impacted materially thus far as a result of the Acts, we continue to monitor the developments of this legislation as many of its provisions are not yet effective and still subject to finalization.

In the United States, there is an increased focus from the federal government and others on analyzing the impact of various regulatory programs on the federal deficit, which could result in increased pressure on federal programs to reduce costs. In addition, financial pressures may cause government or other third-party payers to seek cost containment more aggressively through mandatory discounts or rebates on our products, policies requiring the automatic substitution of generic products, higher hurdles for initial reimbursement approvals for new products or other similar measures. For example, there have been recent proposals to reduce reimbursement rates and/or adopt mandatory rebates under Medicare Part B, which covers Remodulin and Tyvaso. A reduction in the availability or extent of reimbursement from government health care programs could have a material adverse effect on sales of our products, our business and results of our operations.

In Europe, the success of our commercial products and future products depends largely on obtaining and maintaining government reimbursement. In many European countries, patients are unlikely to use prescription drugs that are not reimbursed by their governments. Countries in Europe are under increasing pressure to reduce the cost of health care. Changes to current reimbursement policies may adversely affect our ability to sell our products or sell our products on a profitable basis. In many markets outside the United States, governments control the prices of prescription pharmaceuticals through the implementation of reference pricing, price cuts, rebates, revenue-related taxes and profit control. Furthermore, international governments expect prices of prescription pharmaceuticals to decline over the life of the product or as prescription volumes increase. In addition, in December 2011, we received marketing approval for the intravenous use of Remodulin in most of the countries that are members of the European Economic Area (EEA); however, we are in the process of obtaining approval of our risk management plan on a country-by-country basis, and we must obtain pricing approval in each of these member countries before we can market Remodulin for intravenous use. Delays in obtaining these approvals could have a significant impact on our future revenue growth. Additionally, in granting pricing approval for the intravenous use of Remodulin, a

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member country may approve a lower reimbursement price for intravenous Remodulin than for subcutaneous Remodulin, or reduce the reimbursement price for both methods of administering Remodulin. Any regulatory action requiring additional information or a reduction in the reimbursement rates for intravenous and subcutaneous Remodulin could have a material adverse effect on our revenues, results of operations and our business.

Finally, the ultimate pricing and reimbursement of our investigational products, upon their approval, is inherently uncertain and subject to the risks discussed above.

**Our production strategy exposes us to significant risks.**

We must be able to produce sufficient quantities of our commercial products to satisfy increases in demand for our products. The process of producing our products is difficult and complex, and currently involves a number of third parties. We synthesize treprostinil, the active ingredient in Remodulin and Tyvaso, and treprostinil diolamine, the active ingredient in oral treprostinil, in our Silver Spring, Maryland facility using raw materials and advanced intermediate compounds supplied by vendors. Although we formulate Remodulin and Tyvaso at our own facilities, we also outsource the formulation of Remodulin to Baxter and Jubilant Hollister-Stier Contract Manufacturing and Services (Jubilant Hollister-Stier) and we outsource the formulation of Tyvaso to Catalent Pharma Solutions, Inc. (Catalent). We manufacture the Tyvaso Inhalation System at our facility in Germany and also through Minnetronix, Inc.

As long as we utilize third-party vendors for significant portions of our production process, we will remain exposed to the risks described below under the risk factor entitled "*We rely in part on third parties to perform activities that are critical to our business. Our ability to generate commercial sales or conduct clinical trials could suffer if our third-party suppliers and service providers fail to perform.*" In addition, while we are in the process of internalizing additional processes to increase our control of production, this approach will also subject us to risks as we engage in increasingly complex production processes. For example, Remodulin and Tyvaso must be formulated in a sterile environment and we have limited experience with sterile manufacturing on a commercial scale. Some of the products we are developing will involve even more complicated production processes than our current products. For example, we are developing Ch14.18 MAb, a monoclonal antibody. As with all biologic products, monoclonal antibodies are inherently more difficult to produce than our current products and involve increased risk of viral and other contaminants.

In 2011, the FDA issued an advisory to manufacturers regarding the potential formation of glass fragments in injectable drugs filled in small-volume glass vials. We conducted a review of our manufacturing processes and those of our third-party suppliers and have no conclusive evidence at this time to suggest that the glass vials we use for Remodulin form glass fragments. We continue to assess our products, but cannot guarantee that our production process will not result in hazards such as these.

Additional risks presented by our production strategy include:

We and our third-party producers are subject to the FDA's current Good Manufacturing Practices in the United States and similar regulatory standards internationally. While we have significant control over regulatory compliance with respect to our internal production processes, we do not exercise the same level of control over regulatory compliance by our third-party producers;

As we expand our production operations to include new elements of the production process or new products, we may experience difficulty designing and implementing processes and procedures to ensure compliance with applicable regulations;



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Even if we and our third-party producers are in compliance with domestic and international drug production regulations, the sterility and quality of the products being produced could be substandard and, therefore, such products would be unavailable for sale or use;

If we had to replace our own production operations or a third-party producer, the FDA and its international counterparts would require new testing and compliance inspections. Furthermore, a new producer would have to be familiarized with the processes necessary to produce and commercially validate our products, as producing our treprostinil-based products is complex. Any new third-party producer and any new production process at our own facilities would be subject to approval by the FDA and its international counterparts before being used to produce commercial supply of our products;

We may be unable to contract with needed producers on satisfactory terms or at all; and

The supply of materials and components necessary to produce and package our products may become scarce or interrupted. Disruptions to the supply of these materials could delay the production and subsequent sale of such products. Any products produced with substituted materials or components would be subject to approval from the FDA and international regulatory agencies before they could be sold. The timing of any such regulatory approval is difficult to predict.

Any of these factors could disrupt sales of our commercial products, delay clinical trials or commercialization of new products, result in product liability claims and product recalls, and entail higher costs.

**We rely in part on third parties to perform activities that are critical to our business. Our ability to generate commercial sales or conduct clinical trials could suffer if our third-party suppliers and service providers fail to perform.**

We involve third parties extensively to assist us in: (1) conducting clinical trials, (2) obtaining regulatory approvals, (3) conducting pharmacovigilance-related activities, including drug safety and reporting of adverse events, and (4) marketing and distributing our products. The involvement of third parties is necessary because we do not possess the internal capacity, and in certain cases the expertise, to perform all of these functions. Accordingly, the success of these third parties in performing their contractual obligations is critical to our operations.

We synthesize treprostinil using raw materials and advanced intermediate compounds supplied by vendors. The inability of our vendors to supply these raw materials and advanced intermediate compounds in the quantities we require could delay the production of treprostinil for commercial use and for use in our clinical trials.

We rely on Baxter and Jubilant Hollister-Stier to formulate Remodulin for us. As part of an existing contract with Baxter, we agreed that Baxter will formulate Remodulin in greater quantities using larger production equipment than under its current process. This new formulation process and related equipment will require FDA and international approvals. During the fourth quarter of 2012, we notified Baxter that we will not renew our current contract when it expires at the end of 2013. We believe that we will be able to negotiate a new contract with Baxter prior to the expiration of the current contract. There can be no assurance, however, that these negotiations will be successful. Although we have received FDA and international approvals to produce Remodulin using our Silver Spring, Maryland facility, we remain reliant on third parties such as Baxter and Jubilant Hollister-Stier for additional capacity and production for international sales.

We received FDA approval to formulate Tyvaso in our Silver Spring, Maryland facility; however, we remain reliant on Catalent to supplement our production capacity and serve as a backup producer.

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We also rely substantially on NEBU-TEC and Minnetronix, Inc. to manufacture the nebulizer used in the Tyvaso Inhalation System.

We substantially rely on these third parties to adhere to and maintain production processes in accordance with all applicable regulatory requirements. If any of these critical third-party production and supply arrangements are interrupted for compliance issues or other reasons, we may not have sufficient inventory to meet future demand.

We rely on Accredo Health Group, Inc. (Accredo), CuraScript, Inc. (CuraScript) and CVS Caremark (Caremark) to distribute and sell Remodulin and Tyvaso in the United States. These distributors are also partially responsible for negotiating reimbursements from third-party payers for the cost of our therapies. From time-to-time, we increase the price of products sold to our U.S.-based and international distributors. Our price increases may not be fully reimbursed by third-party payers. If our distributors do not achieve acceptable profit margins on our products, they may reduce or discontinue the sale of our products. Furthermore, if our international distributors devote fewer resources to selling our products or are unsuccessful in their sales efforts, our revenues may decline materially.

In April 2012, Express Scripts, Inc. (the parent company of CuraScript) acquired Medco Health Solutions, Inc. (the parent company of Accredo). As a result of the merger, our products may be less significant to the overall operations of the combined company and the merged company may devote fewer resources toward the sale and support of our products, which could adversely impact our revenues. In addition, the combined company's pharmacy benefit management business may have increased leverage in negotiating the terms of rebates and discounts on behalf of third-party payers, which could impact reimbursement levels for our products.

We rely on Eli Lilly and Company (Lilly) to manufacture and supply Adcirca for us, and we use Lilly's pharmaceutical wholesaler network to distribute Adcirca in the United States and Puerto Rico. If Lilly is unable to manufacture or supply Adcirca or its distribution network is disrupted, it could delay, disrupt or prevent us from selling Adcirca, which could slow the growth of our business. In addition, Lilly has the right to determine the wholesale price of Adcirca, which generally moves in parity with the wholesale price Lilly sets for Cialis® (both of these products contain the same active ingredient). Since FDA approval of Adcirca, Lilly has generally announced price increases on both Cialis and Adcirca twice per year. Changes in Lilly's wholesale prices could adversely impact demand or reimbursement for Adcirca, particularly in light of the commercial availability of generic sildenafil citrate, the active ingredient in Revatio.

Although most of our current suppliers and service providers could eventually be replaced, a change in suppliers and/or service providers could interrupt the manufacture and distribution of our commercial products and our other products and services, and impede the progress of our clinical trials, commercial launch plans and related revenues. Interruptions in our production process could be significant given the length of time and complexity involved in obtaining necessary regulatory approvals for alternative arrangements, through either third parties or internal manufacturing processes.

We rely heavily on third-parties to conduct our clinical trials. In addition, the success of certain products we are developing will depend on clinical trials sponsored by third parties. Examples of such clinical trials include a phase III study of Ch14.18 conducted by the National Cancer Institute, and an ongoing study conducted by Medtronic using its implantable pump to deliver intravenous Remodulin. Failure by any of these parties to conduct or assist us in conducting clinical trials in accordance with study protocols, quality controls and GCP could limit our ability to rely on results of those trials in seeking regulatory approvals.

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**Our operations must comply with extensive laws and regulations in the United States and other countries, including FDA regulations. Failure to obtain approvals on a timely basis or to achieve continued compliance could delay, disrupt or prevent the commercialization of our products.**

The products we develop must be approved for marketing and sale by regulatory agencies and, once approved, are subject to extensive regulation. Our research and development efforts must comply with extensive regulations, including those promulgated by the FDA and the United States Department of Agriculture. The process of obtaining and maintaining regulatory approvals for new drugs is lengthy, expensive and uncertain. The manufacture, distribution, advertising and marketing of these products are also subject to extensive regulation, including strict pharmacovigilance and adverse event reporting requirements. Any future product approvals we receive could be accompanied by significant restrictions on the use or marketing of a given product. Furthermore, our product candidates may fail to receive marketing approval on a timely basis, or at all. If granted, product approvals can be withdrawn for failure to comply with regulatory requirements, such as post-marketing requirements and post-marketing commitments, or upon the occurrence of adverse events subsequent to commercial introduction.

Discovery of previously unknown problems with our marketed products or problems with our manufacturing, regulatory, compliance, research and development, pharmacovigilance and adverse event reporting, marketing or sales activities could result in regulatory restrictions on our products up to and including withdrawal of our products from the market. If we fail to comply with applicable regulatory requirements, we could be subject to penalties that may consist of fines, suspension of regulatory approvals, product recalls, seizure of our products and/or criminal prosecution. In addition, our reputation could be harmed as a result of any such regulatory restrictions or actions, and patients and physicians may avoid the use of our products even after we have resolved the issues that led to such regulatory action.

**We are subject to ongoing regulatory review of our currently marketed products.**

After our products receive regulatory approval, they remain subject to ongoing regulation, which can impact, among other things, product labeling, manufacturing practices, pharmacovigilance and adverse event reporting, storage, distribution, advertising and promotion, and record keeping. If we do not comply with applicable regulations, the range of possible sanctions may include: (1) adverse publicity, (2) product recalls or seizures, (3) fines, (4) total or partial suspensions of production and/or distribution, (5) suspension of marketing applications, and (6) enforcement actions, including injunctions and civil or criminal prosecution. Further, the FDA often requires post-marketing testing and surveillance to monitor the effects of approved products. The FDA and comparable international regulatory agencies may condition approval of our product candidates on the completion of such post-marketing clinical studies. These post-marketing studies may suggest that a product causes undesirable side effects or may present a risk to the patient. If data we collect from post-marketing studies suggest that one of our approved products may present an unacceptable safety risk, regulatory authorities could withdraw the product's approval, suspend production or place other marketing restrictions on that product. If regulatory sanctions are applied or if regulatory approval is delayed or withdrawn, our operating results and the value of our company may be adversely affected.

**Regulatory approval for our currently marketed products is limited by the FDA to those specific indications and conditions for which clinical safety and efficacy have been demonstrated.**

Any regulatory approval of our products is limited to specific diseases and indications for which our products have been deemed safe and effective by the FDA. In addition to the FDA approval required for new formulations, any new indication for an approved product also requires FDA approval. If we are not able to obtain FDA approval for any desired future indications for our products, our ability to effectively market and sell our products may be reduced.

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While physicians may choose to prescribe drugs for uses that are not described in the product's labeling and for uses that differ from those approved by regulatory authorities (called "off-label" uses), our ability to promote the products is limited to those indications that are specifically approved by the FDA. Although U.S. regulatory authorities generally do not regulate the behavior of physicians, they do restrict communications by companies on the subject of off-label use. If our promotional activities fail to comply with these regulations or guidelines, we may be subject to warnings from, or enforcement action by, these authorities. In addition, failure to follow FDA rules and guidelines relating to promotion and advertising can result in the FDA's refusal to approve a product, suspension or withdrawal of an approved product from the market, product recalls, fines, disgorgement of money, operating restrictions, injunctions or criminal prosecution.

**We must comply with various laws in jurisdictions around the world that restrict certain marketing practices in the pharmaceutical and medical device industries. Failure to comply with such laws could result in penalties and have a material adverse effect on our business, financial condition and results of operations.**

Various laws in jurisdictions around the world, including anti-kickback and false claims statutes, the Foreign Corrupt Practices Act and the UK Bribery Act, restrict particular marketing practices in the pharmaceutical and medical device industries. Our business activities may be subject to challenge under these laws, and any penalties imposed upon us could have a material adverse effect on our business, financial condition and results of operations. Furthermore, we have significantly expanded our sales and marketing staff. Any expansion of sales and marketing efforts can increase the risks of noncompliance with these laws.

In the United States, the federal health care program anti-kickback statute prohibits, among other things, knowingly and willfully offering, paying, soliciting, or receiving remuneration to induce (or in return for) the purchase, lease, order or arranging the purchase, lease or order of any health care product or service reimbursable under Medicare, Medicaid or any other federally financed health care program. This statute has been interpreted to apply to arrangements between pharmaceutical manufacturers and prescribers, purchasers, and formulary managers. Although a number of statutory exemptions and regulatory safe harbors exist to protect certain common activities from prosecution, the exemptions and safe harbors are narrow, and practices that involve remuneration intended to induce prescriptions, purchases, or recommendations may be subject to scrutiny if they do not qualify for an exemption or safe harbor. Our practices may not always meet all of the criteria for safe harbor protection.

Federal false claims laws prohibit any person from knowingly presenting (or causing the presenting of) a false claim for payment by the federal government, or knowingly making, or causing a false statement to be made in order to receive payment of a false claim. Several pharmaceutical and health care companies have been prosecuted under these laws for allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product. Other companies have been prosecuted for causing false claims to be submitted because of the company's marketing of the product for unapproved, and thus non-reimbursable, uses. The majority of states also have statutes or regulations similar to the federal anti-kickback law and false claims laws, which apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payer. Sanctions under these federal and state laws may include civil monetary penalties, exclusion of a manufacturer's product from reimbursement under government programs, criminal fines, and imprisonment.

The Patient Protection and Affordable Care Act (PPACA) imposes new reporting requirements for pharmaceutical and device manufacturers with regard to payments or other transfers of value made to physicians and teaching hospitals, effective March 31, 2013. In addition, pharmaceutical and device manufacturers will be required to report and disclose investment interests held by physicians and their

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immediate family members during the preceding calendar year. Such information is to be made publicly available by the Secretary of Health and Human Services in a searchable format beginning September 30, 2013.

Failure to submit required information may result in civil monetary penalties of up to \$150,000 per year (and up to \$1.0 million per year for "knowing failures") for all payments, transfers of value or ownership or investment interests not reported in an annual submission. Further, the PPACA amends the intent requirement of the federal anti-kickback and criminal health care fraud statutes. A person or entity no longer needs to have actual knowledge of this statute or specific intent to be in violation of it. In addition, the government may assert that a claim including items or services resulting from a violation of the federal anti-kickback statute constitutes a false or fraudulent claim for purposes of the false claims laws.

If not preempted by this federal law, several states currently require pharmaceutical companies to report expenses relating to the marketing and promotion of pharmaceutical products and to report gifts and payments to individual physicians in those states. Depending on the state, legislation may prohibit various other marketing related activities, or require the posting of information relating to clinical studies and their outcomes. In addition, certain states, such as California, Nevada, and Massachusetts, require pharmaceutical companies to implement compliance programs or marketing codes and several other states are considering similar proposals. Compliance with these laws is difficult and time consuming, and companies that do not comply with these state laws will face civil penalties.

**Government health care reform could increase our costs, which would adversely affect our revenue and results of operations.**

Our industry is highly regulated and changes in law may adversely impact our business, operations or financial results. The PPACA is a sweeping measure intended to expand health care coverage within the United States, primarily through the imposition of health insurance mandates on employers and individuals and expansion of the Medicaid program. The reforms imposed by the new law will significantly impact the pharmaceutical industry; however, the full effects of the PPACA will be unknown until these provisions are implemented and the Centers for Medicare and Medicaid Services and other federal and state agencies issue applicable regulations or guidance. Moreover, in the coming years, additional changes could be made to governmental health care programs that could significantly impact the success of our products or product candidates.

**Reports of actual or perceived side effects and adverse events associated with our products, such as sepsis, could cause physicians and patients to avoid or discontinue use of our products in favor of alternative treatments.**

Reports of side effects and adverse events associated with our products could have a significant adverse impact on the sale of our products. An example of a known risk associated with intravenous Remodulin is sepsis, which is a serious and potentially life-threatening infection of the bloodstream caused by a wide variety of bacteria. Intravenous prostacyclins, such as intravenous Remodulin and Flolan, are infused continuously through a catheter placed in a large vein in the patient's chest, and sepsis is a known risk associated with this type of delivery. As a result, sepsis is included as a risk in both the Remodulin and Flolan package inserts. Although a discussion of the risk of sepsis is currently included on 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 decision to prescribe Remodulin.

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**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, which are constantly evolving. These regulations are subject to frequent revisions that often introduce more stringent requirements. If we fail to comply with any of these regulations, we could be subject to a range of penalties including, but not limited to: (1) the termination of clinical trials, (2) the failure to receive approval of a product candidate, (3) restrictions on our products or manufacturing processes, (4) withdrawal of our products from the market, (5) significant fines, (6) exclusion from government health care programs and (7) other sanctions or litigation.

**Negative attention from special interest groups may impair our business.**

As is common with pharmaceutical and biotechnology companies, our early-stage research and development involves animal testing, which we conduct both directly and through contracts with third parties. Notwithstanding the vital role of animal research in the drug discovery and development process, certain special interest groups categorically object to the use of animals for research purposes. Historically, our research and development activities have not been the subject of significant animal rights media attention. However, research activities with animals have been the subject of adverse attention, generally including demonstrations near facilities operated by other companies in our industry. Any negative attention, threats or acts of vandalism directed against our animal research activities in the future could impair our ability to operate our business effectively.

**If any of the license or other agreements under which intellectual property rights are licensed to, or were acquired by us are breached or terminated, our right to continue to develop, produce and sell the products covered by such agreement could be impaired or lost.**

Our business depends upon our continuing ability to exploit our intellectual property rights in the drugs and other products that have been discovered and initially developed by others and those for which we are developing further and commercializing. These intellectual property rights have either been contractually licensed to us or have been acquired by us. Under each of our product license agreements, we are granted a license to exploit certain intellectual property owned by others that covers a drug or other product. Under each of our purchase agreements, we have purchased certain intellectual property that covers a drug or other product. We may be required to obtain a license of other intellectual property owned by third parties to continue to develop and commercialize our products.

This dependence on intellectual property developed by others involves the following risks:

We may be unable to obtain rights to intellectual property that we determine we need for our business at a reasonable cost or at all;

If any of our product licenses or purchase agreements are terminated, we may lose our rights to develop, make and sell the products to which such licenses or agreements relate;

Our license and purchase agreements generally provide the licensor or seller with the right to terminate the agreement in the event we breach such agreement *e.g.*, if we fail to pay royalties and other fees timely and do not cure the failure within a stated time period; and

If a licensor of intellectual property that is exclusively licensed to us breaches its obligation or otherwise fails to maintain the intellectual property licensed to us, we may lose any ability to prevent others from developing or marketing similar products that are covered by such intellectual property. In addition, we may be forced to incur substantial costs to maintain the intellectual property ourselves or take legal action seeking to force the licensor to do so.

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**Certain agreements under which we acquired or licensed intellectual property rights may restrict our ability to develop related products in certain countries or for particular diseases and may impose other restrictions that affect our ability to develop and market related products in the most effective manner.**

When we acquire or license intellectual property rights to drugs and other products that have been discovered and initially developed by others, these rights are frequently limited. For instance, our rights to market Adcirca are geographically limited to the United States and Puerto Rico. Furthermore, we cannot undertake any additional investigational work with respect to Adcirca in other indications of pulmonary hypertension without Lilly's prior approval. Lilly also has authority over all regulatory activities and has the right to determine the net wholesale price for Adcirca. Provisions in our license and purchase agreements may impose other restrictions that affect our ability to develop and market products to which the intellectual property relates. For example, GlaxoSmithKline PLC retained an exclusive option and right of first refusal to negotiate an agreement with us if we decide to license any commercialization rights with respect to Remodulin and Tyvaso anywhere in the world.

**Our intellectual property rights may not effectively deter competitors from developing competing products that, if successful, could materially adversely affect our revenues and profits.**

The period under which our commercial and developmental therapies are protected by our patent rights is limited. Our U.S. patent for the method of treating PAH with Remodulin will expire in October 2014. Three of our U.S. patents covering our current methods of synthesizing and producing treprostinil, the active ingredient in both Remodulin and Tyvaso, expire in October 2017. Other patents and patent applications in the U.S. and other countries relating to our treprostinil products remain in force or are pending, respectively. We also have been granted one patent in the European Union and one patent in Japan, each of which covers our treprostinil synthesis and production methods that will expire in October 2018. Our U.S. patent covering an improved diluent for Remodulin will expire in March 2029. The patent for Adcirca for the treatment of pulmonary hypertension will expire in 2017 and our patents for Tyvaso will expire in the United States and in various countries throughout the European Union in 2018 and 2020, respectively.

We continue to conduct research into new methods to synthesize treprostinil and have pending U.S. and international patent applications and granted patents relating to such methods. However, we cannot be sure that these additional patents will successfully deter competitors, or that additional patent applications will result in grants of patents. Upon the expiration of any of our patents, competitors may develop generic versions of our products that were covered by the expired patents and may market those generic versions to compete with our products. Competitors may also seek to design around our patents prior to their expiration in an effort to develop competing products that do not infringe our patents.

The scope of any patent we hold may not deter competitors from developing a product that competes with the product we sell that is covered by the patent. Patent laws of foreign jurisdictions may not protect our patent rights to the same extent as the patent laws of the United States. Furthermore, our suppliers who have granted us exclusive rights may have inadequate intellectual property protections. Competitors also may attempt to invalidate our existing patents before they expire.

In addition to patent protection, we also rely on trade secrets to protect our proprietary know-how and other technological advances that we do not disclose to the public. We enter into confidentiality agreements with our employees and others to whom we disclose trade secrets and other confidential information. These agreements do not necessarily prevent our trade secrets from being used or disclosed without our authorization and confidentiality agreements may be difficult to enforce or may not provide an adequate remedy in the event of unauthorized disclosure.

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**The validity, enforceability and scope of certain of our patents covering Remodulin are currently being challenged as a result of a recent abbreviated new drug application (ANDA) filing from a generic drug company. The outcome of current or any future challenges to the validity, enforceability or scope of our patent portfolio could significantly reduce revenues from Remodulin.**

In February 2012, we received a Paragraph IV Certification Notice Letter (Original Notice Letter) from Sandoz advising that Sandoz has submitted an ANDA to the FDA requesting approval to market a generic version of the 10 mg/mL strength of Remodulin. In December 2012, we received notice (Second Notice Letter) that Sandoz had amended its previously filed ANDA to request approval to market generic versions of the 1 mg/mL, 2.5 mg/mL, and 5 mg/mL strengths of Remodulin. In the Notice Letters, Sandoz states that it intends to market a generic version of Remodulin before the expiration of U.S. Patent No. 5,153,222, which expires in October 2014; U.S. Patent No. 6,765,117, which expires in October 2017; and U.S. Patent No. 7,999,007, which expires in March 2029.

We responded to the Original Notice Letter by filing a lawsuit in March 2012 against Sandoz in the U.S. District Court for the District of New Jersey alleging patent infringement. We responded to the Second Notice Letter by filing an additional lawsuit in January 2013 for patent infringement in the U.S. District Court for the District of New Jersey. The current status of our litigation with Sandoz is further described in *Item 3. Legal Proceedings*, elsewhere in this Annual Report on Form 10-K.

There can be no assurance that we will prevail in our defense of our patent rights. Our existing patents could be invalidated, found unenforceable or found not to cover a generic form of Remodulin. If Sandoz or another ANDA filer were to receive approval to sell a generic version of Remodulin and/or prevail in any patent litigation, Remodulin would become subject to increased competition and our revenue would be adversely affected. In addition, regardless of the outcome, any patent litigation could be costly, distracting to our management and time-consuming.

**Third parties may allege that our products or services infringe their patents and other intellectual property rights, which could result in the payment of royalties. Payment of royalties would negatively affect our profits; furthermore, if we chose to contest these allegations, we could be subject to costly and time-consuming litigation or could lose the ability to continue to sell the related products.**

Third parties may seek to invalidate or otherwise challenge our patents. We may initiate litigation to enforce or defend our patents or intellectual property rights; however, litigation can be time consuming, distracting to our operations, costly and may not conclude favorably. In addition, the outcome of patent infringement litigation often is difficult to predict. If we are unsuccessful with respect to any future legal action in the defense of our patents and our patents are invalidated or determined to be unenforceable, our business could be negatively impacted. Even if our patents are not determined to be invalid or unenforceable, it is possible that a competitor could circumvent our patents by effectively designing around the claims of our patents. Accordingly, our patents may not provide us with any competitive advantage.

To the extent third-party patents for which we currently do not hold licenses cover our products or services, licenses to these patents would be necessary to manufacture, use, sell or provide these products and services without infringing these patents. In the case of products or services that utilize intellectual property of strategic collaborators or other suppliers, such suppliers may have an obligation to secure the needed license to these patents at their cost. Otherwise, we would be responsible for the cost of these licenses. Payments of royalties and other amounts under these licenses would reduce our profits from the sale of related products and services. Moreover, 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 the product alleged to be infringed to avoid infringing a third-party patent, we would be unable to continue to manufacture or sell the related products.

If a third party commences legal action against us for infringement, we could be compelled to incur significant costs to defend the action and our management's attention could be diverted, whether



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or not the action were to have any merit. We cannot be certain that we could prevail in the action, and an adverse judgment or settlement resulting from the action could require us to pay substantial amounts in damages for infringement or substantial amounts to obtain a license to continue to use the intellectual property that is the subject of the infringement claim.

**We may not maintain adequate insurance coverage to protect us against significant product liability claims.**

The testing, manufacturing, marketing, and sale of drugs and diagnostics involve product liability risks. We may not be able to maintain our current product liability insurance at an acceptable cost, if at all. In addition, our insurance coverage may not be adequate for all potential claims. If claims or losses significantly exceed our liability insurance coverage, we may experience financial hardship or be forced out of business.

**If we fail to attract and retain key management and qualified scientific and technical personnel, we may not be able to achieve our business objectives.**

Members of our management team, including our founder, Chairman and Chief Executive Officer, Dr. Martine Rothblatt, and our President and Chief Operating Officer, Dr. Roger Jeffs, play a critical role in defining our business strategy and maintaining our corporate culture. The loss of the services and leadership of Dr. Rothblatt, Dr. Jeffs or any other members of our senior management team could have an adverse effect on our business. We do not maintain key person life insurance on our senior management team members. In addition, effective succession planning is important to our long-term success. Failure to identify and retain adequate replacements for members of our senior management team and ensure effective transfer of knowledge could hinder the achievement of our business objectives. Our future success also depends on our ability to attract and retain qualified scientific and technical personnel. Competition for skilled scientific and technical personnel in the biotechnology and pharmaceutical industries is intense. Our compensation arrangements may not be sufficient to attract new qualified scientific and technical employees or retain existing scientific and technical employees. If we fail to attract and retain such employees, we may not be successful in developing and commercializing new therapies for PAH and other diseases and conditions.

**Improper handling of hazardous materials used in our activities could expose us to significant remediation liabilities.**

Our research and development and manufacturing activities involve the controlled use of chemicals and hazardous substances and we are expanding these activities in both scale and location. In addition, patients may dispose of our products using means we do not control. Such activities subject us to numerous federal, state, and local environmental and safety laws and regulations that govern the management, storage and disposal of hazardous materials. Compliance with current and future environmental laws and regulations can require significant costs; furthermore, we can be subject to substantial fines and penalties in the event of noncompliance. The risk of accidental contamination or injury from these materials cannot be completely eliminated. Furthermore, once chemical and hazardous materials leave our facilities, 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 material adverse effect on our business.

**We may encounter substantial difficulties managing our growth relative to product demand.**

We have spent considerable resources building and expanding our offices, laboratories and production facilities, and we are currently seeking regulatory approvals for some of our facilities. However, our facilities may be insufficient to meet future demand for our products. Alternatively, we

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may have excess capacity at our facilities if future demand falls short of our expectations, or if we do not receive regulatory approvals for the products we intend to produce at our facilities. Constructing our facilities is expensive and our ability to satisfactorily recover our investment will depend on sales of the products manufactured at these facilities in sufficient volume. If we do experience substantial sales growth, we may have difficulty managing inventory levels as marketing new therapies is complicated and gauging future demand can be difficult and uncertain.

**If we need additional financing and cannot obtain it, our product development and sales efforts may be limited.**

We may be required to seek additional sources of financing to meet unplanned or planned expenditures. Unplanned expenditures could be significant and may result from necessary modifications to product development plans or product offerings in response to difficulties encountered with clinical trials. We may also face unexpected costs in preparing products for commercial sale, or in maintaining sales levels of our currently marketed therapeutic products. If we are unable to obtain additional funding on commercially reasonable terms or at all, we may be compelled to delay clinical studies, curtail operations or obtain funds through collaborative arrangements that may require us to relinquish rights to certain products or potential markets.

We may require additional financing to meet significant future obligations. For example, upon maturity or conversion of our 1.0 percent Convertible Senior Notes due September 15, 2016 (2016 Convertible Notes), subject to certain provisions, we must repay our investors in cash up to the principal balance of \$250.0 million. Further, in certain circumstances constituting a fundamental change under the 2016 Convertible Notes, we may be required to repurchase the 2016 Convertible Notes for cash. In addition, awards granted under our Share Tracking Awards Plans (which we collectively refer to as the STAP) entitle participants to receive in cash an amount equal to the appreciation in the price of our common stock, which is calculated as the positive difference between the closing price of our common stock on the date of exercise and the date of grant. Consequently, our STAP will likely require significant future cash payments to participants to the extent the price of our common stock appreciates and the number of vested STAP awards increases over time. If we do not have sufficient funds to meet such contractual obligations or the ability to secure alternative sources of financing, we could be in default, face litigation and/or lose key employees, which could have a material adverse effect on our business or financial condition.

**Security breaches and other disruptions could compromise our information and expose us to liability, which would cause our business and reputation to suffer.**

In the ordinary course of our business, we collect and store sensitive data, including intellectual property, our proprietary business information and that of our suppliers, customers and business partners, and personally identifiable information. The secure maintenance of this information is critical to our operations and business strategy. Despite our security measures, our information technology and infrastructure may be vulnerable to attacks by hackers or breached due to employee error, malfeasance or other disruptions. Any such breach could compromise our networks and the information stored there could be accessed, publicly disclosed, lost or stolen. Any such access, disclosure or other loss of information could result in legal claims or proceedings, liability under laws that protect the privacy of personal information, disrupt our operations, and damage our reputation which could adversely affect our business.

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**Risks Related to Our Common Stock**

**The price of our common stock can be highly volatile and may decline.**

The price of common stock can be highly volatile within the pharmaceutical and biotechnology sector. Consequently, there can be significant price and volume fluctuations in the market that may not relate to operating performance. The following table sets forth the high and low closing prices of our common stock for the periods indicated:

		<b>High</b>	<b>Low</b>
January 1, 2012	December 31, 2012	\$ 58.91	\$ 40.42
January 1, 2011	December 31, 2011	\$ 70.70	\$ 37.21
January 1, 2010	December 31, 2010	\$ 64.24	\$ 46.22

The price of our common stock could decline sharply due to the following factors, among others:

Failure to meet estimates or expectations of securities analysts or our own revenue guidance;

Quarterly and annual financial results;

Timing of enrollment and results of our clinical trials;

Physician, patient, investor or public concerns regarding the efficacy and/or safety of products marketed or being developed by us or by others;

Changes in, or new legislation and regulations affecting reimbursement of, our therapeutic products by Medicare, Medicaid or other government payers, and changes in reimbursement policies of private health insurance companies;

Announcements by us or others of technological innovations or new products or announcements regarding our existing products, including in particular the development of new, competing PAH therapies;

Announcements by us or others regarding generic challenges to the intellectual property relating to our products, including the recent abbreviated new drug applications filed by Sandoz relating to certain of our Remodulin patents and to our pending lawsuit defending our patents rights;

Substantial sales of our common stock by us or our existing shareholders;

Future issuances of common stock by us or any other activity which could be viewed as being dilutive to our shareholders;

Rumors among, or incorrect statements by, investors and/or analysts concerning our company, our products, or operations;

Failure to obtain or maintain regulatory approvals from the FDA or international regulatory agencies;

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Discovery of previously unknown problems with our marketed products, or problems with our production, regulatory, compliance, promotional, marketing or sales activities that result in regulatory restrictions on our products, including withdrawal of our products from the market;

Accumulation of significant short positions in our common stock by hedge funds or other investors or the significant accumulation of our common stock by hedge funds or other institutional investors with investment strategies that may lead to short-term holdings; and

General market conditions.

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**We may fail to meet our own projected revenues, as well as third-party projections for our revenues or profits.**

Many securities analysts publish quarterly and annual projections of our revenues and profits. In addition, we provide forward-looking guidance for revenues associated with our commercial products. Such estimates are inherently subject to uncertainty. As a result, actual revenues and profits may differ from these projections, and even small variations in reported revenues and profits compared to securities analysts' expectations or our own projected revenues could have a significant impact on the price of our common stock.

**Sales or issuances of our common stock may depress our stock price.**

The price of our common stock could decline if: (1) we issue common stock to raise capital or to acquire a license or business; (2) our shareholders transfer ownership of our common stock, or sell substantial amounts in the public market (for example, in 2011, Lilly sold a significant portion of our common stock); (3) our investors become concerned that substantial sales of our common stock may occur; or (4) we issue shares upon the settlement of warrants relating to the hedging transaction for our 2016 Convertible Notes. A decrease in the price of our common stock could make it difficult for us to raise capital or fund acquisitions through the issuance of our stock.

Any sales of common stock issued to holders of our 2016 Convertible Notes could adversely affect the prevailing market price of our common stock or result in short selling by market participants in expectation of a decline in the price of our common stock.

**Our share repurchases may affect the value of our common stock.**

Recently, our Board of Directors authorized several programs to repurchase our common stock. The effect of any of these repurchase programs on the market price of our common stock will depend in part on market conditions.

**We are subject to counterparty risk with respect to the convertible note hedge transaction.**

The counterparty to the convertible note hedge transaction we entered into in connection with the issuance of our 2016 Convertible Notes (call options) will subject us to counterparty risk in that the counterparty may default on fulfilling potential obligations under the call options. Our exposure to the credit risk of the counterparty will not be secured by any collateral. Recent global economic conditions have resulted in the actual or perceived failure or financial difficulties of many financial institutions. If such counterparty becomes subject to insolvency proceedings, we will become an unsecured creditor in those proceedings with a claim based on our exposure at that time under the call options. Our exposure will depend on many factors but, generally, the increase in our exposure will be correlated to the increase in the market price and in the volatility of our common stock. In addition, upon a default by the counterparty, we may suffer adverse tax consequences and dilution with respect to our common stock due to our obligation to deliver shares upon conversion of the notes. We cannot provide any assurance as to the financial stability or viability of the counterparty to our convertible note hedge transaction.

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**Provisions of Delaware law and our amended and restated certificate of incorporation, second amended and restated by-laws, shareholder rights plan, 2016 Convertible Notes, convertible note hedge transaction and employment and license agreements, among other things, could prevent or delay a change of control or change in management that may be beneficial to our public shareholders.**

Certain provisions of Delaware law and our amended and restated certificate of incorporation, second amended and restated 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/or

The replacement or removal of current management by our shareholders.

For example, our amended and restated 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 difficult for shareholders to replace the majority of directors. It may also deter the accumulation of large blocks of our common stock by limiting the voting power of such blocks.

Non-competition and all other restrictive covenants in most of our employment agreements will terminate upon a change of control that is not approved by our Board.

We may be required to repurchase the 2016 Convertible Notes from their holders in the event of a fundamental change and increase the conversion rate in connection with a make whole adjustment event in certain circumstances, including a change of control of our company. This may delay or prevent a change in control of our company that would otherwise be beneficial to our shareholders.

Terminating or unwinding the convertible note hedge transaction could require us to make substantial payments to the counterparty or may increase the price of our common stock. The costs or any increase in stock price that may arise from terminating or unwinding the transaction could make an acquisition of our company significantly more expensive to the purchaser.

Similarly, a change of control, under certain circumstances, could also result in an acceleration of the vesting of outstanding STAP awards. This, together with any increase in our stock price resulting from the announcement of a change of control, could make an acquisition of our company significantly more expensive to the purchaser. We also have a broad-based change of control severance program, under which employees may be entitled to severance benefits in the event they are terminated without cause (or they terminate their employment for good reason) following a change of control. This program could also increase the cost of acquiring our company.

We enter into certain license agreements that generally prohibit our counterparties or their affiliates from taking necessary steps to acquire or merge with us, directly or indirectly throughout the term of these agreements, plus a specified period thereafter. We are also party to certain license agreements that restrict our ability to assign or transfer the rights licensed to us to third parties, including parties with whom we wish to merge, or those attempting to acquire us. These agreements often require that we obtain the prior consent of the counterparties to these agreements if we are contemplating a change of control. If these counterparties withhold their consent, related agreements could be terminated and we would lose related license rights. For example, both Lilly and Toray have the right to terminate our license agreements relating to Adcirca and beraprost, respectively, in the event of certain change of control transactions. These restrictive change of control provisions could impede or prevent mergers that could benefit our shareholders.

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**Because we do not intend to pay cash dividends, our shareholders must rely on stock appreciation for any return on their investment in us.**

We have never declared or paid cash dividends on our common stock. Furthermore, we do not intend to pay cash dividends in the future. As a result, the return on an investment in our common stock will depend entirely upon the future appreciation in the price of our common stock. There can be no assurances that our common stock will provide a return to investors.

**ITEM 1B. UNRESOLVED STAFF COMMENTS**

None.

**ITEM 2. PROPERTIES**

**Maryland** We own a 232,000 square foot combination laboratory and office building complex in Silver Spring, Maryland that serves as our corporate headquarters and is used for the synthesis of treprostinil-based compounds and monoclonal antibodies. We use this facility to produce Remodulin and Tyvaso for commercial use. We also own several other buildings in Silver Spring used principally for office space, and we lease and own warehouse space near Silver Spring.

**North Carolina** We own a 380,000 square foot combination manufacturing facility and office building in Research Triangle Park, North Carolina (RTP facility), which is occupied by our clinical research and development and commercialization personnel. We warehouse and distribute Remodulin and Tyvaso and manufacture oral treprostinil at this location. In June 2012, we acquired an 132 acre property containing approximately 703,000 square feet of building space adjacent to our RTP facility, which we intend to use for future expansion. We expect to begin preparing a portion of the property for development during the first half of 2013, which will house research, development and production facilities relating to our regenerative medicine and organ transplantation programs.

**Europe** We own an office building near London, England which serves as our European headquarters. We also own a building in Oxford, England. In Germany, we lease office and production space from NEBU-TEC for production of the Tyvaso Inhalation System.

**District of Columbia** We own two adjacent buildings in Washington, D.C., which serve as office space.

**Florida** We own an office building in Satellite Beach, Florida. In addition, we lease office space in Melbourne, Florida.

Certain of our Maryland and North Carolina properties serve as collateral under our \$70.0 million Credit Agreement with Wells Fargo Bank, National Association and Bank of America, N.A. For further details, see *Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations Liquidity and Capital Resources Mortgage Financing*.

We believe that these facilities, along with various other owned and leased office facilities, are adequate for our current operations and that additional land and facilities for future expansion are reasonably available.

**ITEM 3. LEGAL PROCEEDINGS**

*Sandoz Inc.*

In February 2012, we received a Paragraph IV Certification Notice Letter (the Original Notice Letter) from Sandoz Inc. (Sandoz) advising that Sandoz had submitted an abbreviated new drug application (ANDA) to the FDA requesting approval to market a generic version of the 10 mg/mL strength of Remodulin. In December 2012, we received notice (the Second Notice Letter) that Sandoz

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had amended its previously filed ANDA to request additional approval to market generic versions of the 1 mg/mL, 2.5 mg/mL, and 5 mg/mL strengths of Remodulin. In the Original Notice Letter and the Second Notice Letter, Sandoz stated that it intends to market a generic version of Remodulin before the expiration of the following patents relating to Remodulin: U.S. Patent No. 5,153,222, which expires in October 2014; U.S. Patent No. 6,765,117, which expires in October 2017; and U.S. Patent No. 7,999,007, which expires in March 2029. Each of these patents is listed in the Orange Book.

We responded to the Original Notice Letter by filing a lawsuit in March 2012 against Sandoz in the U.S. District Court for the District of New Jersey alleging patent infringement (the First Lawsuit). We responded to the Second Notice Letter by filing an additional lawsuit in January 2013 for patent infringement in the U.S. District Court for the District of New Jersey (the Second Lawsuit). Sandoz has filed its answer to our complaint in the First Lawsuit, and has also filed counterclaims alleging that the patents at issue in the litigation are invalid or will not be infringed by the commercial manufacture, use or sale of the proposed product described in Sandoz's ANDA submission. On February 21, 2013 Sandoz filed its answer to our complaint in the Second Lawsuit, and filed counter claims against us.

Under the Hatch-Waxman Act, the FDA is automatically precluded from approving Sandoz's ANDA with respect to each concentration of Remodulin for up to 30 months from receipt of the Notice Letter corresponding to such concentration or until the issuance of a district court decision that is adverse to us, whichever occurs first. We intend to vigorously enforce our intellectual property rights relating to Remodulin.

**ITEM 4. MINE SAFETY DISCLOSURES**

Not applicable.



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Our common stock (and associated preferred stock purchase rights) trades on the NASDAQ Global Select Market under the symbol "UTHR". The table below sets forth the high and low closing prices for our common stock for the periods indicated:

	2012		2011	
	High	Low	High	Low
January 1 - March 31	\$ 50.99	\$ 45.54	\$ 69.54	\$ 64.28
April 1 - June 30	\$ 49.38	\$ 40.42	\$ 70.70	\$ 53.49
July 1 - September 30	\$ 58.30	\$ 49.87	\$ 57.38	\$ 37.47
October 1 - December 31	\$ 58.91	\$ 44.99	\$ 47.54	\$ 37.21

**Number of Holders**

As of February 18, 2013, there were 38 holders of record of our common stock.

**Dividend Policy**

We have never paid and have no present intention to pay cash dividends on our common stock in the foreseeable future. We intend to retain any earnings for use in our business operations.

**Issuer Purchases of Equity Securities**

Period	Total Number of Shares (or Units) Purchased	Average Price Paid Per Share (or Unit)(1)	Total Number of Shares (or Units) Purchased as Part of Publicly Announced Plans or Programs	Maximum Number (or Approximate Dollar Value) of Shares (or Units) That May Yet Be Purchased Under the Plans or Programs(2)(3)
Beginning repurchase authority				\$ 57,075,344
October 1, 2012 - October 31, 2012	554,215	\$ 48.03	554,215	\$ 30,454,749
November 1, 2012 - November 30, 2012	631,941	\$ 48.19	631,941	\$
December 1, 2012 - December 31, 2012				\$
<b>Total</b>	<b>1,186,156</b>	<b>\$ 48.12</b>	<b>1,186,156</b>	<b>\$</b>

(1) Average price paid per share calculated at settlement, including commission.

(2) As previously disclosed in our Form 10-Q for the quarter ended June 30, 2012, on June 27, 2012, we announced that our Board of Directors authorized a share repurchase program for up to \$100.0 million in aggregate repurchases of our common stock effective over a one-year period beginning July 31, 2012. This repurchase program was completed during October 2012.

(3)

As previously disclosed in our Current Report on Form 8-K filed on February 4, 2013, our Board of Directors authorized a new share repurchase program for up to \$420.0 million in aggregate repurchases of our common stock effective over a one-year period beginning March 4, 2013.

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**Comparison of Five-Year Total Cumulative Shareholder Return**

The following chart shows the performance from December 31, 2007 through December 31, 2012 of United Therapeutics common stock, compared with an investment in the stocks represented in each of the NASDAQ U.S. Stock Market Index and the NASDAQ Pharmaceutical Stock Index, assuming \$100 was invested in each at the beginning of the period.

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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 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,				
	2012	2011	2010	2009	2008
<b>Consolidated Statements of Operations Data:</b>					
Revenues	\$ 916,076	\$ 743,183	\$ 592,899	\$ 358,880	\$ 272,012
Operating expenses:					
Research and development	173,387	180,015	165,306	120,368	237,810
Selling, general and administrative	201,746	156,482	188,606	171,894	90,218
Cost of product sales	119,297	88,904	67,674	40,861	26,931
Total operating expenses	494,430	425,401	421,586	333,123	354,959
Operating income (loss)	421,646	317,782	171,313	25,757	(82,947)
Total other income (expense), net	19,025	(18,665)	(16,162)	(7,134)	(1,665)
Income (loss) from continuing operations before income tax	440,671	299,117	155,151	18,623	(84,612)
Income tax (expense) benefit	(136,229)	(81,874)	(43,945)	695	34,394
Income (loss) from continuing operations	304,442	217,243	111,206	19,318	(50,218)
Income (loss) from discontinued operations, net of tax(1)		625	(5,290)	144	891
Net income (loss)	\$ 304,442	\$ 217,868	\$ 105,916	\$ 19,462	\$ (49,327)
Net income (loss) per common share:					
Basic(2)	\$ 5.84	\$ 3.81	\$ 1.89	\$ 0.37	\$ (1.08)
Diluted(2)	\$ 5.71	\$ 3.67	\$ 1.78	\$ 0.35	\$ (1.08)
Weighted average number of common shares outstanding:					
Basic(2)	52,093	57,163	56,142	53,314	45,802
Diluted(2)	53,280	59,395	59,516	56,133	45,802

	Year Ended December 31,				
	2012	2011	2010	2009	2008
<b>Consolidated Balance Sheet Data:</b>					
Cash, cash equivalents and marketable investments(3)	\$ 784,931	\$ 747,378	\$ 759,932	\$ 378,120	\$ 336,318
Total assets	1,626,595	1,518,079	1,431,635	1,051,544	874,534
Debt	276,323	266,835	305,968	250,599	234,952
Retained earnings (deficit)	553,480	249,038	31,170	(74,746)	(93,927)
Total stockholders' equity	1,083,981	948,488	883,886	653,009	555,334

(1)

In March 2011, we sold Medicomp, Inc., our former telemedicine subsidiary and subsequently discontinued all of our continuing telemedicine-related activities. Accordingly, the results of Medicomp, Inc. have been included within discontinued operations for each

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of the years presented. Refer to Note 17 *Sale of Medicomp, Inc.* to our consolidated financial statements included in this Annual Report on Form 10-K for details.

(2)

Refer to Note 10 *Stockholders' Equity Earnings per Share* to our consolidated financial statements included in this Annual Report on Form 10-K for the computation of basic and diluted net income per share for both continuing and discontinued operations.

(3)

Excludes restricted marketable investments and cash.

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

The following discussion should be read in conjunction with our consolidated financial statements and related notes to the consolidated financial statements included in this Annual Report on Form 10-K. The following discussion contains forward-looking statements made pursuant to the safe harbor provisions of Section 21E of the Securities Exchange Act of 1934 and the Private Securities Litigation Reform Act of 1995. These statements are based on our beliefs and expectations about future outcomes and are subject to risks and uncertainties that could cause actual results to differ materially from anticipated results. Factors that could cause or contribute to such differences include those described under *Part I, Item 1A Risk Factors* included in this Annual Report on Form 10-K and factors described in other cautionary statements, cautionary language and risk factors set forth in other documents filed with the Securities and Exchange Commission. We undertake no obligation to publicly update forward-looking statements, whether as a result of new information, future events or otherwise.

**Overview**

Our key therapeutic products and product candidates include:

*Prostacyclin analogues (Remodulin®, Tyvaso®, oral treprostinil, 314d, TransCon Treprostinil and TransCon Beraprost):* stable synthetic forms of prostacyclin, an important molecule produced by the body that has powerful effects on blood vessel health and function;

*Phosphodiesterase type 5 (PDE-5) inhibitor (Adcirca®):* a molecule that acts to inhibit the degradation of cyclic guanosine monophosphate (cGMP) in cells. cGMP is activated by nitric oxide (NO), a naturally occurring substance in the body that mediates the relaxation of vascular smooth muscle;

*Monoclonal antibodies for oncologic applications (Ch14.18 MAb and 8H9 MAb):* antibodies that treat cancer by activating the immune system;

*Glycobiology antiviral agents:* a novel class of small, sugar-like molecules that have shown antiviral activity in a range of pre-clinical settings;

*Cell-based therapy:* a cell-based product known as PLacental eXpanded (PLX) cells we are studying for the treatment of pulmonary hypertension; and

*Engineered lungs and lung tissue for transplantation:* Using xenotransplantation technology, as well as several regenerative medicine technologies, we are in the early pre-clinical stage of developing engineered lungs and lung tissue which can be transplanted to patients suffering from PAH and other lung diseases.

We concentrate substantially all of our research and development efforts on these key therapeutic programs. Our lead product is Remodulin (treprostinil) Injection (Remodulin) for the treatment of pulmonary arterial hypertension (PAH). The United States Food and Drug Administration (FDA) initially approved Remodulin in 2002 for subcutaneous (under the skin) administration. The FDA subsequently broadened its approval of Remodulin in 2004 for intravenous (in the vein) use and for the treatment of patients requiring transition from Flolan® (epoprostenol sodium) for Injection, the first drug approved by the FDA for the treatment of PAH. Remodulin has also been approved largely for subcutaneous use in various countries outside of the United States; however, in December 2011, we received regulatory approval by the French regulatory agency, *L'Agence Nationale de Sécurité du Médicament et des Produits de Santé* (ANSM), for the intravenous use of Remodulin to treat PAH. The ANSM approval followed a review period during which 22 European Economic Area member nations, each of which had previously approved subcutaneous Remodulin through the mutual recognition process, reviewed and endorsed the final variation assessment report issued by ANSM, which will allow

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us to market intravenous Remodulin in those countries following pricing approval and approval of our risk management plan in each country.

Our other commercial products include Tyvaso (treprostini) Inhalation Solution (Tyvaso) and Adcirca (tadalafil) tablets (Adcirca). In 2009, the FDA approved Adcirca, an orally administered therapy for the treatment of PAH to which we acquired exclusive U.S. commercialization rights from Eli Lilly and Company (Lilly). In 2009, we received FDA approval of Tyvaso, an inhaled therapy for the treatment of PAH. We launched both of these products for commercial sale in 2009. As compared with Remodulin, these two products enable us to offer treatments to a broader range of patients who suffer from PAH. In addition, we are developing an oral, extended-release tablet (oral treprostini) and an extended release injectable form of treprostini, both for the treatment of PAH. We are also developing an oral formulation of the prostacyclin analogue beraprost, which we refer to as 314d, and an extended release injection we refer to as TransCon Beraprost, both for the treatment of PAH.

***Revenues***

Sales of Remodulin comprise the largest share of our revenues. In addition, sales of both Tyvaso and Adcirca continue to become increasingly prominent sources of our revenues since their commercial introduction in 2009. We sell Remodulin and Tyvaso in the United States to our specialty pharmaceutical distributors: Accredo Health Group, Inc. (Accredo), CuraScript, Inc. (CuraScript) and CVS Caremark (Caremark). To date, the April 2012 acquisition of Medco Health Solutions (the parent company of Accredo) by Express Scripts, Inc. (the parent company of CuraScript) has not affected our business. In addition to marketing in the United States, we also sell Remodulin to distributors internationally. Adcirca is sold to pharmaceutical wholesalers that are part of Lilly's pharmaceutical wholesaler network. We increase the price of Tyvaso from time to time. Most recently, we increased the price at which we sell Tyvaso to our specialty pharmaceutical distributors by 4.9 percent effective January 1, 2013. In addition, since receiving FDA approval of Adcirca, Lilly has generally increased the net wholesale price of Adcirca twice per year. Most recently, Lilly informed us that the wholesale price of Adcirca would be increased by 9.5 percent effective January 1, 2013. Under our agreement with Lilly, Lilly has the right to determine the price at which we sell Adcirca.

We require our specialty pharmaceutical distributors to maintain reasonable levels of inventory reserves at all times as the interruption of Remodulin or Tyvaso therapy can be life threatening. Consequently, sales of these therapies in any given quarter may not precisely reflect patient demand. Our specialty pharmaceutical distributors typically place monthly orders based on estimates of future demand and considerations of contractual minimum inventory requirements. As a result, sales volumes of Remodulin and Tyvaso can vary, depending on the timing and magnitude of these orders.

The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act (collectively, the Acts), contains broad provisions that will be implemented over the next several years. We continue to evaluate the impact of the Acts on our business; however, our evaluation is dependent upon the issuance of final regulations and the impact this legislation will have on insurance companies and their relationships with drug manufacturers.

In January 2011, certain provisions of the Acts that address the coverage gap in the Medicare Part D prescription drug program (commonly known as the "donut hole") became effective. Under these provisions, drug manufacturers are required to provide a 50 percent discount on branded prescription drugs to patients receiving reimbursement under Medicare Part D while they remain in this coverage gap. These provisions of the Acts apply to Adcirca, which is our only commercial pharmaceutical product covered by Medicare Part D. Approximately 35 percent of our Adcirca patients are covered under Medicare Part D. The vast majority of our Remodulin and Tyvaso Medicare patients are covered under Medicare Part B, which does not contain a similar coverage gap.

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The Acts have not had a material impact on our business since their enactment, and we have not yet identified any provisions of the Acts that could have a material impact on our business in the future. However, the potential long-term impact of the Acts on our business is inherently difficult to predict, as many details regarding the implementation of this legislation have not yet been determined.

Total revenues are reported net of: (1) estimated rebates; (2) prompt pay discounts; (3) allowances for sales returns; and (4) distributor fees. We estimate our liability for rebates based on an analysis of historical levels of rebates by product to both state Medicaid agencies and commercial third-party payers relative to sales of each product. In addition, we determine our obligation for prescription drug discounts required for Medicare Part D patients within the coverage gap based on estimations of the number of Medicare Part D patients and the period such patients will remain within the coverage gap. We provide prompt pay discounts to customers that pay amounts due within a specific time period and base our estimates for prompt pay discounts on observed historical customer payment behavior. We derive estimates relating to the allowance for returns of Adcirca from published industry data specific to specialty pharmaceuticals and will continue to do so until we have sufficient historical data on which to base our allowance. We also compare patient prescription data for Adcirca to sales of Adcirca on a quarterly basis to ensure a reasonable relationship between prescription and sales trends. To date, we have not identified any unusual patterns in the volume of prescriptions relative to sales that would warrant reconsideration of, or adjustment to, the methodology we currently employ to estimate our allowance for returns. The allowance for exchanges for Remodulin is based on the historical rate of product exchanges, which has been immaterial. Tyvaso is distributed under similar contractual terms as Remodulin and the level of product exchanges for Tyvaso has been less than that of Remodulin. As such, we do not record reserves for exchanges for either Remodulin or Tyvaso. Furthermore, we anticipate minimal exchange activity in the future for both products. Lastly, we estimate distributor fees based on contractual rates for specific services applied to the estimated units of service provided for the period.

**Cost of Product Sales**

Cost of product sales is comprised of (1) costs to produce and acquire products sold to customers; (2) royalty payments under license agreements granting us rights to sell related products; and (3) direct and indirect distribution costs incurred in the sale of products. We acquired the rights to sell our commercial products through license and assignment agreements with the original developers of these products. These agreements obligate us to pay royalties based on our net revenues from related products. While the royalties vary by agreement, we pay aggregate royalties on each of our current commercial products ranging from five percent to ten percent of net revenues.

We synthesize treprostinil using advanced intermediate compounds purchased in bulk from several third-party vendors that have the capacity to produce greater quantities of these compounds more cost effectively than we do. Our synthesis process has been designed to give us the flexibility to produce the forms of treprostinil used in Remodulin, Tyvaso, and oral treprostinil tablets, based on forecasted demand for each of these products. We maintain inventories of Remodulin and Tyvaso equivalent to at least two years of expected demand to ensure sufficient availability of these products at all times. We have reduced our target inventory levels from three years to two years in light of the approval of additional production sites for Remodulin and Tyvaso, including our own facilities which we expect will become our primary sources of supply, as these developments have helped mitigate the risk of shortages.

In 2009, we amended our contract with our Remodulin producer, Baxter Pharmaceutical Solutions, LLC (Baxter), to extend the contract term through 2013. During the fourth quarter of 2012, we notified Baxter that we will not renew our current contract when it expires at the end of 2013. However, we expect to negotiate and enter into a new contract with Baxter before the expiration of the current contract. As part of the 2009 amendment, we agreed that Baxter will formulate Remodulin in



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greater quantities using larger capacity equipment. This new process and related equipment will require FDA and international regulatory approval. Until FDA approval of the new process and equipment, Baxter will continue to formulate Remodulin through 2013 using previously approved processes and equipment. If the validation and stability testing of the new process and equipment are successful, we anticipate filing for regulatory approval of the new equipment and process shortly after entering into a new contract with Baxter. In January 2011, we received FDA approval of Jubilant Hollister-Stier Contract Manufacturing and Services as an additional large-capacity producer of Remodulin. In addition, in March and July of 2011, we received FDA approval to use our Silver Spring, Maryland facility for the formulation of Tyvaso and Remodulin, respectively. In June 2012, we received a Good Manufacturing Practice certificate from the U.K. Medicines and Health Products Regulatory Agency to produce Remodulin and Tyvaso in our Silver Spring facility. Catalent Pharma Solutions, Inc. (Catalent) also formulates Tyvaso for us. We intend to use our own facilities to produce our primary supply of Remodulin and Tyvaso, and we intend to contract with third parties to supplement our production capacity.

We acquired all the assets used to manufacture the Tyvaso Inhalation System from NEBU-TEC International Med Products Eike Kern GmbH (NEBU-TEC) in 2009. We currently manufacture the Tyvaso Inhalation System in Germany using labor supplied by NEBU-TEC. In addition, we received FDA approval in December 2010 for Minnetronix, Inc. to manufacture the Tyvaso Inhalation System and for Quality Tech Services, Inc. to package daily supplies. In July 2012, we received FDA approval for a modified Tyvaso Inhalation System based on the results of the completion of certain post marketing commitments relating to the inhalation device. As a result, we are currently manufacturing the modified inhalation device (TD-100), which we expect to release commercially during 2013. Consequently, as of December 31, 2012, we increased our reserves for inventory obsolescence by \$8.9 million based on the estimated cost of inhalation device inventory we do not expect to be salable as a result of the commercial release of TD-100.

Under the terms of our manufacturing and supply agreement with Lilly, Lilly manufactures Adcirca and distributes the product on our behalf via its pharmaceutical wholesaler network, in the same manner that it distributes its own pharmaceutical products. We take title to Adcirca upon its manufacture by Lilly and bear any losses related to the distribution and sale of Adcirca.

**Operating Expenses**

Since our inception, we have devoted substantial resources to our various research and development initiatives. Accordingly, we incur considerable costs related to our clinical trials and other research and development efforts, which are conducted both internally and through third parties on a variety of projects to develop pharmaceutical products. From time-to-time, we also license or acquire additional technologies and compounds to be incorporated into our development pipeline.

Our operating expenses are often materially impacted by the recognition of share-based compensation expense (benefit) associated with our share tracking award plans (STAP) and stock option grants containing a performance requirement. Compensation expense associated with our stock purchase plan has thus far been insignificant. STAP awards, which are classified as liabilities, must be measured at fair value at the end of each reporting period until the awards are no longer outstanding. Changes in the fair value of STAP awards are recorded as an adjustment to share-based compensation expense (benefit). The fair value of equity-based awards is measured using inputs and assumptions under the Black-Scholes-Merton model that can materially impact the amount of compensation expense (benefit) for a given period. Additionally, some or all of the following factors, among others, can cause substantial volatility in the amount of share-based compensation expense (benefit) recognized in connection with the STAP from period to period: (1) changes in the price of our common stock; (2) changes in the number of outstanding awards; and (3) changes in both the number of vested awards and the number of awards that have accrued toward vesting. Stock options granted to our Chief

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Executive Officer, in accordance with the criteria set forth in her employment contract, vest immediately upon grant. We accrue for estimated compensation expense associated with STAP awards and stock option grants containing performance-based conditions affecting vesting when we determine that it is probable that performance criteria will be met. Each of these factors may cause significant volatility in our operating expenses from quarter-to-quarter.

**Major Research and Development Projects**

Our major research and development projects focus on the use of prostacyclin analogues and other therapies, as well as regenerative and xenotransplantation technologies, to treat cardiopulmonary diseases, monoclonal antibodies to treat a variety of cancers, and glycobiology antiviral agents to treat infectious diseases.

*Cardiopulmonary Disease Projects*

*Remodulin*

A majority of the patients who die of PAH in the United States each year have not initiated treatment with an infused prostacyclin analogue, which is a complex and burdensome form of medical therapy. In 2009, we entered into an agreement with Medtronic, Inc. (Medtronic) to develop its Synchronomed® implantable pump to deliver Remodulin, which, if successful, could eliminate many of the patient burdens associated with infused prostacyclins. Medtronic commenced a clinical trial administering Remodulin using the Synchronomed in April 2011 to support FDA approval for the use of Remodulin with an implantable pump. Patient enrollment in the clinical trial was completed in late November 2012. Based on current projections of patient days and discontinuations, we expect that the clinical trial will be completed in late 2013. In certain countries in Europe, an implantable pump distributed by OMT GmbH & Co. KG is used to deliver intravenous Remodulin to certain patients.

*Tyvaso*

The FDA approved Tyvaso for the treatment of PAH in 2009, and we launched the product for commercial sale later that year. In connection with the Tyvaso approval, we agreed to a post-marketing requirement (PMR) and certain post-marketing commitments (PMCs). PMRs and PMCs often obligate sponsors to conduct studies after FDA approval to gather additional information about a product's safety, efficacy, or optimal use. PMRs are required studies, whereas PMCs are voluntary commitments. In September 2011, the FDA notified us that we had fulfilled the requirements of the PMCs. In July 2012, we received FDA approval for a modified Tyvaso Inhalation System (TD-100) based on the results of the PMCs. As a result, we are currently manufacturing the TD-100, which we expect to release commercially during 2013. We are working to further improve the Tyvaso Inhalation System to make it easier for patients to use. If ultimately approved by the FDA, an improved Tyvaso Inhalation System could enhance patient convenience and potentially increase the number of patients using Tyvaso.

In accordance with our PMR, we enrolled patients in a long-term observational study in the United States that included 1,000 patient years of follow-up in patients treated with Tyvaso, and 1,000 patient years of follow-up in control patients receiving other PAH treatments. This study will allow us to continue assessing the safety of Tyvaso. We are required to provide the FDA with annual updates on our PMR, and to submit the results of the study by December 15, 2014. While we believe we are on schedule to complete the PMR by this deadline, any failure or delay could result in penalties, including fines or withdrawal of Tyvaso from the market, unless we are able to demonstrate good cause for the failure or delay.

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We are not seeking European Medicines Agency (EMA) approval of Tyvaso for the treatment of PAH. We expect to make Tyvaso available in certain European and Latin American countries in 2013 on an unmarketed, named-patient basis through country-specific arrangements with our distributors, to the extent physicians prescribe Tyvaso in those countries.

*Oral Treprostinil*

We are developing a novel salt form of treprostinil for oral administration, treprostinil diolamine tablets. In December 2011, we submitted to the FDA an NDA for the approval of oral treprostinil for treatment of PAH. Our NDA included the results of three phase III studies:

*Combination Therapy Studies (FREEDOM-C and FREEDOM-C<sup>2</sup>):* Two separate 16-week studies of patients on approved background therapy using a PDE-5 inhibitor, such as Revatio, or an ETRA, such as Tracleer, or a combination of both. The FREEDOM-C and FREEDOM-C<sup>2</sup> trials were completed in 2008 and 2011 respectively, and neither achieved statistical significance for its primary endpoint of improvement in six-minute walk distance at week 16 (p=0.072 and p=0.089, respectively).

*Monotherapy Study (FREEDOM-M):* A 12-week study of PAH patients who were not on any approved background therapy. In June 2011, we announced that the FREEDOM-M trial met its primary endpoint of improvement in six-minute walk distance at week 12. Analysis of the FREEDOM-M results demonstrated that patients receiving oral treprostinil improved their six-minute walk distance by a median of approximately 23 meters (p=0.0125, Hodges-Lehmann estimate and non-parametric analysis of covariance in accordance with the trial's pre-specified statistical analysis plan) as compared to patients receiving placebo. The median change from baseline at week 12 was 25 meters for patients receiving oral treprostinil and -5 meters for patients receiving placebo.

We believe that patients in the FREEDOM-C and FREEDOM-C<sup>2</sup> trials needed longer-term treatment with oral treprostinil to provide a statistically significant clinical trial outcome. As such, we began enrolling patients in a new phase III clinical trial (FREEDOM-EV) in the third quarter of 2012. FREEDOM-EV is a placebo-controlled study of newly-diagnosed patients who have initiated an approved background therapy (either an ETRA or a PDE-5 inhibitor, but not both), with one co-primary endpoint being the time to clinical worsening, generally defined as (1) death; (2) an unplanned hospitalization due to PAH; (3) initiation of prostacyclin for the treatment of PAH; (4) a decrease in six-minute walk distance of at least 15 percent from baseline (or too ill to walk) as a result of the progression of PAH; or (5) unsatisfactory long-term clinical response. The other co-primary endpoint is change in six minute-walk distance at week 24. We plan to enroll up to 858 patients in order to observe 349 clinical worsening events.

On October 23, 2012, the FDA issued a complete response letter in which it declined to approve our NDA. In January 2013, we filed a resubmission of our NDA in response to the concerns raised in the FDA's complete response letter. The FDA has acknowledged our resubmission as complete and set a targeted response date of March 31, 2013. Despite the FDA's complete response letter and uncertainty as to whether our resubmission will be approved, we remain committed to further studying oral treprostinil and seeking FDA approval before the end of 2016. We currently expect to seek approval of oral treprostinil in Europe upon completion of the FREEDOM-EV study. In 2005, the EMA announced that oral treprostinil had been designated an orphan medicinal product for the treatment of PAH.

*Self-Injectable Prostacyclin Analogues*

In September 2012, we announced that we signed an exclusive agreement with Ascendis Pharma A/S (Ascendis Pharma) to apply Ascendis Pharma's proprietary TransCon technology platform to our

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treprostinil molecule. We believe that the TransCon technology platform may enable a sustained release of a novel, carrier-linked product, which will significantly enhance the delivery of treprostinil by establishing a once-daily, self-injectable alternative for patients who currently administer Remodulin through a continuous infusion pump for the treatment of PAH. We expect that this self-injectable form of treprostinil could enable patients to avoid the infusion site pain associated with subcutaneous Remodulin. Under this agreement, we also intend to pursue development of a TransCon technology-enabled sustained release formulation of beraprost, which is another prostacyclin analogue, as discussed below.

*314d and TransCon Beraprost*

In July 2011, we entered into an exclusive license agreement with Toray Industries, Inc. (Toray) to amend and replace our existing 2007 license agreement regarding the development of an orally-administered, modified release formulation of the prostacyclin analogue beraprost (beraprost-MR), for the treatment of PAH. Terms of the July 2011 license agreement did not materially change from the previous license agreement and license agreement supplements, except for a reduction in royalty rates. In exchange for the reduction in royalty rates, we agreed to pay Toray \$50.0 million in equal, non-refundable payments over a five-year period ending in 2015.

In November 2011, we announced that a phase II trial of beraprost-MR did not provide data supporting the initiation of a phase III study using a twice-daily dosing regimen. The results of this study suggested that the efficacy of beraprost may be improved by providing more stable and consistent plasma concentrations of beraprost. Therefore, we commenced studies of a reformulated, single-isomer version of the drug (314d), with a dosing regimen of four times per day. We completed a phase I safety trial in July 2012, and the preliminary data suggested that dosing 314d four times a day was safe. We believe that 314d and treprostinil bind selectively to different sets of prostacyclin receptors within the lung and thus could provide certain groups of patients a differing set of safety and efficacy profiles. Currently, we are developing a phase III study to evaluate the clinical benefit of 314d as an add-on therapy to Tyvaso.

During the third quarter of 2012, we initiated efforts to develop an extended-release injection we refer to as TransCon Beraprost, which incorporates the TransCon technology described above and is intended to be self-administered by PAH patients once daily.

*Cell-Based Therapy*

In June 2011, we entered into a license agreement with Pluristem Ltd. (Pluristem) to develop and commercialize a cell-based product for the treatment of PAH using Pluristem's proprietary cell technology known as PLacental eXpanded (PLX) cells. We are currently conducting preclinical toxicology and pharmacology studies to support a potential investigational new drug application for the treatment of PAH, and expect to commence a phase I clinical study in Australia in the first half of 2013.

*Engineered Lungs and Lung Tissue for Transplantation*

PAH has not been reported to reoccur in end-stage patients who have received a full lung transplant. Only a few hundred PAH patients receive a lung transplantation each year due to the shortage of available lungs for transplant and the demand for transplantable lungs by patients with end-stage pulmonary disease, such as chronic obstructive pulmonary disease and idiopathic pulmonary fibrosis. In July 2011, we acquired all of the outstanding stock of Revivicor, Inc. (Revivicor), a company focused on developing genetic biotechnology platforms to provide alternative tissue sources for treatment of human degenerative disease through tissue and organ xenotransplantation. We acquired Revivicor to pursue early-stage development of replacement lungs for transplantation. For further

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details concerning the Revivicor acquisition, see Note 16 *Acquisitions* to the consolidated financial statements contained in this Annual Report on Form 10-K for the year ended December 31, 2012.

We are also engaged in preclinical development of several regenerative medicine technologies for creating transplantable lung tissue and whole lungs for patients with end-stage lung disease.

#### *Collagen Type V*

In February 2010, Lung LLC entered into a Development Agreement with ImmuneWorks, Inc. (ImmuneWorks) to develop IW001, a purified bovine (derived from cows) Type V Collagen oral solution for the treatment of idiopathic pulmonary fibrosis, a progressive lung disease characterized by abnormal and excessive deposition of fibrotic tissue in the lung, and primary graft dysfunction, a type of organ rejection in patients receiving lung transplant. We terminated the development agreement effective November 2012, following a review of the results of a phase I clinical trial of IW001.

From inception to December 31, 2012, we have spent \$874.5 million on all of our current and former cardiopulmonary disease programs.

#### ***Cancer-Related Projects***

##### *Ch14.18 Antibody*

In July 2010, we entered into a Cooperative Research and Development Agreement (CRADA) with the National Cancer Institute (NCI) of the United States National Institutes for Health to collaborate on the late-stage development and regulatory approval process for Chimeric Monoclonal Antibody 14.18 (Ch14.18) for children with high-risk neuroblastoma and patients with other forms of cancer. Ch14.18 is an antibody that has shown potential in the treatment of certain types of cancer by targeting GD2, a glycolipid on the surface of tumor cells. Under the terms of the CRADA, NCI has completed a second phase III clinical trial in 105 patients to define more clearly the safety and toxicity profile of Ch14.18 immunotherapy in children, and we are developing the commercial production capability for the antibody. As part of developing our commercial production capability, we will need to demonstrate comparability of our Ch14.18 to the NCI-produced Ch14.18, which typically includes a series of analytical and bioanalytical assays and human pharmacokinetics. The human pharmacokinetics study is currently open for enrollment in the United States. The NCI studies, including a previously conducted phase III clinical trial and all other necessary studies supported by NCI, will be used as the basis for a biologics license application we expect to file seeking FDA approval of Ch14.18 immunotherapy for the treatment of neuroblastoma and a marketing authorization application we expect to file with the EMA for approval in Europe. We have received orphan drug designation for Ch14.18 from the FDA and the EMA.

##### *8H9 Antibody*

Pursuant to a 2007 agreement with Memorial Sloan-Kettering Cancer Center, we obtained certain license rights to an investigational monoclonal antibody, 8H9, for the treatment of metastatic brain cancer. 8H9 is a mouse IgG1 MAb that is highly reactive with a range of human solid tumors, including human brain cancers. The 8H9 antibody is in early investigational development for metastases that develop in the brain from the spread of cancers from other tissues in the body. Metastatic brain cancers are ten times more common than cancers that originate in the brain, and prognosis for patients with metastatic brain cancers is very poor. In the United States, more than 100,000 cases of metastatic brain cancer are diagnosed each year.

We have spent \$87.2 million from inception to December 31, 2012, on all of our current and former cancer programs.

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***Infectious Disease Projects***

Pursuant to our research agreement with the University of Oxford (Oxford), we have the exclusive right to commercialize a platform of glycobiology antiviral drug candidates in various preclinical and clinical stages of testing for the treatment of a wide variety of viruses. Through our research agreement with Oxford, we are also supporting research into new glycobiology antiviral drug candidates and technologies. We are currently testing many of these compounds in preclinical studies and Oxford continues to synthesize new agents that we may elect to test.

In September 2011, we were awarded a cost plus fixed fee contract with an aggregate value of up to \$45.0 million under a Broad Agency Announcement from the National Institute of Allergy and Infectious Diseases (NIAID) of the United States National Institutes for Health for studies directed at the development of a broad spectrum antiviral drug based on our glycobiology antiviral platform. Under the contract's base period of forty-two months, we will receive \$10.6 million in funding. In addition, there are eight milestone-based options to expand the project and funding under the contract. In August 2012, we received a contract modification exercising two of the above-mentioned milestone-based options, increasing total contract funding by \$8.7 million. We recognize revenue under this contract to the extent of costs incurred, plus a proportionate amount of fee earned.

We have spent \$64.0 million from inception to December 31, 2012, on all of our current and former infectious disease programs.

**Future Prospects**

Our future prospects are dependent on achieving some or all of the following objectives: (1) in the near term, continued revenue growth of our current commercial products by increasing our market share and launching enhancements designed to improve patient care, such as implantable pumps for Remodulin, a once-daily self-injectable form of Remodulin and continued enhancements to the Tyvaso Inhalation System; (2) in the medium term, augmenting our near-term product growth through: (a) the approval and launch of oral prostacyclin analogues for use in combination with Adcirca and other oral therapies at earlier stages of PAH, and (b) commercial launch and sales of one or more of our antiviral drug candidates to the government and private sectors; and (3) in the long term, supplementing our oral, inhaled and infused PAH therapy revenues by introducing transplantable cells, tissues and organs that might provide successful treatment for PAH and other patients facing end-stage lung disease.

Our ability to achieve these objectives and sustain our growth and profitability will depend on many factors including among others: (1) the timing and outcome of clinical trials and regulatory approvals for products we develop; (2) the timing of the commercial launch of new products; (3) the pricing of and demand for our products and services; (4) the reimbursement of our products by public and private insurance organizations; (5) the competition we face within our industry; (6) our ability to effectively manage our growth in an increasingly complex regulatory environment; and (7) our ability to defend against generic competition, including the ongoing challenge to our Remodulin patents by a generic drug company.

As we develop our products in the future, we may need to construct additional facilities to support the development and commercialization of these products. For example, the development of transplantable lungs and lung tissues through our xenotransplantation and regenerative medicine programs will require the design and construction of sophisticated facilities that will need to comply with the regulatory requirements related to these programs. In addition, if we are successful with the development of any or all of our other developmental products, we may need to build additional facilities to support our expanding operations. In 2013, we will commence construction of certain facilities to in connection with our xenotransplantation and regenerative medicine programs. The extent to which we develop such facilities will depend on the progress of our pre-clinical development in these programs.

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We operate in a highly competitive market in which a small number of pharmaceutical companies control a majority of the PAH business. These pharmaceutical companies not only possess more visibility in the market, but also possess greater financial, technical and marketing resources than we do. In addition, there are a number of investigational products in late-stage development that, if approved, may erode the market share of our existing commercial therapies and make market acceptance more difficult to achieve for any therapies we may market in the future.

**Financial Position**

Cash and cash equivalents and current and non-current marketable investments (excluding restricted amounts) at December 31, 2012 were \$784.9 million, compared to approximately \$747.4 million as of December 31, 2011. The increase of \$37.6 million resulted from the increase in revenues for the year ended December 31, 2012, offset in part by the following significant expenditures during 2012: (1) \$188.0 million in repurchases of our common stock; (2) \$102.3 million in estimated tax payments for 2012; and (3) \$75.5 million in expenditures for the completion of our construction projects in Maryland and North Carolina.

Accounts receivable at December 31, 2012, was \$116.6 million, compared to \$88.7 million at December 31, 2011. The \$27.9 million increase materially reflected the approximately 25 percent increase in sales during the quarter ended December 31, 2012, compared to the quarter ended December 31, 2011.

The \$8.7 million decrease in inventory from \$46.0 million at December 31, 2011 to \$37.3 million at December 31, 2012, reflects an \$8.9 million increase in our reserves for obsolescence, representing the cost of Tyvaso Inhalation System devices expected to be rendered obsolete based on the pending commercial release of our improved inhalation device, the TD-100. Refer to the sub-section above "*Overview Cost of Goods Sold*" for further details.

The increase in property, plant and equipment of \$87.6 million, from \$366.0 million at December 31, 2011 to \$453.7 million at December 31, 2012, was driven by the completion of certain construction projects, which amounted to \$75.5 million, and the acquisition of property adjacent to our facilities in North Carolina at a cost of \$16.9 million.

The decrease in deferred tax assets of \$34.2 million from \$198.9 million at December 31, 2011 to \$164.7 million at December 31, 2012 reflects the utilization of business tax credits. Refer to Note 11 *Income Taxes* to the consolidated financial statements included in this Annual Report on Form 10-K for details of our net deferred tax assets.

Accounts payable at December 31, 2012 was \$10.2 million, compared to \$47.3 million at December 31, 2011. The decrease in accounts payable of \$37.1 million was attributable to customary timing variances of vendor invoices. In addition, at December 31, 2011, \$14.5 million of construction-related invoices were pending payment as compared to \$205,000 at December 31, 2012.

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The \$15.8 million increase in accrued expenses from \$57.2 million at December 31, 2011 to \$73.0 million at December 31, 2012 reflects: (1) a \$8.1 million increase in payroll-related accruals particularly relating to incentive compensation; and (2) a \$4.3 million increase in accruals for fourth quarter royalties and rebates.

Other current liabilities at December 31, 2012 were \$93.6 million, compared to \$108.1 million at December 31, 2011. The decrease in other current liabilities of \$14.5 million resulted from the following: (1) a \$7.7 million decrease in construction-related accruals, as we completed certain construction projects during 2012; (2) a \$4.5 million decrease in the STAP liability; and (3) a \$2.8 million decrease in taxes payable.

Convertible notes increased by \$10.5 million, from \$194.2 million at December 31, 2011 to \$204.7 million at December 31, 2012. The increase in convertible notes reflects amortization of the debt discount. Refer to Note 8 *Debt* to the consolidated financial statements included in this Annual Report on Form 10-K for details.

Additional paid-in capital increased by \$23.1 million from \$992.7 million at December 31, 2011 to \$1,015.8 million at December 31, 2012. The increase was comprised of the following elements: (1) \$19.9 million in proceeds and related tax benefits received from stock-option exercises; and (2) \$3.3 million in share-based compensation, of which, \$3.0 million related to our Chief Executive Officer's annual year-end stock option award, based on the terms of her employment agreement.

Treasury stock was \$471.0 million at December 31, 2012, compared to \$283.0 million at December 31, 2011. The increase of \$188.0 million resulted from our repurchase of approximately 4.0 million shares of our common stock at an aggregate cost \$188.0 million or an average cost per share of \$46.77. Refer to Note 10 *Stockholders' Equity Share Repurchases* to the consolidated financial statements contained in this Annual Report on Form 10-K for further details.

### **Results of Operations**

#### *Years ended December 31, 2012 and 2011*

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

	Year Ended December 31,		Percentage Change
	2012	2011	
Cardiopulmonary products:			
Remodulin	\$ 457,969	\$ 430,132	6.5%
Tyvaso	325,614	240,382	35.5%
Adcirca	122,540	70,580	73.6%
Other	9,953	2,089	376.4%
Total revenues	\$ 916,076	\$ 743,183	23.3%

The growth in revenues for the year ended December 31, 2012, compared to the year ended December 31, 2011, corresponded to the continued increase in the number of patients being prescribed our products.

For the years ended December 31, 2012 and 2011, approximately 78 percent and 81 percent, respectively, of net revenues were derived from our three U.S.-based distributors. Other revenues includes the recognition of approximately \$6.9 million of revenue from our contract with NIAID and the recognition of approximately \$2.0 million of deferred revenue upon the termination of a third-party license agreement to which our subsidiary, Revivicor, Inc. was a party, and the resulting termination of



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our obligation to perform future services. See Note 16 *Acquisitions Revivacor, Inc.* to the consolidated financial statements contained in this Annual Report on Form 10-K for further information.

The table below includes a reconciliation of the accounts associated with estimated rebates, prompt-pay discounts, allowances for sales returns and distributor fees (in thousands):

	Year Ended December 31, 2012					Total
	Rebates	Prompt Pay Discounts	Allowance for Sales Returns	Distributor Fees		
Balance, January 1, 2012	\$ 13,993	\$ 1,679	\$ 1,402	\$ 732		\$ 17,806
Provisions attributed to sales in:						
Current period	53,674	18,682	1,717	6,089		80,162
Prior periods	(949)	6	381	31		(531)
Payments or credits attributed to sales in:						
Current period	(39,559)	(16,567)		(4,808)		(60,934)
Prior periods	(11,952)	(1,685)	(150)	(763)		(14,550)
Balance, December 31, 2012	\$ 15,207	\$ 2,115	\$ 3,350	\$ 1,281		\$ 21,953

	Year Ended December 31, 2011					Total
	Rebates	Prompt Pay Discounts	Allowance for Sales Returns	Distributor Fees		
Balance, January 1, 2011	\$ 10,503	\$ 1,467	\$ 482	\$ 724		\$ 13,176
Provisions attributed to sales in:						
Current period	41,231	15,766	923	4,677		62,597
Prior periods	2,853					2,853
Payments or credits attributed to sales in:						
Current period	(27,734)	(14,088)		(4,007)		(45,829)
Prior periods	(12,860)	(1,466)	(3)	(662)		(14,991)
Balance, December 31, 2011	\$ 13,993	\$ 1,679	\$ 1,402	\$ 732		\$ 17,806

### *Cost of Product Sales*

The cost of products sales as a percentage of product revenues increased to 13.0 percent for the year ended December 31, 2012 compared to 12.2 percent for the year ended December 31, 2011. During the fourth quarter of 2012, we increased our reserves for inventory obsolescence by \$8.9 million, which represents the cost of the inhalation devices incorporated into our Tyvaso Inhalation System expected to be rendered obsolete based on the pending commercial release of our improved inhalation device, the TD-100.

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

	Year Ended December 31,		Percentage Change
	2012	2011	
<b>Project and non-project:</b>			
Cardiopulmonary	\$ 122,350	\$ 150,501	(18.7)%
Share-based compensation expense (benefit)	11,237	(7,994)	240.6%
Other	39,800	37,508	6.1%
Total research and development expense	\$ 174,387	\$ 180,015	(3.7)%

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*Cardiopulmonary.* The decrease in cardiopulmonary program expenses of \$28.2 million for the year ended December 31, 2012, compared to the year ended December 31, 2011, corresponded to a \$55.7 million decrease in expenses relating to the development of beraprost, as during the year ended December 31, 2011 we recognized a \$46.3 million charge relating to our July 2011 amended license agreement with Toray. This decrease was partially offset by the increases of: (1) \$16.9 million in expenses relating to work on our self-injectable prostacyclin analogues program; (2) \$5.4 million in expenses associated with our development of an implantable pump for Remodulin; and (3) \$4.1 million relating to our work to develop engineered lungs and lung tissue for transplantation.

*Share-based compensation.* The increase in share-based compensation of \$19.2 million for the year ended December 31, 2012, compared to the year ended December 31, 2011, resulted from the approximately 13 percent appreciation in the price of our common stock during the year ended December 31, 2012, compared to the approximately 25 percent decline in our stock price during the year ended December 31, 2011.

The table below summarizes selling, general and administrative expense by major categories (dollars in thousands):

Category:	Year Ended December 31,		Percentage Change
	2012	2011	
General and administrative	\$ 116,899	\$ 97,785	19.5%
Sales and marketing	67,220	66,405	1.2%
Share-based compensation expense (benefit)	17,627	(7,708)	328.7%
<b>Total selling, general and administrative expense</b>	<b>\$ 201,746</b>	<b>\$ 156,482</b>	<b>28.9%</b>

*General and administrative.* The increase in general and administrative expenses of \$19.1 million for the year ended December 31, 2012, compared to the year ended December 31, 2011, was driven by the following: (1) the recognition of a \$6.8 million impairment loss relating to a contract-based intangible asset as described in Note 16 *Acquisitions Revivicor, Inc.* to the consolidated financial statements contained in this Annual Report on Form 10-K; (2) a \$6.3 million increase, principally in grants to non-affiliated, not-for-profit organizations that provide financial assistance to patients with PAH; and (3) an increase of \$5.4 million in depreciation expense as a result of the expansion of our corporate headquarters in Maryland and our facilities in North Carolina in 2012.

*Share-based compensation.* The increase in share-based compensation of \$25.3 million for the year ended December 31, 2012, compared to the year ended December 31, 2011, corresponded to the approximately 13 percent appreciation in the price of our common stock during the year ended December 31, 2012, compared to the approximately 25 percent decline in our stock price during the year ended December 31, 2011.

*Other (expense) Income Other, net*

Other, net was \$31.9 million for the year ended December 31, 2012, compared to other, net of \$(629,000) for the year ended December 31, 2011. The \$32.5 million increase was driven by the recognition of an approximately \$31.0 million gain from insurance proceeds. Refer to Note 20 *Litigation Lexington Insurance Company* to the consolidated financial statements contained in this Annual Report on Form 10-K.

Table of Contents*Income Tax Expense*

The provision for income taxes was \$136.2 million for the year ended December 31, 2012 compared to \$81.9 million for the year ended December 31, 2011. The increase of \$54.3 million in the provision for income taxes corresponded to the increase in pre-tax earnings. For the years ended December 31, 2012 and December 31, 2011, the effective tax rates were approximately 31 percent and 27 percent, respectively. For each of these two years in the period ended December 31, 2012, the reduction in the effective tax rates below the expected applicable statutory rates was driven in large part by our domestic manufacturing deduction and our generation of general business tax credits. For complete details refer to Note 11 *Income Taxes* contained in this Annual Report on 10-K.

*Years ended December 31, 2011 and 2010*

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

	Year Ended December 31,		Percentage Change
	2011	2010	
Cardiopulmonary products:			
Remodulin	\$ 430,132	\$ 403,598	6.6%
Tyvaso	240,382	151,797	58.4%
Adcirca	70,580	36,307	94.4%
Other	2,089	1,197	74.5%
Total revenues	\$ 743,183	\$ 592,899	25.3%

The growth in revenues for the year ended December 31, 2011, compared to the year ended December 31, 2010, corresponded to the continued increase in the number of patients being prescribed our products. For the years ended December 31, 2011 and 2010, approximately 81 percent and 84 percent, respectively, of net revenues were derived from our three U.S.-based distributors.

The table below includes a reconciliation of the accounts associated with estimated rebates, prompt-pay discounts, allowances for sales returns and distributor fees (in thousands):

	Year Ended December 31, 2011					Total
	Rebates	Prompt Pay Discounts	Allowance for Sales Returns	Distributor Fees		
Balance, January 1, 2011	\$ 10,503	\$ 1,467	\$ 482	\$ 724	\$ 13,176	
Provisions attributed to sales in:						
Current period	41,231	15,766	923	4,677	62,597	
Prior periods	2,853				2,853	
Payments or credits attributed to sales in:						
Current period	(27,734)	(14,088)		(4,007)	(45,829)	
Prior periods	(12,860)	(1,466)	(3)	(662)	(14,991)	
Balance, December 31, 2011	\$ 13,993	\$ 1,679	\$ 1,402	\$ 732	\$ 17,806	

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	Year Ended December 31, 2010					
	Rebates	Prompt Pay Discounts	Allowance for Sales Returns	Distributor Fees		Total
Balance, January 1, 2010	\$ 4,959	\$ 979	\$ 64	\$ 637		\$ 6,639
Provisions attributed to sales in:						
Current period	27,028	12,563	418	4,157		44,166
Prior periods	232					232
Payments or credits attributed to sales in:						
Current period	(18,253)	(11,147)		(3,429)		(32,829)
Prior periods	(3,463)	(928)		(641)		(5,032)
Balance, December 31, 2010	\$ 10,503	\$ 1,467	\$ 482	\$ 724		\$ 13,176

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

	Year Ended December 31,		Percentage Change
	2011	2010	
<b>Project and non-project:</b>			
Cardiopulmonary	\$ 150,501	\$ 86,161	74.7%
Share-based compensation (benefit) expense	(7,994)	45,878	(117.4)%
Other	37,508	33,267	12.7%
<b>Total research and development expense</b>	<b>\$ 180,015</b>	<b>\$ 165,306</b>	<b>8.9%</b>

*Cardiopulmonary.* The increase in cardiopulmonary program expenses of \$64.3 million for the year ended December 31, 2011, compared to the year ended December 31, 2010, corresponded to: (1) an increase of \$46.1 million in expenses to develop beraprost, which resulted in large part from our July 2011 license agreement amendment with Toray; (2) an increase of \$18.3 million in connection with other cardiopulmonary projects, including a \$5.0 million charge incurred in connection with the closing of our license agreement with Pluristem; and (3) an increase of \$4.2 million in expenses related to our FREEDOM-C<sup>2</sup> and FREEDOM-M clinical trials.

*Share-based compensation.* The decrease in share-based compensation of \$53.9 million for the year ended December 31, 2011, compared to the year ended December 31, 2010, resulted from the decline in our stock price of approximately 25 percent during the year ended December 31, 2011 compared to an approximately 20 percent appreciation in the price of our stock price during the year ended December 31, 2010.

*Other.* The increase in other research and development expenses of \$4.2 million for the year ended December 31, 2011, compared to the year ended December 31, 2010, was due to an increase of \$5.8 million in expenses related to our monoclonal antibody development.

The table below summarizes selling, general and administrative expense by major category (dollars in thousands):

	Year Ended December 31,		Percentage Change
	2011	2010	
<b>Category:</b>			
General and administrative	\$ 97,785	\$ 75,292	29.9%
Sales and marketing	66,405	46,123	44.0%
Share-based compensation (benefit) expense	(7,708)	67,191	(111.5)%
<b>Total selling, general and administrative expense</b>	<b>\$ 156,482</b>	<b>\$ 188,606</b>	<b>(17.0)%</b>

*General and administrative.* The increase in general and administrative expenses of \$22.5 million for the year ended December 31, 2011, compared to the year ended December 31, 2010, was driven by the following: (1) a \$4.5 million increase in salaries as a result of headcount growth and annual salary raises; (2) a \$10.6 million increase in professional fees and other expenses related to our business development activities; (3) a \$3.4 million increase in expenses associated with our obligations under contingent payouts to NEBU-TEC; and (4) a \$2.7 million increase in general operating expenses, which corresponded to our expansion.

*Sales and marketing.* The increase in sales and marketing expenses of \$20.3 million for the year ended December 31, 2011, compared to the year ended December 31, 2010, was attributable to

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increases of \$9.8 million in salaries due to the expansion of our sales force and annual salary raises, and \$8.4 million in professional fees and expenses incurred in connection with our marketing and advertising programs.

*Share-based compensation.* The decrease in share-based compensation of \$74.9 million for the year ended December 31, 2011, compared to the year ended December 31, 2010, corresponded to a reduction in share-based compensation recognized in connection with the STAP as a result of the decline in our stock price of approximately 25 percent during the year ended December 31, 2011 compared to an approximately 20 percent appreciation in the price of our stock price during the year ended December 31, 2010.

*Income Tax Expense.* The provision for income taxes was \$81.9 million for the year ended December 31, 2011 compared to \$43.9 million for the year ended December 31, 2010. The increase in the provision for income taxes corresponded to the increase in pre-tax earnings. For the years ended December 31, 2011 and 2010, the effective tax rates were approximately 27 percent and 28 percent, respectively. For each of these two years, the reduction in the effective tax rates below the applicable statutory rates resulted in large part from the generation of business tax credits relating to our research and development.

**Liquidity and Capital Resources**

We have funded our operations principally through sales of our commercial products and, from time-to-time, third-party financing arrangements. We believe that our current liquidity is sufficient to fund ongoing operations as demand for our commercial products is expected to continue expanding. Furthermore, our customer base remains stable and, we believe, presents minimal credit risk. However, any projections of future cash flows are inherently subject to uncertainty. To compensate for such uncertainty, we may seek other sources of funding in the future and believe we have the ability to do so. See *Item 1A Risk Factors We have had periods in which we incurred losses and may not maintain profitability* and *Item 1A Risk Factors We may fail to meet our own projected revenues, as well as third-party projections for our revenues or profits.*

***Cash Flows and Working Capital***

***2012 Compared to 2011***

***Operating***

Net cash provided by operating activities was \$323.6 million for the year ended December 31, 2012, compared to net cash provided of \$250.2 million for the year ended December 31, 2011. The \$73.4 million increase in net operating cash flows was driven by an increase of \$84.5 million in net income, which resulted mainly from an increase in revenues for 2012 and a \$45.8 million increase in share-based compensation due to the appreciation in our stock price at December 31, 2012 compared to December 31, 2011. The preceding increases were partially offset by a decrease of \$53.9 million in the change in accounts payable, which was attributable to customary timing variances in the receipt and payment of vendor invoices. In addition, at December 31, 2011, \$14.5 million of construction-related invoices were pending payment as compared to \$205,000 at December 31, 2012.

***Investing***

Net cash used in investing activities was \$163.4 million for the year ended December 31, 2012, compared to \$121.3 million for the year ended December 31, 2011. The \$42.0 million increase in net cash used in investing activities reflects a \$75.9 million increase in expenditures associated with: (1) the completion of our Maryland and North Carolina construction projects in 2012; and (2) the acquisition

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of land and property in North Carolina for planned future expansion, partially offset by a \$30.4 million increase in cash received from the maturities of investments net of purchases.

*Financing*

Net cash used in financing activities was \$169.1 million for the year ended December 31, 2012 compared to \$218.1 million for the year ended December 31, 2011. During the year ended December 31, 2011, we used \$250.0 million to pay off the aggregate principal value of our 0.50 percent Convertible Senior Notes due October 15, 2011 (2011 Convertible Notes) upon their maturity date; in addition, during October 2011, we received \$250.0 million in proceeds upon the issuance at par value, of our 1.0 percent Convertible Senior Notes due September 15, 2016 (2016 Convertible Notes). In connection with the issuance of our 2016 Convertible Notes, we incurred issuance costs of \$7.5 million and used \$33.3 million to fund the net cost of a convertible note hedge and warrants. There were no comparable transactions during 2012. In addition, expenditures for share repurchases decreased by \$24.0 million during the year ended December 31, 2012 compared to the year ended December 31, 2011 and proceeds received from the exercise of stock options and related tax benefits recognized decreased by \$15.9 million.

**2011 Compared to 2010**

*Operating*

Net cash provided by operating activities was \$250.2 million for the year ended December 31, 2011, compared to \$211.5 million for the year ended December 31, 2010. The increase in net operating cash flows of \$38.7 million was driven by increases of \$112.0 million in net income and \$37.0 million in non-cash license fees to Toray. These increases were offset in part by a \$129.7 million reduction in share-based compensation.

*Investing*

Net cash used in investing activities was \$121.3 million for the year ended December 31, 2011, compared to \$209.2 million for the year ended December 31, 2010. The decrease of \$87.9 million in cash used in investing activities corresponded to: (1) a \$122.7 million decrease in cash used for purchases of investments, net of maturities and sales of trading investments, provided funding for the \$250.0 million payment associated with the maturity of our 2011 Convertible Notes; and (2) a \$17.3 million increase in expenditures related to our construction projects.

*Financing*

Net cash used in financing activities for the year ended December 31, 2011 was \$218.1 million, compared to \$146.8 million of net cash provided by financing activities for the year ended December 31, 2010. The \$364.8 million decrease in cash flows from financing activities resulted from the following: (1) \$251.0 million in principal repayments of debt, of which \$250.0 million related to the maturity of our 2011 Convertible Notes; and (2) a \$73.5 million reduction in proceeds from stock option exercises and related tax benefits recognized which reflects the decline in the price of our common stock price during the year ended December 31, 2011. Lastly, we used \$242.5 million in net proceeds received from the October 2011 issuance of our 2016 Convertible Notes to fund: (1) the net cost of a convertible note hedge and warrants; and (2) the cost of an accelerated share repurchase agreement. For further details relating to these transactions refer to Note 8 *Debt Convertible Notes Due 2016* and Note 10 *Stockholders' Equity Share Repurchases*.

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***Working Capital***

At December 31, 2012, we had working capital of \$491.7 million, compared to \$349.9 million at December 31, 2011. The increase in working capital at December 31, 2012 of \$141.8 million resulted from (1) an increase of \$75.7 million in cash and cash equivalents and short-term marketable investments as a result of the increase in sales and related collections of accounts receivable and a \$30.4 million reduction in investments in long-term securities; and (2) an increase of \$27.9 million in accounts receivable corresponding to a 25 percent increase in revenues when comparing sales for the quarter ended December 31, 2012 to the same quarter in 2011.

We have not entered into any short-term borrowing arrangements to fund our working capital requirements and have no current plans to do so. Debt that has been classified as current relates to the portion of long-term financing arrangements that will be due within one year. Furthermore, we do not maintain significant overseas cash balances, as the core of our operations and substantially all cash balances are held domestically. As such, we foresee no need and have no plans to repatriate any cash held overseas, and instead will retain such cash for use by our international subsidiaries to fund their operations.

In addition, at December 31, 2012, we had approximately \$305.3 million of long-term (meaning the security will mature more than one year from December 31, 2012) marketable securities that could be liquidated if necessary to fund our operations.

***Construction Projects***

In June 2012, we completed the expansion of our facility in Research Triangle Park, North Carolina (RTP Facility) to provide additional warehousing, packaging and office space at an approximate total cost of \$76.0 million, which consisted of construction costs and other related expenditures.

In March 2012, we completed the construction of an office building to serve as an extension of our Silver Spring facilities at an approximate total cost of \$66.0 million, which included construction costs and other costs necessary to place the building into operation.

During the year ended December 31, 2012, we spent approximately \$75.5 million related to these construction projects.

In June 2012, we acquired 132 acres of property containing approximately 703,000 square feet of building space in Research Triangle Park, North Carolina for future growth and development. We expect to begin preparing part of the property for development during the first half of 2013, to house research, development and production facilities relating to our regenerative medicine and engineered lung and lung tissue programs, as well as office space.

***Share Tracking Award Plans***

Awards granted under our STAP entitle participants to receive in cash the appreciation in our common stock, which is calculated as the increase in the closing price of our common stock between the date of grant and the date of exercise. Depending on the future price movements of our common stock, cash requirements associated with the exercise of awards could be significant. We review the potential future cash requirements of the STAP program annually. Based on our review, we can modify our operating budgets, the metrics used in determining the number of awards to be granted, or both. During the year ended December 31, 2012, we increased the number of available STAP awards by 3.8 million, primarily to accommodate anticipated grants under our long-term incentive bonus and compensation plan and a company-wide, one-time incentive grant of 1.9 million awards in January 2013. In addition, we announced on February 4, 2013 that our Board of Directors approved a



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1.4 million increase in the number of STAP awards to accommodate anticipated future grants of STAP awards under our long-term incentive bonus and compensation programs during 2013.

***Convertible Notes***

In October 2011, we issued \$250.0 million in aggregate principal value of our 2016 Convertible Notes. The 2016 Convertible Notes are unsecured, unsubordinated debt obligations that rank equally with all of our other unsecured and unsubordinated indebtedness. We pay interest semi-annually on March 15th and September 15th of each year. The initial conversion price is \$47.69 per share and the number of underlying shares used to determine the aggregate consideration upon conversion is approximately 5.2 million shares.

Conversion can occur: (1) any time after June 15, 2016; (2) during any calendar quarter that follows a calendar quarter in which the price of our common stock exceeds 130 percent of the conversion price for at least 20 days during the 30 consecutive trading-day period ending on the last trading day of the quarter; (3) during the ten consecutive trading-day period following any five consecutive trading-day period in which the trading price of the 2016 Convertible Notes is less than 95 percent of the closing price of our common stock multiplied by the then current number of shares underlying the 2016 Convertible Notes; (4) upon specified distributions to our shareholders; (5) in connection with certain corporate transactions; or (6) in the event that our common stock ceases to be listed on the NASDAQ Global Select Market, the NASDAQ Global Market, or the New York Stock Exchange, or any of their respective successors.

Upon conversion, holders of our 2016 Convertible Notes are entitled to receive: (1) cash equal to the lesser of the principal amount of the notes or the conversion value (the number of shares underlying the 2016 Convertible Notes multiplied by the then-current conversion price per share); and (2) to the extent the conversion value exceeds the principal amount of the notes, shares of our common stock. In the event of a change in control, as defined in the indenture under which the 2016 Convertible Notes have been issued, holders can require us to purchase all or a portion of their 2016 Convertible Notes for 100 percent of the principal amount plus any accrued and unpaid interest.

***Mortgage Financing***

In December 2010, we entered into a Credit Agreement with Wells Fargo Bank, National Association (Wells Fargo) and Bank of America, N.A., pursuant to which we obtained \$70.0 million in debt financing. The Credit Agreement has a forty-eight month term maturing in December 2014 and is secured by a first mortgage lien on our RTP Facility and our Silver Spring facility. Annual principal payments will be based on a twenty-five year amortization schedule using a fixed rate of interest of 7.0 percent; accordingly, we will owe the remaining principal balance of approximately \$66.6 million at maturity in December 2014. Outstanding debt will bear a floating rate of interest per annum based on the one month London Interbank Offer Rate (LIBOR), plus a credit spread of 3.75 percent, or approximately 4.0 percent as of December 31, 2012. Alternatively, we have the option to change the rate of interest charged on the loan to 2.75 percent plus the greater of: (1) Wells Fargo's prime rate, or (2) the federal funds effective rate plus 0.05 percent, or (3) LIBOR plus 1.0 percent. After June 30, 2012, we are permitted to prepay the loan balance without being subject to a prepayment premium or penalty.

The Credit Agreement subjects us to the following financial covenants: (1) a maximum consolidated leverage ratio of 2.5:1.00, calculated as the ratio of our consolidated indebtedness to "Consolidated EBITDA", which is defined as consolidated net income, adjusted for the following as applicable: (i) interest expense; (ii) income taxes; (iii) non-cash license fees; (iv) depreciation and amortization; (v) impairment charges; and (vi) share-based compensation (stock option and share tracking award expense), to be measured as of the last day of each fiscal quarter on a rolling four

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quarter basis; and (2) minimum liquidity of no less than \$150.0 million. Under the Credit Agreement, minimum liquidity is defined as the sum of our cash and cash equivalents, plus the fair value of our marketable investments as of the last day of a fiscal quarter less the sum of indebtedness that matures within the next twelve months and the liability related to vested STAP Awards in excess of \$50.0 million. In addition, the Credit Agreement subjects us to various customary negative covenants. As of December 31, 2012, we were in compliance with the preceding covenants.

***Share Repurchases***

In October 2011, our Board of Directors approved a share repurchase program authorizing up to \$300.0 million in aggregate repurchases of our common stock at our discretion, over the two-year period ending in October 2013 (Repurchase Program). In connection with the Repurchase Program, we paid \$212.0 million for an accelerated share repurchase agreement (ASR) entered into with Deutsche Bank AB London Branch in October 2011, pursuant to which we repurchased approximately 4.7 million shares of our common stock. In May 2012, we completed the Repurchase Program by acquiring approximately 2.0 million shares of our common stock at an aggregate cost of \$88.0 million.

In June 2012, our Board of Directors authorized the repurchase of up to an additional \$100.0 million of aggregate repurchases of our common stock (2012 Repurchase Program). The 2012 Repurchase Program became effective for a one-year period beginning July 31, 2012. In November 2012, we completed the 2012 Repurchase Program by acquiring approximately 2.0 million shares of our common stock at an aggregate cost of \$100.0 million.

On February 4, 2013, we announced that our Board of Directors authorized a new share repurchase program for up to \$420.0 million in aggregate repurchases of our common stock from time to time at our discretion (2013 Repurchase Program). Repurchases under the 2013 Repurchase Program may be made in the open market or in privately negotiated transactions. The 2013 Repurchase Program will become effective over a one-year period beginning on March 4, 2013 and will be funded by cash generated from operations and existing cash and short term marketable investments.

***Toray License Obligations***

Pursuant to a March 2007 amendment to our license agreement for the development of beraprost-MR, we issued 400,000 shares of our common stock to Toray. Toray has the right to request that we repurchase these shares at their issuance price of \$27.21 per share upon 30 days prior written notice. The July 2011 amendment to the license agreement carried forward the original terms relating to these shares. To date, Toray has not notified us that it intends to require us to repurchase these shares.

As part of the July 2011 amendment to our license, we agreed to pay Toray \$50.0 million in equal, non-refundable payments over a five-year period ending in 2015 in exchange for a reduction in royalty rates. As of December 31, 2012, the undiscounted outstanding balance of this obligation was \$30.0 million.

***Obligations Under License Agreements***

Under our existing license agreements, we are obligated to make royalty payments at a rate of ten percent of the net sales of Remodulin and Tyvaso once annual combined net sales of these products exceed \$25.0 million. In addition, we pay Lilly a five percent royalty on net sales of Adcirca.

We have entered into other license rights arrangements under which we are required to make milestone payments upon the achievement of certain developmental and commercialization objectives and royalty payments upon the commercialization of related licensed technology.

Table of Contents**Off-Balance Sheet Arrangements**

We do not have any off-balance sheet arrangements within the meaning of Item 303(a)(4) of Regulation S-K.

**Contractual Obligations**

At December 31, 2012, we had the following contractual obligations (in thousands):

	Total	Payments Due by Period			
		Less than 1 year	1-2 Years	3-5 Years	More than 5 Years
2016 Convertible Notes(1)	\$ 250,000	\$	\$	\$ 250,000	\$
Mortgage loans	71,656	1,313	66,739	3,604	
Obligations under construction commitments(2)	3,466	3,466			
Operating lease obligations	18,134	3,378	6,550	5,782	2,424
Obligations under the STAP(3)	55,617	48,246	5,121	2,250	
Obligations under the SERP(4)	46,743		24,289		22,454
Purchase commitments	36,928	16,928	20,000		
Milestone payments under license and acquisition agreements(5)	34,755	3,596	4,859	16,882	9,418
<b>Total(6)</b>	<b>\$ 517,299</b>	<b>\$ 76,927</b>	<b>\$ 127,558</b>	<b>\$ 278,518</b>	<b>\$ 34,296</b>

- (1) Assumes payment in cash of the principal balance of our 2016 Convertible Notes at the contractual maturity date.
- (2) Represents total contractual expenditures for our construction projects at December 31, 2012.
- (3) Estimated based on the intrinsic value of outstanding STAP awards expected to vest as of December 31, 2012, assuming that awards will be exercised immediately upon vesting. Refer to Note 7 *Share Tracking Award Plans* to our consolidated financial statements included in this Annual Report on Form 10-K for further details.
- (4) Consists of actuarially derived, estimated future payouts of benefits. Refer to Note 12 *Employee Benefit Plans Supplemental Executive Retirement Plan* to our consolidated financial statements included in this Annual Report on Form 10-K for further details.
- (5) Based on our estimates of the timing and probability of achieving milestones specified under our various license and acquisition agreements.
- (6) As of December 31, 2012, we had \$1.5 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.

**Summary of Critical Accounting Policies and Estimates**

We prepare our consolidated financial statements in conformity with generally accepted accounting principles in the United States (GAAP). GAAP requires that we make estimates and assumptions that affect the amounts reported in our consolidated financial statements. As additional information becomes available, these estimates and assumptions may change and materially impact reported amounts. We have identified the following accounting policies, which require the use of our judgment and estimation in their application. We consider these policies to be critical because of the degree of judgment that is inherent in their application.

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***Revenue Recognition***

*Remodulin and Tyvaso*

We sell both Remodulin and Tyvaso to our specialty pharmaceutical distributors under similar contractual arrangements. Sales of Remodulin and Tyvaso are recognized when title and risk of ownership pass to our distributors upon satisfactory delivery to our distributors' facilities i.e., when all of our performance obligations under these distributor arrangements have been satisfied. We record sales of Remodulin and Tyvaso net of: (1) estimated rebates, (2) prompt payment discounts and (3) service fees to our distributors. Determining sales allowances involves the use of significant estimates and judgment and may involve the use of information from external sources.

We derive our provisions for rebates from an analysis of historical levels of rebates to both state Medicaid agencies and commercial third-party payers by product, relative to sales of each product. In formulating our estimates, we also consider the impact of anticipated changes in product prices, sales trends and government rebate programs, particularly as they relate to eligibility requirements and/or rebate pricing. We analyze rebate data separately for Remodulin and Tyvaso, as these therapies have been developed to treat PAH patients at different stages in the disease continuum and therefore, rebate eligibility and pricing requirements can differ for each therapy.

We estimate prompt pay discounts based on observed payment behavior. Our distributors have routinely taken advantage of these discounts and we expect them to continue to do so.

We pay our distributors for services rendered based on contractual rates applied to estimated units of service provided for a given financial reporting period.

Our distributors do not have return rights; however, we provide exchange rights in the event that product is damaged during shipment, or expires. Exchanges for damaged product are highly infrequent. In the event that Remodulin or Tyvaso has been damaged during shipment and we have been promptly notified as required under our distributor arrangements, we do not recognize revenue on that shipment until damaged product has been replaced. Replacement generally occurs within several days after we are notified of the damage. The number of product exchanges due to expiration has been minimal because at any given time, we sell Remodulin and Tyvaso with expiration dates in excess of one year and our distributors typically carry a thirty- to sixty-day supply of related inventories at any given time. In addition, we do not require, nor do we provide incentives for our distributors to assume inventory levels of Remodulin or Tyvaso beyond what would be considered reasonable and customary in the ordinary course of business and closely monitor inventory levels in the distribution channels.

The financial effects of exchange rights for Remodulin and Tyvaso have been immaterial and we expect the volume of exchanges to be consistent with historical levels. Specifically, exchanges for Remodulin and Tyvaso have comprised significantly less than one percent of the volume of units we sell. Because historical and anticipated future exchanges of Remodulin and Tyvaso have been, and are expected to be, immaterial, we do not recognize a reserve for estimated exchange rights in the period of sale. Lastly, we closely monitor exchange data for both of these therapies to ensure that our assumptions continue to be reasonable, appropriate and current.

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*Adcirca*

Adcirca is manufactured for us by Lilly and distributed through Lilly's pharmaceutical wholesaler network. Specifically, Lilly handles all of the administrative functions associated with the sale of Adcirca on our behalf, including the receipt and processing of customer purchase orders, shipment of Adcirca to customers, and the invoicing and collection of customer payments. In addition, sales terms for Adcirca include return rights that extend throughout the distribution channel. We recognize sales of Adcirca on a gross basis (net of allowances) upon delivery to customers due to the following factors: (1) we are responsible for the acceptability of the product purchased by wholesalers; (2) we bear all inventory risk, as title and risk of loss pass to us at the shipping point from Lilly's manufacturing facility; (3) we assume credit risk if Lilly is unable to collect amounts due from customers; and (4) we assume the risk and cost of a product recall, if required.

We recognize sales of Adcirca net of: (1) estimated rebates (including discounts required under Medicare Part D); (2) prompt pay discounts; (3) allowances for product returns; and (4) wholesaler fees. We estimate our liability for rebates based on an analysis of historical levels of rebates to both Medicaid and commercial third-party payers. In addition, we determine our obligation for prescription drug discounts required for Medicare Part D patients within the coverage gap based on estimations of the number of Medicare Part D patients and the period such patients will remain within the coverage gap. We base our estimates for prompt pay discounts on observed customer payment behavior and expectations regarding the future utilization of such discounts. We derive estimates relating to the allowance for returns from published industry data specific to specialty pharmaceuticals and will continue to do so until we have sufficient historical data on which to base our allowance. In addition, we compare patient prescription data for Adcirca to sales of Adcirca on a quarterly basis to ensure a reasonable relationship between prescription and sales trends. To date, we have not identified any unusual patterns in the volume of prescriptions relative to sales that would warrant reconsideration of, or adjustment to, the methodology we currently employ to estimate our allowance for returns. Lastly, wholesaler fees are based on contractual percentages of wholesalers' sales.

*Share-based Compensation*

Our share-based awards are classified as either equity (stock options, stock purchases made under our employee stock purchase plan) or as liabilities (STAP awards), and we recognize related share-based compensation expense based on the fair value of awards. We estimate the fair value of all share-based 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.

*Marketable Investments*

Substantially all of our marketable securities are classified as held-to-maturity. For marketable investments in which the fair value is lower than the carrying value, we periodically review whether related impairments of these securities are other than temporary. This review requires us to make judgments, particularly as they relate to: (1) the extent and duration of a decline in the fair value of a security; (2) the probability, extent and timing of a recovery of a security's value; (3) our assessment as to whether it is more likely than not that we will be required to sell a security prior to recovery of its amortized cost; and (4) our estimation of the present value of the cash flows we would expect to collect that are attributable to an impaired debt security to determine whether a credit loss exists. The scope of this evaluation requires forward-looking assessments pertaining to a security and the relevant financial markets, an issuer's financial condition and business outlook, and our estimation of the value of cash flows we would expect to collect from an issuer upon maturity of an impaired security.

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Accordingly, we must make assessments regarding current conditions and future events, which involve a considerable degree of uncertainty and judgment. When we determine that the decline in value of a security is other than temporary, we are required to recognize the credit loss portion as a charge in our consolidated statement of operations.

In addition, we classify substantially all of our 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 debt securities that mature within two years.

***Fair Value Measurements***

We are required to disclose assets and liabilities subject to fair value measurements within a specified fair value hierarchy. The fair value 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 fair value hierarchy, in their entirety, based on the lowest level input that is significant to the related fair value measurement. Determining where a particular asset or liability should be disclosed within the hierarchy involves judgment regarding the significance of inputs relative to a fair value measurement and where such inputs lie within the hierarchy. Furthermore, assets and liabilities that are not actively traded may have little or no price transparency. As such, estimating the fair value of Level 3 assets and liabilities involves the use of significant subjective assumptions that we believe market participants would consider in pricing. We often employ a discounted cash flow model to help us estimate the fair value of our Level 3 assets and liabilities. Inputs to the model that involve a significant degree of judgment include estimating the amounts and timing of expected cash flows and determining a suitable discount rate.

***Income Taxes***

Income taxes are accounted for in accordance with the asset and liability method. 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 are reduced by a valuation allowance when, in our opinion, it is more likely than not that some or all of the deferred tax assets will not be realized. Evaluating the realizability of deferred assets requires us to review forecasts of earnings and taxable income, among other considerations. Accordingly, the evaluation process as it relates to the realizability of deferred tax assets requires us to make significant judgments and forward-looking assessments regarding the amounts and availability of future taxable income.

Financial statement recognition of a tax position taken or expected to be taken in a tax return is determined based on a more likely than not threshold of that position being sustained. If the tax position meets this threshold, the benefit to be recognized is measured as the largest amount that is more than 50 percent likely to be realized upon ultimate settlement. Accounting for uncertain tax positions involves considerable judgment in assessing the future tax consequences of amounts that have been recognized in our financial statements or tax returns. The ultimate resolution of uncertain tax positions could result in amounts different from those recognized in our consolidated financial statements.

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***Intangible Assets and Goodwill***

In connection with transactions that we account for as business combinations, we typically recognize intangible assets, based on their acquisition-date fair value, and goodwill, representing the excess of the fair value of the consideration transferred, over the estimated fair value of assets acquired and liabilities assumed. Measuring the acquisition-date fair value of intangible assets involves the use of significant judgment and estimates with respect to determining, among other inputs: (1) the timing and amounts of cash flows and operating profits for potential product candidates; (2) the timing and probability of regulatory approvals for product candidates under development; (3) the useful lives of potential product candidates; and (4) appropriate discount rates.

We are required to test goodwill for impairment annually or more frequently if impairment indicators exist. Evaluating goodwill for impairment requires judgment particularly as it relates to determining the fair value of a reporting unit to which goodwill has been assigned. We often use a discounted cash flow model to test goodwill for impairment, which involves the use of significant and subjective inputs. Inputs requiring our judgment include, among others, the estimation of the amounts and timing of future cash flows, future growth rates and profitability of a reporting unit. Changes in our business strategy or adverse changes in market conditions could impact impairment analyses and require the recognition of an impairment charge equal to the excess of the carrying value of goodwill over its implied fair value.

We test our finite-lived intangible assets for impairment when conditions suggest that their carrying values may not be recoverable. Evaluating intangible assets for impairment requires judgment, particularly when determining amounts of undiscounted cash flows used in assessing recoverability and measuring the fair value of such assets, if necessary. These projections require forward-looking assumptions that may include, among others, estimates of future growth, discount rates and future business or industry conditions. Changes in our business strategy or adverse changes in market conditions could indicate one or more finite-lived intangible assets have been impaired. Therefore, we would be initially required to test such assets for recoverability. If determined unrecoverable, we would recognize an impairment charge equal to the extent the carrying value of such assets exceed their fair value.

***Pension Benefit Obligation***

Accounting for our SERP requires that we recognize in 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 judgment 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 underlying the valuation is the discount rate. The discount rate should be representative of the rate associated with high-quality, fixed-income debt securities. With the prevailing economic conditions and outlook and the tightening of the credit markets that began in 2008, interest rates, in general, have continued to decline. We must consider these economic factors when determining an appropriate discount rate to employ. Consequently, the discount rate we use to measure our obligation has decreased. Changes in the discount rate can significantly increase or decrease our SERP obligation. For instance, a reduction in the discount rate would increase our projected benefit obligation and result in an actuarial loss. Consequently, we could be required to recognize additional pension expense in our consolidated statements of operations related to the actuarial loss in future periods if certain thresholds are met. Other actuarial assumptions include participant demographics such as the expected rate of salary increases and withdrawal rates, among other factors. Not only can actual experience differ from actuarial assumptions, but changes in any of these assumptions can also materially affect the measurement of the SERP obligation.

Table of Contents**Recently Issued Accounting Standards**

In June 2011, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) No. 2011-05, *Comprehensive Income (Topic 220) Presentation of Comprehensive Income* (ASU 2011-05). ASU 2011-05 eliminates the option to present the components of other comprehensive income as part of the statement of changes in stockholders' equity. Instead, ASU 2011-05 requires entities to report all non-owner changes in stockholders' equity in either a single continuous statement of comprehensive income, or in two separate, but consecutive statements. ASU 2011-05 does not change the items that must be reported in other comprehensive income, or when an item must be reclassified to net income. In December 2011, the FASB issued ASU 2011-12, *Comprehensive Income (Topic 220): Presentation of Comprehensive Income Deferral of the Effective Date for Amendments to the Presentation of Reclassifications of Items Out of Accumulated Other Comprehensive Income in Accounting Standards Update No. 2011-05* (ASU 2011-12). ASU 2011-12 defers indefinitely provisions contained in ASU 2011-05 that revise existing presentation requirements for reclassification adjustments from comprehensive income as the FASB further deliberates this issue. During the deferral period, reporting entities will continue to follow existing guidance prior to ASU 2011-05 under ASC Topic 220, *Comprehensive Income*, with respect to the disclosure of reclassifications adjustments. Both ASU 2011-12 and ASU 2011-05 are effective for fiscal years, and interim periods within those years, beginning after December 15, 2011, and ASU 2011-05 requires retrospective application. Other than the presentational changes to our basic consolidated financial statements required under ASU 2011-05 (as amended by ASU 2011-12), adoption of ASU 2011-05 did not have any impact on our consolidated financial statements.

In February 2013, the FASB issued ASU No. 2013-02, *Comprehensive Income (Topic 220) Reporting Amounts Reclassified Out of Accumulated Other Comprehensive Income* (ASU 2013-02). ASU 2013-02 provides guidance about disclosing reclassification adjustments, which was previously deferred for further deliberation by ASU 2011-12. ASU 2013-02 provides financial statement issuers the option to disclose significant amounts reclassified from accumulated other comprehensive income separately by each component in either (1) a single note to the financial statements, or (2) parenthetically on the face of the income statement for each line item(s) affected by the reclassification adjustment. ASU 2013-02 will be effective for all interim and annual financial statement reporting periods beginning after December 15, 2012, with early adoption permitted. We do not anticipate the adoption of ASU 2013-02 will have any impact on our consolidated financial statements.

**ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

As of December 31, 2012, we have invested \$630.4 million in debt securities issued by corporations and federally sponsored agencies. The market value of these investments varies inversely with changes in current market interest rates. In general, as interest rates increase, the market value of a debt investment would be expected to decrease. Conversely, as interest rates decrease, the market value of a debt investment would be expected to increase. To address market risk, we invest in debt securities that mature within two years and hold these investments to maturity so that they can be redeemed at their stated or face value. At December 31, 2012, our investments in debt securities issued by corporations and federally-sponsored agencies had a weighted average stated interest rate of approximately 0.40 percent and a weighted average maturity of 1.0 year. These investments mature at various times through 2014 and many are callable annually.

During sustained periods of instability and uncertainty in the financial markets, we could be exposed to additional investment-related risks that could materially affect the value and liquidity of our investments. In light of these risks, we actively monitor market conditions and developments specific to the securities and security classes in which we invest. We believe that we maintain a conservative investment approach in that we invest exclusively in unstructured, highly-rated securities with relatively short maturities that we believe reduce our exposure to undue risks. While we believe we take prudent measures to mitigate investment related risks, such risks cannot be fully eliminated, as circumstances can occur that are beyond our control.



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**ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA**

**UNITED THERAPEUTICS CORPORATION  
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS**

<u>Report of Independent Registered Public Accounting Firm</u>	<u>F-2</u>
<u>Report of Independent Registered Public Accounting Firm on Internal Control over Financial Reporting</u>	<u>F-3</u>
<u>Consolidated Balance Sheets as of December 31, 2012 and 2011</u>	<u>F-4</u>
<u>Consolidated Statements of Operations for the years ended December 31, 2012, 2011 and 2010</u>	<u>F-5</u>
<u>Consolidated Statements of Stockholders' Equity for the years ended December 31, 2012, 2011 and 2010</u>	<u>F-7</u>
<u>Consolidated Statements of Cash Flows for the years ended December 31, 2012, 2011 and 2010</u>	<u>F-8</u>
<u>Notes to Consolidated Financial Statements</u>	<u>F-9</u>

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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, 2012 and 2011, and the related consolidated statements of operations, comprehensive income, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2012. 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, 2012 and 2011, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2012, 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.

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, 2012, 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, 2013 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

McLean, Virginia  
February 26, 2013

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**Report of Independent Registered Public Accounting Firm on  
Internal Control over Financial Reporting**

The Board of Directors and Shareholders  
United Therapeutics Corporation

We have audited United Therapeutics Corporation's internal control over financial reporting as of December 31, 2012, based on criteria established in Internal Control Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (the COSO criteria). United Therapeutics Corporation's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying *Management's Report on Internal Control Over Financial Reporting*. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

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

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

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

In our opinion United Therapeutics Corporation maintained, in all material respects, effective internal control over financial reporting as of December 31, 2012, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the 2012 consolidated financial statements of United Therapeutics Corporation, and our report dated February 26, 2013, expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

McLean, Virginia  
February 26, 2013

Table of Contents**UNITED THERAPEUTICS CORPORATION****Consolidated Balance Sheets****(In thousands, except share and per share data)**

	<b>December 31,</b>	
	<b>2012</b>	<b>2011</b>
<b>Assets</b>		
Current assets:		
Cash and cash equivalents	\$ 154,030	\$ 162,676
Marketable investments	325,175	240,803
Accounts receivable, net of allowance of none for 2012 and 2011	116,626	88,680
Other current assets	3,778	6,188
Prepaid expenses	17,053	9,928
Inventories, net	37,254	45,981
Deferred tax assets	14,554	8,199
<b>Total current assets</b>	<b>668,470</b>	<b>562,455</b>
Marketable investments	305,726	343,899
Marketable investments and cash restricted	5,377	5,123
Goodwill and other intangible assets, net	16,408	22,087
Property, plant, and equipment, net	453,685	366,046
Deferred tax assets, net	150,147	190,745
Other assets	26,782	27,724
<b>Total assets</b>	<b>\$ 1,626,595</b>	<b>\$ 1,518,079</b>
<b>Liabilities and Stockholders' Equity</b>		
Current liabilities:		
Accounts payable	\$ 10,203	\$ 47,257
Accrued expenses	72,985	57,227
Other current liabilities	93,567	108,093
<b>Total current liabilities</b>	<b>176,755</b>	<b>212,577</b>
Convertible notes	204,667	194,180
Mortgages payable	70,343	71,452
Other liabilities	79,967	80,500
<b>Total liabilities</b>	<b>531,732</b>	<b>558,709</b>
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, 245,000,000 shares authorized, 62,082,007 and 61,506,063 shares issued, and 50,165,953 and 53,609,645 shares outstanding at December 31, 2012 and 2011, respectively	621	615
Additional paid-in capital	1,015,835	992,718
Accumulated other comprehensive loss	(14,957)	(10,885)
Treasury stock at cost, 11,916,054 and 7,896,418 shares at December 31, 2012 and 2011, respectively	(470,998)	(282,998)
Retained earnings	553,480	249,038
<b>Total stockholders' equity</b>	<b>1,083,981</b>	<b>948,488</b>

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Total liabilities and stockholders' equity	\$ 1,626,595	\$ 1,518,079
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See accompanying notes to consolidated financial statements.

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Table of Contents**UNITED THERAPEUTICS CORPORATION****Consolidated Statements of Operations****(In thousands, except per share data)**

	Year Ended December 31,		
	2012	2011	2010
<b>Revenues:</b>			
Net product sales	\$ 906,123	\$ 741,094	\$ 591,702
Other	9,953	2,089	1,197
<b>Total revenue</b>	<b>916,076</b>	<b>743,183</b>	<b>592,899</b>
<b>Operating expenses:</b>			
Research and development	173,387	180,015	165,306
Selling, general and administrative	201,746	156,482	188,606
Cost of product sales	119,297	88,904	67,674
<b>Total operating expenses</b>	<b>494,430</b>	<b>425,401</b>	<b>421,586</b>
<b>Operating income</b>	<b>421,646</b>	<b>317,782</b>	<b>171,313</b>
<b>Other (expense) income:</b>			
Interest income	3,941	3,450	2,939
Interest expense	(16,639)	(21,367)	(19,710)
Equity loss in affiliate	(143)	(119)	(160)
Other, net	31,866	(629)	769
<b>Total other (expense) income, net</b>	<b>19,025</b>	<b>(18,665)</b>	<b>(16,162)</b>
<b>Income from continuing operations before income taxes</b>	<b>440,671</b>	<b>299,117</b>	<b>155,151</b>
Income tax expense	(136,229)	(81,874)	(43,945)
<b>Income from continuing operations</b>	<b>304,442</b>	<b>217,243</b>	<b>111,206</b>
<b>Discontinued operations</b>			
Income (loss) from discontinued operations, net of tax		7	(5,290)
Gain on disposal of discontinued operations, net of tax		618	
<b>Income (loss) from discontinued operations</b>		<b>625</b>	<b>(5,290)</b>
<b>Net income</b>	<b>\$ 304,442</b>	<b>\$ 217,868</b>	<b>\$ 105,916</b>
<b>Net income per common share:</b>			
<b>Basic</b>			
Continuing operations	\$ 5.84	\$ 3.80	\$ 1.98
Discontinued operations		0.01	(0.09)
<b>Net income per basic common share</b>	<b>\$ 5.84</b>	<b>\$ 3.81</b>	<b>\$ 1.89</b>
<b>Diluted</b>			
Continuing operations	\$ 5.71	\$ 3.66	\$ 1.87
Discontinued operations		0.01	(0.09)
<b>Net income per diluted common share</b>	<b>\$ 5.71</b>	<b>\$ 3.67</b>	<b>\$ 1.78</b>

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Weighted average number of common shares outstanding:

Basic	52,093	57,163	56,142
Diluted	53,280	59,395	59,516

See accompanying notes to consolidated financial statements.

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**UNITED THERAPEUTICS CORPORATION**  
**CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME**

(In thousands)

	Year Ended December 31,		
	2012	2011	2010
Net income	\$ 304,442	\$ 217,868	\$ 105,916
Other comprehensive loss:			
Foreign currency translation gain (loss)	691	(1,709)	(642)
Defined benefit pension plan:			
Prior service cost arising during period, net of tax		(1,010)	(3,374)
Actuarial (loss) gain arising during period, net of tax	(5,352)	431	(1,203)
Less: amortization of actuarial gain (loss) and prior service cost included in net periodic pension cost	522	572	224
Defined benefit pension plan, net	(4,830)	(7)	(4,353)
Unrealized gain on available-for-sale securities, net of tax	67	6	134
Other comprehensive loss, net of tax	(4,072)	(1,710)	(4,861)
Comprehensive income	\$ 300,370	\$ 216,158	\$ 101,055

See accompanying notes to consolidated financial statements.

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Table of Contents**UNITED THERAPEUTICS CORPORATION****Consolidated Statements of Stockholders' Equity****(In thousands, except share data)**

	Common Stock		Additional	Accumulated	Treasury	Retained	Stockholders'
	Shares	Amount	Paid-in	Other	Stock	Earnings	Equity
			Capital	Comprehensive		(Deficit)	
				Income/(Loss)			
Balance, December 31, 2009	56,682,369	\$ 567	\$ 798,897	\$ (4,314)	\$ (67,395)	\$ (74,746)	\$ 653,009
Net income						105,916	105,916
Foreign currency translation adjustments				(642)			(642)
Unrealized gain on available-for-sale securities				134			134
Defined benefit plan				(4,353)			(4,353)
Conversion of convertible notes	63		3		(4)		(1)
Exercise of stock options	3,335,114	33	83,313				83,346
Tax benefit from exercises of non-qualified stock options			23,826				23,826
Share-based compensation			22,651				22,651
Balance, December 31, 2010	60,017,546	600	928,690	(9,175)	(67,399)	31,170	883,886
Net income						217,868	217,868
Foreign currency translation adjustments				(1,709)			(1,709)
Unrealized gain on available-for-sale securities				6			6
Defined benefit plan				(7)			(7)
Shares received upon sale of subsidiary					(2,750)		(2,750)
Conversion of 2011 convertible notes and exercise of convertible note hedge	650,827	7	27,287		(27,294)		
Issuance of 2016 convertible notes			56,192				56,192
2016 convertible note hedge and warrants, net of tax			(29,069)				(29,069)
Repurchase of shares			(26,211)		(185,555)		(211,766)
Exercise of stock options	837,690	8	23,955				23,963
Tax benefit from exercises of non-qualified stock options			11,347				11,347
Share-based compensation			527				527
Balance, December 31, 2011	61,506,063	615	992,718	(10,885)	(282,998)	249,038	\$ 948,488
Net income						304,442	304,442
Foreign currency translation adjustments				691			691
Unrealized gain on available-for-sale securities				67			67
Defined benefit plan				(4,830)			(4,830)
Repurchase of shares					(188,000)		(188,000)
Exercise of stock options	575,944	6	16,799				16,805
Tax benefit from exercises of non-qualified stock options			3,054				3,054
Share-based compensation			3,264				3,264
Balance, December 31, 2012	62,082,007	\$ 621	\$ 1,015,835	\$ (14,957)	\$ (470,998)	\$ 553,480	\$ 1,083,981

See accompanying notes to consolidated financial statements.

Table of Contents**UNITED THERAPEUTICS CORPORATION****Consolidated Statements of Cash Flows****(In thousands)**

	<b>Year Ended December 31,</b>		
	<b>2012</b>	<b>2011</b>	<b>2010</b>
<b>Cash flows from operating activities:</b>			
Net income	\$ 304,442	\$ 217,868	\$ 105,916
<b>Adjustments to reconcile net income to net cash provided by operating activities:</b>			
Depreciation and amortization	27,145	20,535	17,920
Provisions for inventory obsolescence	11,829	5,180	2,398
Share-based compensation expense (benefit)	30,115	(15,715)	113,942
Impairments	6,804		7,688
Expense associated with outstanding license fees	1,210	37,049	
Amortization of debt discount and issue costs	11,064	19,359	16,839
Current and deferred tax expense	136,229	81,432	41,923
Amortization of discount or premium on investments	4,604	4,474	2,574
Equity loss in affiliate and other	1,432	2,614	967
Excess tax benefits from share-based compensation	(3,054)	(11,347)	(23,826)
<b>Changes in assets and liabilities:</b>			
Accounts receivable	(23,991)	(16,158)	(23,452)
Inventories	(5,933)	(16,055)	(9,196)
Prepaid expenses	(7,351)	(2,107)	(587)
Other assets	(2,354)	(3,626)	(4,776)
Accounts payable	(37,207)	16,656	(2,734)
Accrued expenses	14,403	3,595	25,612
Other liabilities	(145,759)	(93,559)	(59,676)
<b>Net cash provided by operating activities</b>	<b>323,628</b>	<b>250,195</b>	<b>211,532</b>
<b>Cash flows from investing activities:</b>			
Purchases of property, plant and equipment	(111,905)	(35,977)	(18,640)
Purchases of held-to-maturity investments	(579,316)	(815,684)	(662,225)
Maturities of held-to-maturity investments	527,858	733,876	421,528
Sales of trading investments			36,200
Acquisitions		(3,547)	
Restrictions on cash		(1)	13,901
<b>Net cash used in investing activities</b>	<b>(163,363)</b>	<b>(121,333)</b>	<b>(209,236)</b>
<b>Cash flows from financing activities:</b>			
Principal payments of debt	(999)	(251,039)	
Proceeds received from issuance of debt		250,000	70,000
Payments of transaction costs related to issuance of debt		(7,535)	(1,055)
Payment for convertible note hedge and warrants, net		(33,250)	
Payment of lease obligation			(31,442)
Payments to repurchase common stock	(188,000)	(212,000)	
Proceeds from exercise of stock options	16,805	24,398	85,427
Excess tax benefits from share-based compensation	3,054	11,347	23,826
<b>Net cash (used in) provided by financing activities</b>	<b>(169,140)</b>	<b>(218,079)</b>	<b>146,756</b>
Effect of exchange rate changes on cash and cash equivalents	229	(269)	2,758
Net (decrease) increase in cash and cash equivalents	(8,646)	(89,486)	151,810
Cash and cash equivalents, beginning of year	162,676	252,162	100,352

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Cash and cash equivalents, end of year	\$ 154,030	\$ 162,676	\$ 252,162
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**Supplemental cash flow information:**

Cash paid for interest	\$ 5,302	\$ 4,103	\$ 1,818
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Cash paid for income taxes	\$ 101,505	\$ 46,510	\$ 22,683
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Non-cash investing and financing activities:

Acquisitions non-cash consideration	\$	\$ 5,873	\$
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Non-cash additions to property, plant and equipment	\$ 1,820	\$ 23,063	\$ 2,445
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Issuance of common stock upon conversion of convertible notes	\$	\$ 27,294	\$
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Assumption of mortgage in connection with the acquisition of property	\$	\$ 3,736	\$
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See accompanying notes to consolidated financial statements.

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**UNITED THERAPEUTICS CORPORATION**

**Notes to Consolidated Financial Statements**

**1. Organization and Business Description**

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 conditions.

Our lead product, Remodulin® (treprostinil) Injection (Remodulin), was first approved for the treatment of pulmonary arterial hypertension (PAH) in 2002 by the United States Food and Drug Administration (FDA) and has also been approved for use in countries outside of the United States. We sell Remodulin in the United States and in various other countries around the world. In 2009, we received FDA approval for Tyvaso® (treprostinil) Inhalation Solution (Tyvaso) and Adcirca® (tadalafil) tablets (Adcirca), both of which we market in the United States for the treatment of PAH.

**2. Summary of Significant Accounting Policies**

*Basis of Presentation and Principles of Consolidation*

The accompanying consolidated financial statements of United Therapeutics and its wholly owned subsidiaries have been prepared in accordance with accounting principles generally accepted in the United States (GAAP). All intercompany balances and transactions have been eliminated in consolidation. On March 31, 2011, we sold our wholly-owned telemedicine subsidiary, Medicomp, Inc. (Medicomp). Accordingly, the operating results of Medicomp for each of the two years in the period ended December 31, 2011 have been reclassified and presented within discontinued operations on our consolidated statements of operations. This change in presentation had no impact on net income as previously reported. We did not recast our consolidated statements of cash flows for the years ended December 31, 2011 and 2010 to reflect the classification of Medicomp as a discontinued operation as the impact is not significant to those statements (refer to Note 17 *Sale of Medicomp, Inc.*).

*Use of Estimates*

The preparation of the consolidated financial statements in accordance with GAAP requires our 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. We base our estimates on assumptions regarding historical experience, currently available information and anticipated developments that we believe are reasonable and appropriate. However, because the use of estimates involves an inherent degree of uncertainty, actual results could differ from those estimates. Our significant accounting policies that require use of subjective and/or complex judgment and estimates impact the following financial statement areas: revenue recognition, share-based compensation, marketable investments, fair value measurements (including those relating to our acquisitions), income taxes, goodwill and other intangible assets, and obligations related to our Supplemental Executive Retirement Plan.

*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 our marketable investments and 1.0% Convertible Senior Notes due September 15, 2016 (2016 Convertible Notes) are reported in Notes 4 *Marketable Investments* and 5 *Fair Value Measurements*, respectively. The recorded value of our \$70.0 million mortgage loan approximates its fair value as it bears a variable

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**UNITED THERAPEUTICS CORPORATION**

**Notes to Consolidated Financial Statements (Continued)**

**2. Summary of Significant Accounting Policies (Continued)**

rate of interest that we believe approximates the market rate of interest for debt with similar credit risk profiles, terms and maturities. Refer to Note 8 *Debt Mortgage Financing Wells Fargo*.

***Fair Value Measurements***

Fair value is a market-based measurement, not an entity-specific measurement. The objective of a fair value measurement is to estimate the price to sell an asset or transfer a liability in an orderly transaction between market participants at the measurement date under current market conditions. Such transactions to sell an asset or transfer a liability are assumed to occur in the principal market for that asset or liability, or in the absence of the principal market, the most advantageous market for the asset or liability.

Assets and liabilities subject to fair value measurement disclosures are required to be classified according to a three-level fair value hierarchy with respect to the inputs (or assumptions) used to determine fair value. Observable inputs such as unadjusted quoted market prices for identical assets or liabilities are given the highest priority within the hierarchy (Level 1). When observable inputs are unavailable, the use of unobservable inputs is permitted i.e., inputs that a reporting entity believes market participants would use in pricing that are developed based on the best information available. Unobservable inputs are given the lowest priority within the hierarchy (Level 3). The level in which an asset or liability is disclosed within the fair value hierarchy is based on the lowest level input that is significant to the related fair value measurement in its entirety. The guidance under the fair value measurement framework applies to other existing accounting guidance in the Financial Accounting Standard Board (FASB) codification that requires or permits fair value measurements. Refer to related disclosures at Note 5 *Fair Value Measurements* to these consolidated financial statements.

***Cash Equivalents***

Cash equivalents consist of highly liquid investments with maturities of three months or less from the date of acquisition and include money market funds, commercial paper, and certificates of deposit.

***Marketable Investments***

Substantially all of our marketable investments are debt securities that we classify as held-to-maturity because of our positive intent and ability to hold the securities until maturity. Held-to-maturity securities are classified as either current or non-current assets on our consolidated balance sheets based on their contractual maturity dates and recorded at amortized cost, adjusted for the amortization of discounts or premiums. Related discounts and premiums are amortized over the term of these securities as an adjustment to yield using the effective interest method.

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 attributable to the estimated credit loss. In determining whether a decline in the value of an investment is other-than-temporary, we evaluate currently available factors that may include, among others: (1) general market conditions, (2) the duration and extent to which fair value has been less than the carrying value, (3) the investment issuer's financial condition and business outlook, and (4) our assessment as to whether it is more likely than not that we will be required to sell a security prior to recovery of its amortized cost basis.

Table of Contents**UNITED THERAPEUTICS CORPORATION****Notes to Consolidated Financial Statements (Continued)****2. Summary of Significant Accounting Policies (Continued)*****Trade Receivables***

Trade receivables consist of short-term amounts due from customers and are stated at the amount we expect to collect. We establish an allowance for doubtful accounts, if any, based on our assessment of the collectability of specific customer accounts.

***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):

	<b>December 31,</b>	
	<b>2012</b>	<b>2011</b>
Raw materials	\$ 13,603	\$ 9,171
Work in progress	11,708	14,222
Finished goods	11,943	22,588
Total inventories(1)	\$ 37,254	\$ 45,981

(1)

During the year ended December 31, 2012, we increased our reserves for obsolescence by \$8.9 million which represents the cost of the nebulizer incorporated into our Tyvaso Inhalation System expected to be rendered obsolete based on the pending commercial release in 2013 of our improved nebulizer, the TD-100.

***Goodwill and Other Intangible Assets***

The carrying amount of goodwill is not amortized but is subject to annual impairment testing. We evaluate goodwill for impairment during the fourth quarter of each year, 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 (Step 1 of the goodwill impairment test). If the carrying amount of a reporting unit exceeds its fair value, then the amount of an impairment loss, if any, is measured as the excess of the carrying amount of goodwill over its implied fair value (Step 2 of the goodwill impairment test).

In February 2011, we entered into an agreement to sell our wholly-owned subsidiary, Medicomp, Inc. (Medicomp). Based on the estimated fair value of the purchase consideration, we wrote off the carrying value of Medicomp's goodwill at December 31, 2010 and recognized a related impairment charge of \$6.2 million, which has been included within the results of discontinued operations on our consolidated statement of operations for the year ended December 31, 2010.

Intangible assets subject to amortization are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an intangible asset may not be recoverable. Impairment losses are measured and recognized to the extent the carrying value of such assets exceed their fair values.

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## UNITED THERAPEUTICS CORPORATION

## Notes to Consolidated Financial Statements (Continued)

## 2. Summary of Significant Accounting Policies (Continued)

Goodwill and other intangible assets comprise the following (in thousands):

	As of December 31, 2012			As of December 31, 2011		
	Gross	Accumulated Amortization	Net	Gross	Accumulated Amortization	Net
Goodwill(1)	\$ 10,530	\$	\$ 10,530	\$ 8,123	\$	\$ 8,123
Other intangible assets(1):						
Technology, patents and tradenames	4,859	(2,825)	2,034	4,766	(1,999)	2,767
Customer relationships and non-compete agreements	4,749	(2,232)	2,517	4,653	(1,658)	2,995
Contract-based(2)	2,020	(693)	1,327	8,350	(148)	8,202
Total	\$ 22,158	\$ (5,750)	\$ 16,408	\$ 25,892	\$ (3,805)	\$ 22,087

(1) Includes foreign currency translation adjustments.

(2) Refer to Note 16 *Acquisitions Revivicor, Inc.*

We are amortizing other intangible assets over an estimated weighted average life of 6.5 years. Related amortization expense for the years ended December 31, 2012, 2011 and 2010, was \$2.1 million, \$1.7 million and \$1.6 million, respectively. As of December 31, 2012, aggregate amortization expense relating to intangible assets for each of the five succeeding years and thereafter is estimated as follows (in thousands):

Year Ended December 31,	
2013	\$ 1,957
2014	1,540
2015	1,185
2016	656
2017	450
Thereafter	90
	\$ 5,878

***Property, Plant and Equipment***

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

Buildings	25-39 Years
Building improvements	10-39 Years
Furniture, equipment and vehicles	3-15 Years
Leasehold improvements	Remaining lease term, or the estimated useful life of the improvement, whichever is shorter

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## UNITED THERAPEUTICS CORPORATION

## Notes to Consolidated Financial Statements (Continued)

**2. Summary of Significant Accounting Policies (Continued)**

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

	As of December 31,	
	2012	2011
Land	\$ 38,104	\$ 21,723
Buildings, building improvements and leasehold improvements	393,174	249,289
Buildings under construction	4,302	72,511
Furniture, equipment and vehicles	96,096	75,801
	531,676	419,324
Less accumulated depreciation	(77,991)	(53,278)
Property, plant and equipment, net	\$ 453,685	\$ 366,046

Depreciation expense for the years ended December 31, 2012, 2011 and 2010 was \$25.0 million, \$18.2 million and \$17.6 million, respectively.

Buildings under construction consists of direct costs relating to our construction projects, including capitalized interest. We completed the expansion of our corporate headquarters located in Maryland and our North Carolina facility during the first and second quarters of 2012, respectively. For the years ended December 31, 2012 and 2011, we capitalized \$905,000 and \$842,000 of interest expense, 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.

***Revenue Recognition******Remodulin and Tyvaso***

We sell both Remodulin and Tyvaso to our specialty pharmaceutical distributors under similar contractual arrangements. Sales of Remodulin and Tyvaso are recognized when title and risk of ownership pass to our distributors upon satisfactory delivery *i.e.*, when all of our performance obligations under these distributor arrangements have been satisfied. We record sales of Remodulin and Tyvaso net of various product sales allowances in the period that associated revenues are recognized. These sales allowances include estimated rebates, prompt payment discounts and service fees to our distributors. Calculating these sales allowances involves the use of significant estimates and judgments and information from external sources.

We derive our provisions for rebates from an analysis of historical levels of rebates to both state Medicaid agencies and third-party payers by product, relative to sales of each product. In formulating our estimates, we also consider the impact of anticipated changes in our product pricing, sales trends and government rebate programs, particularly as they relate to eligibility requirements and/or rebate pricing. Since rebate eligibility and pricing requirements can differ for Remodulin and Tyvaso, we analyze rebate data separately for each of these products.



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**UNITED THERAPEUTICS CORPORATION**

**Notes to Consolidated Financial Statements (Continued)**

**2. Summary of Significant Accounting Policies (Continued)**

We estimate prompt pay discounts based on observed payment behavior. Our distributors have routinely taken advantage of these discounts and we expect them to continue to do so.

We pay our distributors for contractual services rendered and accrue for related fees based on contractual rates applied to the estimated units of service provided by distributors for a given financial reporting period.

Our distributors do not possess return rights; however, we provide exchange rights in the event that product is damaged during shipment or expires. Exchanges for damaged product are highly infrequent. In the event that Remodulin or Tyvaso has been damaged during shipment and we have been promptly notified as required under our distributor arrangements, we do not recognize revenue on that shipment until damaged product has been replaced. Replacement of damaged product generally occurs within several days after we are notified of the damage. Furthermore, the number of product exchanges due to expiration has been minimal because we sell Remodulin and Tyvaso with a remaining shelf life in excess of one year and our distributors typically carry a thirty- to sixty-day supply of our products at any given time. In addition, we closely track inventory levels in the distribution channels. Except for contractual minimum inventory levels to prevent shortages of drug supply, we do not require, nor do we provide incentives for our distributors to assume, inventory levels of Remodulin or Tyvaso beyond what would be considered reasonable and customary in the ordinary course of business.

The financial effects of exchange rights for Remodulin and Tyvaso have been immaterial and we expect the volume of exchanges to be consistent with historical levels. Specifically, exchanges of Remodulin and Tyvaso have comprised substantially less than one percent of the volume of the units that we sell. Because historical and anticipated future exchanges of Remodulin and Tyvaso have been and are expected to be immaterial, we do not record a reserve for estimated exchange rights in the period of sale. Lastly, we closely monitor product exchange data for both of these therapies to ensure that our assumptions continue to be reasonable, appropriate and current.

*Adcirca*

Adcirca is manufactured for us by Eli Lilly and Company (Lilly) and distributed through Lilly's pharmaceutical wholesaler network. Specifically, Lilly handles all of the administrative functions associated with the sale of Adcirca on our behalf, including the receipt and processing of customer purchase orders, shipment to customers, and invoicing and collection of customer payments. In addition, sales terms for Adcirca include return rights that extend throughout the distribution channel. We recognize sales of Adcirca on a gross basis (net of allowances) upon delivery to customers due to the following factors: (1) we are responsible for the acceptability of the product purchased by wholesalers; (2) we bear all inventory risk, as title and risk of loss pass to us at the shipping point from Lilly's manufacturing facility; (3) we assume credit risk if Lilly is unable to collect amounts due from customers; and (4) we assume the risk and cost of a product recall, if required.

We recognize sales of Adcirca net of: (1) estimated rebates (including discounts required under Medicare Part D); (2) prompt pay discounts; (3) allowances for product returns; and (4) wholesaler fees. We estimate our liability for rebates based on an analysis of historical levels of rebates to both Medicaid and commercial third-party payers. In addition, we determine our obligation for prescription drug discounts required for Medicare Part D patients within the coverage gap based on estimations of the number of Medicare Part D patients and the period such patients will remain within the coverage gap. We base our estimates for prompt pay discounts on observed customer payment behavior and

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**UNITED THERAPEUTICS CORPORATION**

**Notes to Consolidated Financial Statements (Continued)**

**2. Summary of Significant Accounting Policies (Continued)**

expectations regarding the future utilization of such discounts. We derive estimates relating to the allowance for returns from published industry data specific to specialty pharmaceuticals and will continue to do so until we have sufficient historical data on which to base our allowance. In addition, we compare patient prescription data for Adcirca to sales of Adcirca on a quarterly basis to ensure a reasonable relationship between prescription and sales trends. To date, we have not identified any unusual patterns in the volume of prescriptions relative to sales that would warrant reconsideration of, or adjustment to, the methodology we currently employ to estimate our allowance for returns. Lastly, wholesaler fees are based on contractual percentages of sales to wholesalers.

***Research and Development***

Research and development costs are expensed as incurred except for refundable 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 in-house or contracted production activities prior to receiving FDA approval for such facilities, or for major unproven changes to our production processes;

Costs incurred in licensing the rights to technologies in the research and development stage that have no alternative future uses; and

Up-front payments made in connection with arrangements to obtain license and distribution rights to pharmaceutical product candidates prior to regulatory approval, absent any alternative future uses.

***Share-Based Compensation***

Share-based awards that require cash settlement upon exercise, such as those granted under our Share Tracking Award Plans, are classified as a liability. Accordingly, the fair value of related cash settled awards is re-measured at each reporting date until awards are exercised or are otherwise no longer outstanding. Related changes in the fair value of outstanding cash-settled awards at each financial reporting date are recognized as adjustments to share-based compensation expense.

Generally, the fair value of a stock option grant is measured on its grant date and related compensation expense is recognized ratably over the requisite service period. Compensation expense is recognized in its entirety based on the grant-date fair value for stock option awards that vest immediately upon issuance. Compensation expense is accrued for performance-based stock option grants when we determine it is probable that the performance criteria will be met. We issue new shares of our common stock upon the exercise of stock options.

We estimate the fair value of stock to be purchased through our employee stock purchase plan at the beginning of an offering period, or grant date, and recognize related compensation expense ratably over the requisite service period (the offering period). We will issue new shares of our common stock upon the end of each offering period, or exercise date.

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**UNITED THERAPEUTICS CORPORATION**

**Notes to Consolidated Financial Statements (Continued)**

**2. Summary of Significant Accounting Policies (Continued)**

***Income Taxes***

Income taxes are accounted for in accordance with the asset and liability method. 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. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in the period that includes the enactment date. Deferred tax assets are reduced by a valuation allowance when, in our judgment, it is more likely than not that some or all of the deferred tax assets will not be realized.

Financial statement recognition of a tax position taken or expected to be taken in a tax return is determined based on a more likely than not threshold of that position being sustained. If the tax position meets this threshold, the benefit to be recognized is measured as the largest amount that is more than 50 percent likely to be realized upon ultimate settlement. It is our policy to record interest and penalties related to uncertain tax positions as a component of income tax expense.

***Earnings (Loss) per Share***

Basic earnings per share is computed by dividing net income by the weighted average number of shares of common stock outstanding during the period. Diluted earnings per common share is computed by dividing net income by the weighted average number of shares of common stock outstanding during the period, plus the potential dilutive effect of other securities if such securities were converted or exercised. During periods in which we incur net losses, both basic and diluted loss per share is calculated by dividing the net loss by the weighted average shares outstanding. Potentially dilutive securities are excluded from the calculation because their effect would be anti-dilutive.

***Concentrations of Credit Risk, Products, Revenues and Customers***

***Concentration of credit risk***

Financial instruments that are exposed to credit risk consist of cash, money market funds, commercial paper, marketable investments, and trade receivables. We maintain our cash and money market funds with financial institutions that are federally insured. While balances deposited in these institutions often exceed Federal Deposit Insurance Corporation limits, we have not experienced any losses on related accounts to date. Furthermore, we limit our risk exposure by maintaining funds in financial institutions that we believe are creditworthy and financially sound. Our investments in marketable debt securities have been issued by corporate entities and federally sponsored agencies with high credit ratings. We mitigate the risks associated with holding these types of securities by investing in highly-rated securities with relatively short maturities that we believe do not subject us to undue investment or credit risk. At any given time, our trade receivables are concentrated among a small number of principal customers. If any of these financial institutions, issuers or customers fail to perform their obligations under the terms of these financial instruments, our maximum exposure to potential losses would equal amounts reported on our consolidated balance sheets.

Table of Contents**UNITED THERAPEUTICS CORPORATION****Notes to Consolidated Financial Statements (Continued)****2. Summary of Significant Accounting Policies (Continued)***Concentration of products, revenues, and customers*

In the United States, we sell Remodulin and Tyvaso to three distributors. During the years ended December 31, 2012, 2011 and 2010, net sales of Remodulin and Tyvaso to these three distributors accounted for 78 percent, 81 percent and 84 percent, respectively, of our total net revenues. During the years ended December 31, 2012, 2011 and 2010, net sales of Remodulin accounted for 50 percent, 58 percent and 68 percent, respectively, of our total net revenues. Net sales of Tyvaso during the years ended December 31, 2012, 2011 and 2010 comprised 36 percent, 32 percent and 26 percent, respectively of our total net revenues.

At December 31, 2012 and 2011, 60 percent and 68 percent, respectively, of our accounts receivable were due from our three U.S.-based distributors.

During the years ended December 31, 2012, 2011 and 2010, we derived 56 percent, 61 percent and 65 percent of our total net revenues from one customer. Estimated net revenues from that customer were as follows (in thousands):

	Year Ended December 31,		
	2012	2011	2010
Accredo Health Group, Inc.	\$ 514,095	\$ 455,504	\$ 387,251

**3. Recently Issued Accounting Standards**

In June 2011, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) No. 2011-05, *Comprehensive Income (Topic 220) Presentation of Comprehensive Income* (ASU 2011-05). ASU 2011-05 requires entities to report all non-owner changes in stockholders' equity in either a single continuous statement of comprehensive income, or in two separate, but consecutive statements. ASU 2011-05 does not change the items that must be reported in other comprehensive income, or when an item must be reclassified to net income. In December 2011, the FASB issued ASU 2011-12, *Comprehensive Income (Topic 220): Presentation of Comprehensive Income - Deferral of the Effective Date for Amendments to the Presentation of Reclassifications of Items Out of Accumulated Other Comprehensive Income in Accounting Standards Update No. 2011-05* (ASU 2011-12). ASU 2011-12 defers indefinitely provisions contained in ASU 2011-05 that revise existing presentation requirements for reclassification adjustments from comprehensive income as the FASB further deliberates this issue. During the deferral period, reporting entities will continue to follow existing guidance prior to ASU 2011-05 under ASC Topic 220, *Comprehensive Income*, with respect to the disclosure of reclassifications adjustments. Both ASU 2011-12 and ASU 2011-05 became effective for us on January 1, 2012 and required retrospective application. Other than the presentational changes to our basic consolidated financial statements required under ASU 2011-05 (as amended by ASU 2011-12), adoption of ASU 2011-05 did not have any impact on our consolidated financial statements.

In February 2013, the FASB issued ASU No. 2013-02, *Comprehensive Income (Topic 220) Reporting Amounts Reclassified Out of Accumulated Other Comprehensive Income* (ASU 2013-02). ASU 2013-02 provides guidance about disclosing reclassification adjustments, which was previously deferred for further deliberation by ASU 2011-12. ASU 2013-02 provides financial statement issuers the option to disclose significant amounts reclassified from accumulated other comprehensive income separately by each component in either (1) a single note to the financial statements, or

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## UNITED THERAPEUTICS CORPORATION

## Notes to Consolidated Financial Statements (Continued)

**3. Recently Issued Accounting Standards (Continued)**

(2) parenthetically on the face of the income statement for each line item(s) affected by the reclassification adjustment. ASU 2013-02 will be effective for all interim and annual financial statement reporting periods beginning after December 15, 2012, with early adoption permitted. We do not anticipate the adoption of ASU 2013-02 will have any impact on our consolidated financial statements.

**4. Marketable Investments***Held-to-Maturity Investments*

Marketable investments classified as held-to-maturity consist of the following (in thousands):

		December 31, 2012		
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Government-sponsored enterprises	\$ 350,043	\$ 261	\$ (35)	\$ 350,269
Corporate notes and bonds	280,385	184	(140)	280,429
<b>Total</b>	<b>\$ 630,428</b>	<b>\$ 445</b>	<b>\$ (175)</b>	<b>\$ 630,698</b>

Reported under the following captions on the consolidated balance sheet:

Current marketable investments	\$ 325,175
Noncurrent marketable investments	305,253
	<b>\$ 630,428</b>

		December 31, 2011		
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Government-sponsored enterprises	\$ 308,202	\$ 155	\$ (170)	\$ 308,187
Corporate notes and bonds	276,118	113	(442)	275,789
<b>Total</b>	<b>\$ 584,320</b>	<b>\$ 268</b>	<b>\$ (612)</b>	<b>\$ 583,976</b>

Reported under the following captions on the consolidated balance sheet:

Current marketable investments	\$ 240,803
Noncurrent marketable investments	343,517
	<b>\$ 584,320</b>

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## UNITED THERAPEUTICS CORPORATION

## Notes to Consolidated Financial Statements (Continued)

**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,		December 31,	
	2012	2011	2012	2011
	Fair Value	Gross Unrealized Loss	Fair Value	Gross Unrealized Loss
Government-sponsored enterprises:				
Less than one year	\$ 72,727	\$ (35)	\$ 170,018	\$ (170)
Greater than one year				
	72,727	(35)	170,018	(170)
Corporate notes and bonds:				
Less than one year	90,960	(140)	149,383	(442)
Greater than one year				
	90,960	(140)	149,383	(442)
<b>Total</b>	<b>\$ 163,687</b>	<b>\$ (175)</b>	<b>\$ 319,401</b>	<b>\$ (612)</b>

We attribute the unrealized losses on held-to-maturity securities as of December 31, 2012 and 2011, to the variability in related market interest rates. We do not intend to sell these securities, nor is it more likely than not that we will be required to sell them prior to the end of their contractual term. Furthermore, we believe these securities do not subject us to undue market risk or counterparty credit risk. As such, we do not consider any of these securities to be other than temporarily impaired.

The following table summarizes the contractual maturities of held-to-maturity marketable investments at December 31, 2012 (in thousands):

	December 31, 2012	
	Amortized Cost	Fair Value
Due in less than one year	\$ 325,175	\$ 325,392
Due in one to two years	305,253	305,306
Due in three to five years		
Due after five years		
<b>Total</b>	<b>\$ 630,428</b>	<b>\$ 630,698</b>

**Trading Investments**

For the years ended December 31, 2012 and 2011, we had no trading investments. During the year ended December 31, 2010, we recognized trading gains of \$6.9 million.

**Equity Investments**

As of December 31, 2012 and 2011, we owned less than one percent of the common stock of a public company. Our investment is classified as available-for-sale and is reported at fair value based on



Table of Contents**UNITED THERAPEUTICS CORPORATION****Notes to Consolidated Financial Statements (Continued)****4. Marketable Investments (Continued)**

the quoted market price. We include this investment within non-current marketable investments on our consolidated balance sheets.

As of December 31, 2012, we maintain equity investments totaling approximately \$8.0 million in privately-held corporations. We account for these investments at cost since we do not have the ability to exercise significant influence on these corporations and their fair values are not readily determinable. The fair value of these investments has not been estimated at December 31, 2012, as there have been no events or developments indicating the related carrying amounts may be impaired. We include these investments within non-current other assets on our consolidated balance sheets.

**5. Fair Value Measurements**

Assets and liabilities carried at, or permitted to be carried at, fair value are classified and disclosed in one of the following categories based on the lowest level input that is significant to a 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 as 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 judgment.

Assets and liabilities subject to fair value measurements are as follows (in thousands):

	As of December 31, 2012			
	Level 1	Level 2	Level 3	Balance
<b>Assets</b>				
Money market funds(1)	\$ 77,436	\$	\$	\$ 77,436
Federally-sponsored and corporate debt securities(2)		630,698		630,698
Available-for-sale equity investment	473			473
<b>Total Assets</b>	<b>\$ 77,909</b>	<b>\$ 630,698</b>	<b>\$</b>	<b>\$ 708,607</b>
<b>Liabilities</b>				
Convertible notes maturing in 2016(3)	\$	\$ 316,250	\$	\$ 316,250
Contingent consideration(4)			6,730	6,730
	\$	\$ 316,250	\$ 6,730	\$ 322,980



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## UNITED THERAPEUTICS CORPORATION

## Notes to Consolidated Financial Statements (Continued)

## 5. Fair Value Measurements (Continued)

	As of December 31, 2011			
	Level 1	Level 2	Level 3	Balance
<b>Assets</b>				
Money market funds(1)	\$ 72,905	\$	\$	\$ 72,905
Federally-sponsored and corporate debt securities(2)		583,976		583,976
Available-for-sale equity investment	382			382
<b>Total Assets</b>	<b>\$ 73,287</b>	<b>\$ 583,976</b>	<b>\$</b>	<b>\$ 657,263</b>
<b>Liabilities</b>				
Convertible notes maturing in 2016(3)	\$	\$ 292,500	\$	\$ 292,500
Contingent consideration(4)			7,973	7,973
	\$	\$ 292,500	\$ 7,973	\$ 300,473

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- (1) Included in cash and cash equivalents and marketable investments and cash restricted on the accompanying consolidated balance sheets.
- (2) Included in current and non-current marketable investments on the accompanying consolidated balance sheets. The fair value of these securities is principally measured or corroborated by trade data for identical issues or that of comparable securities in which related trading activity is not sufficiently frequent to be considered Level 1 asset. See also Note 4 *Marketable Investments Held-to-Maturity Investments* to these consolidated financial statements.
- (3) Included in non-current convertible notes refer to Note 8 *Debt Convertible Notes Due 2016* for details. Pricing of our 2016 Convertible Notes has been estimated using other observable inputs including the price of our common stock, implied volatility, interest rates and credit spreads, among others. Over time, we expect a more active market for the 2016 Convertible Notes to develop. At that time, we intend to use trade data as the principal basis for measuring fair value.
- (4) Included in other liabilities on the accompanying consolidated balance sheets. The fair value of contingent consideration has been estimated using probability weighted discounted cash flow models (DCF). The DCF incorporates Level 3 inputs including estimated discount rates that we believe market participants would consider relevant in pricing and the projected timing and amount of cash flows, which are estimated and developed, in part, based on the requirements specific to each acquisition agreement. We analyze and evaluate these fair value measurements quarterly to determine whether valuation inputs continue to be relevant and appropriate or whether current period developments warrant adjustments to valuation inputs and related measurements. Any increases or decreases in discount rates would have an inverse impact on the value of related fair value measurements, while increases or decreases in expected cash flows would result in a corresponding increase or decrease in fair value measurements. As of December 31, 2012 and December 31, 2011, the cost of debt and weighted average cost of capital used to discount projected cash flows relating to our contingent consideration ranged from 6.6 percent to 17.2 percent and from 8.6 percent to 17.9 percent, respectively. Refer also to Note 16 *Acquisitions*.

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## UNITED THERAPEUTICS CORPORATION

## Notes to Consolidated Financial Statements (Continued)

## 5. Fair Value Measurements (Continued)

The tables below provide a reconciliation of the beginning and ending balances of Level 3 assets and liabilities for the years ended December 31, 2012 and 2011 (in thousands):

	<b>Contingent Consideration</b>
Balance January 1, 2012 Asset (Liability)	\$ (7,973)
Transfers into Level 3	
Transfers out of Level 3	
Total gains/(losses) realized/unrealized:	
Included in earnings	663
Included in other comprehensive income	(34)
Purchases	
Sales	
Issuances	
Settlements	614
Balance December 31, 2012 Asset (Liability)	\$ (6,730)

Amount of total gains/(losses) for the year ended December 31, 2012 included in earnings that are attributable to the change in unrealized gains or losses related to outstanding liabilities	\$ 663
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	<b>Contingent Consideration</b>
Balance January 1, 2011 Asset (Liability)	\$ (1,894)
Transfers into Level 3	
Transfers out of Level 3	
Total gains/(losses) realized/unrealized:	
Included in earnings	(1,575)
Included in other comprehensive income	6
Purchases	(5,871)
Sales	
Issuances	
Settlements	1,361
Balance December 31, 2011 Asset (Liability)	\$ (7,973)

Amount of total gains/(losses) for the year ended December 31, 2011 included in earnings that are attributable to the change in unrealized gains related to outstanding liabilities	\$ (1,575)
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## UNITED THERAPEUTICS CORPORATION

## Notes to Consolidated Financial Statements (Continued)

**6. Accrued Expenses**

Accrued expenses consist of the following by major category (in thousands):

	December 31,	
	2012	2011
Royalties and rebates	\$ 37,264	\$ 33,002
Payroll related	26,013	16,945
Research related	5,057	2,939
Other	4,651	4,341
<b>Total</b>	<b>\$ 72,985</b>	<b>\$ 57,227</b>

**7. Share Tracking Award Plans**

We maintain the United Therapeutics Corporation Share Tracking Awards Plan, adopted in June 2008 (2008 STAP) and the United Therapeutics Corporation 2011 Share Tracking Awards Plan, adopted in March 2011 (2011 STAP). We refer to the 2008 STAP and the 2011 STAP collectively as the "STAP" and awards granted and/or outstanding under either of these plans as "STAP Awards." STAP Awards convey the right to receive in cash an amount equal to the appreciation of our common stock, which is calculated as the positive difference between the closing price of our common stock on the date of exercise and the date of grant. Awards generally vest in equal increments on each anniversary of the date of grant over a four-year period and expire on the tenth anniversary of the date of grant. In February 2012, the 2008 STAP was amended to cancel any remaining awards available for future grants thereunder. During the year ended December 31, 2012, the 2011 STAP was amended to increase the total number of awards available by 3.8 million. At December 31, 2012, the maximum number of awards that could be granted under the 2011 STAP was 5.8 million, of which 2.5 million remained available for issuance. On February 4, 2013, our Board of Directors approved a 1.4 million increase to the number of available STAP awards.

The STAP liability balance was \$75.4 million and \$79.9 million at December 31, 2012 and 2011, respectively, and has been included in other current liabilities on our consolidated balance sheets.

In estimating the fair value of awards, we are required to use inputs that materially impact the determination of fair value and the amount of compensation expense recognized. These inputs include the expected volatility of the price of our common stock, the risk-free interest rate, the expected term of awards, the expected forfeiture rate and the expected dividend yield.

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 generally 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.

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## UNITED THERAPEUTICS CORPORATION

## Notes to Consolidated Financial Statements (Continued)

## 7. Share Tracking Award Plans (Continued)

*Expected term of awards* An award's expected term reflects the estimated time period we expect an award to remain outstanding. We apply the simplified method in developing an estimate of the expected term.

*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 for similar classes of employees.

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

The table below presents the assumptions used to measure the fair value of awards:

	December 31,		
	2012	2011	2010
Expected volatility	32.8%	38.0%	46.8%
Risk-free interest rate	0.5%	0.5%	1.7%
Expected term of awards (in years)	3.7	3.9	4.5
Forfeiture rate	8.7%	7.0%	6.7%
Expected dividend yield	0.0%	0.0%	0.0%

A summary of the status and activity of the STAP is presented below:

	Number of Awards	Weighted-Average Exercise Price	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value (in 000s)
Outstanding at January 1, 2012	7,795,000	\$ 45.90		
Granted	1,887,103	48.09		
Exercised	(1,397,211)	29.32		
Forfeited	(322,517)	54.00		
Outstanding at December 31, 2012	7,962,375	\$ 49.00	7.3	\$ 56,554
Exercisable at December 31, 2012	4,066,220	\$ 43.53	6.7	\$ 45,454
Expected to vest at December 31, 2012	3,228,099	\$ 53.55	8.5	\$ 10,163

The weighted average fair value of awards granted, as of their date of grant, during the years ended December 31, 2012, 2011 and 2010 was \$21.28, \$27.80 and \$26.23, respectively.

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## UNITED THERAPEUTICS CORPORATION

## Notes to Consolidated Financial Statements (Continued)

**7. Share Tracking Award Plans (Continued)**

Share-based compensation expense (benefit) recognized in connection with the STAP is as follows (in thousands):

	Year Ended December 31,		
	2012	2011	2010
Research and development	\$ 11,130	\$ (8,190)	\$ 42,791
Selling, general and administrative	14,490	(8,023)	47,926
Cost of product sales	1,230	(174)	
Share-based compensation expense (benefit) before taxes	26,850	(16,387)	90,717
Related income tax (benefit) expense	(9,902)	6,058	(33,565)
Share-based compensation expense (benefit), net of taxes	\$ 16,948	\$ (10,329)	\$ 57,152
Share-based compensation capitalized as part of inventory	\$ 275	\$ (203)	\$ 3,002

Cash paid to settle STAP exercises during the years ended December 31, 2012, 2011 and 2010 was \$31.8 million, \$28.7 million and \$32.9 million, respectively.

**8. Debt***Convertible Notes Due 2016*

On October 17, 2011, we issued at par value \$250.0 million of 1.0% convertible senior notes due September 15, 2016 (2016 Convertible Notes). We received \$242.5 million in net proceeds from the offering after deducting fees paid to the initial purchaser (Deutsche Bank Securities, Inc.) and our offering expenses. We used the net proceeds to: (1) repurchase shares of our common stock under an accelerated share repurchase arrangement as described in Note 10 *Stockholders' Equity Share Repurchase*; and (2) pay the net cost of the convertible note hedge and warrant transactions described below. The accelerated share repurchase, convertible note hedge and warrant transactions were all entered into with Deutsche Bank AG London Branch (DB London), an affiliate of Deutsche Bank Securities, Inc., and became effective on the issuance date of the 2016 Convertible Notes. We pay interest semi-annually on March 15<sup>th</sup> and September 15<sup>th</sup> of each year. The initial conversion price is \$47.69 per share and the maximum number of shares underlying the debt is approximately 5.2 million shares.

Conversion can occur: (1) any time after June 15, 2016; (2) during any calendar quarter that follows a calendar quarter in which the price of our common stock exceeds 130 percent of the conversion price for at least 20 days during the 30 consecutive trading-day period ending on the last trading day of the quarter; (3) during the ten consecutive trading-day period following any five consecutive trading-day period in which the trading price of the 2016 Convertible Notes is less than 95 percent of the closing price of our common stock multiplied by the then current number of shares underlying the 2016 Convertible Notes; (4) upon specified distributions to our shareholders; (5) in connection with certain corporate transactions; or (6) in the event that our common stock ceases to be listed on the NASDAQ Global Select Market, the NASDAQ Global Market, or the New York Stock

Table of Contents**UNITED THERAPEUTICS CORPORATION****Notes to Consolidated Financial Statements (Continued)****8. Debt (Continued)**

Exchange, or any of their respective successors. As of December 31, 2012 and 2011, none of the contingent conversion thresholds described above were met in order for the 2016 Convertible Notes to be convertible at the option of the noteholders. As a result, the 2016 Convertible Notes have been classified as a non-current liability on our consolidated balance sheets at December 31, 2012 and 2011. In future financial reporting periods, the classification of the 2016 Convertible Notes may change depending on whether any of the above contingent criteria have been subsequently satisfied.

At December 31, 2012, the aggregate conversion value of the 2016 Convertible Notes exceeded their par value by \$30.0 million using a conversion price of \$53.42, the closing price of our common stock on December 31, 2012.

Upon conversion, holders of our 2016 Convertible Notes are entitled to receive: (1) cash equal to the lesser of the par value of the notes or the conversion value (the number of shares underlying the 2016 Convertible Notes multiplied by the then current conversion price per share); and (2) to the extent the conversion value exceeds the par value of the notes, shares of our common stock. In the event of a change in control, as defined in the indenture under which the 2016 Convertible Notes have been issued, holders can require us to purchase all or a portion of their 2016 Convertible Notes for 100 percent of the notes' par value plus any accrued and unpaid interest.

The 2016 Convertible Notes provide for settlement wholly or partially in cash; therefore, we are required to account for their liability and equity components separately so that the subsequent recognition of interest expense reflects our non-convertible borrowing rate. Accordingly, we estimated the fair value of the 2016 Convertible Notes without consideration of the conversion option as of the date of issuance (Liability Component). The excess of the proceeds received over the estimated fair value of the Liability Component totaling \$57.9 million has been recorded as the conversion option (Equity Component) and a corresponding offset has been recognized as a discount to the 2016 Convertible Notes to reduce their net carrying value. We are amortizing the discount over the five-year period ending September 15, 2016 (the expected life of the Liability Component) using the interest method and an effective interest rate of 6.7 percent, which corresponds to our estimated non-convertible borrowing rate at the date of issuance.

Interest expense incurred in connection with our convertible notes consisted of the following (in thousands):

	<b>Year Ended December 31,</b>		
	<b>2012</b>	<b>2011</b>	<b>2010</b>
Contractual coupon rate of interest	\$ 2,500	\$ 1,510	\$ 1,250
Discount amortization	10,487	16,118	15,705
<b>Interest expense convertible notes(1)</b>	<b>\$ 12,987</b>	<b>\$ 17,628</b>	<b>\$ 16,955</b>

- (1) Interest expense recognized in connection with our convertible notes for the each of the years ended December 31, 2011 and 2010 includes the effective interest relating to a prior issue of convertible notes that matured in October 2011 (2011 Convertible Notes). We accounted for the 2011 Convertible Notes in a manner similar to that of the 2016 Convertible Notes using an effective interest rate of 7.5 percent over an expected life of five years.

Table of Contents**UNITED THERAPEUTICS CORPORATION****Notes to Consolidated Financial Statements (Continued)****8. Debt (Continued)**

The carrying value of our convertible notes consisted of the following (in thousands):

	December 31,	
	2012	2011
Principal balance	\$ 250,000	\$ 250,000
Discount, net of accumulated amortization of \$12,605 and \$2,118	(45,333)	(55,820)
Carrying amount	\$ 204,667	\$ 194,180

***Convertible Note Hedge and Warrant Transactions***

In connection with the issuance of our 2016 Convertible Notes, we entered into separate convertible note hedge and warrant transactions with DB London to reduce the potential dilutive impact upon the conversion of our convertible notes. Pursuant to the convertible note hedge, we purchased call options granting us the right to acquire up to approximately 5.2 million shares of our common stock with a strike price of \$47.69. The call options become exercisable upon conversion of the 2016 Convertible Notes, and will terminate upon the maturity of the 2016 Convertible Notes or the first day the 2016 Convertible Notes are no longer outstanding, whichever occurs first. We also sold DB London warrants to acquire up to approximately 5.2 million shares of our common stock with a strike price of \$67.56. The warrants will expire incrementally on a series of expiration dates subsequent to the maturity date of our 2016 Convertible Notes. Both the convertible note hedge and warrant transactions will be settled on a net-share basis. If the conversion price of our 2016 Convertible Notes remains between the strike prices of the call options and warrants, our shareholders will not experience any dilution in connection with the conversion of our 2016 Convertible Notes; however, to the extent that the price of our common stock exceeds the strike price of the warrants on any or all of the series of related incremental expiration dates of the warrants, we will be required to issue shares of our common stock to DB London.

In addition, the warrants we sold to DB London in connection with our 2011 Convertible Notes expired in March 2012. Since the price of our common stock over the series of the warrants' expiration dates did not exceed their strike price, we were not required to issue any shares of our common stock to DB London upon expiration of the warrants.

***Mortgage Financing Wells Fargo***

In December 2010, we entered into a Credit Agreement with Wells Fargo Bank, National Association (Wells Fargo) and Bank of America, N.A., pursuant to which we obtained \$70.0 million in debt financing. The Credit Agreement has a forty-eight month term maturing in December 2014 and is secured by our facilities in Research Triangle Park, North Carolina and Silver Spring, Maryland. Annual principal payments are based on a twenty-five year amortization schedule using a fixed rate of interest of 7.0 percent and the outstanding debt bears a floating rate of interest per annum based on the one month London Interbank Offer Rate (LIBOR), plus a credit spread of 3.75 percent, or approximately 4.0 percent as of December 31, 2012. Alternatively, we have the option to change the rate of interest charged on the loan to 2.75 percent plus the greater of: (1) Wells Fargo's prime rate, (2) the federal funds effective rate plus 0.05 percent, or (3) LIBOR plus 1.0 percent. Subsequent to June 30, 2012, we are permitted to prepay the loan balance in its entirety without being subject to a prepayment premium or penalty.

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## UNITED THERAPEUTICS CORPORATION

## Notes to Consolidated Financial Statements (Continued)

**8. Debt (Continued)**

The Credit Agreement subjects us to the following financial covenants: (1) a maximum consolidated leverage ratio of 2.5:1.0, calculated as the ratio of our consolidated indebtedness to "Consolidated EBITDA" which is defined as consolidated net income, adjusted for the following as applicable: (i) interest expense; (ii) income taxes; (iii) non-cash license fees; (iv) depreciation and amortization; (v) impairment charges; and (vi) share-based compensation (stock option and share tracking awards expense), to be measured as of the last day of each fiscal quarter on a rolling four quarter basis; and (2) minimum liquidity of no less than \$150.0 million. Under the Credit Agreement, minimum liquidity is defined as the sum of our cash and cash equivalents, plus the fair value of our marketable investments as of the last day of a fiscal quarter less the sum of indebtedness that matures within the next twelve months and the liability related to vested STAP awards in excess of \$50.0 million. In addition, the Credit Agreement subjects us to various customary negative covenants. As of December 31, 2012, we were in compliance with these covenants.

*Mortgage Financing Midland Loan Services (PNC Bank N.A.)*

In November 2011, we assumed a mortgage loan in connection with the acquisition of an office building that is located adjacent to our corporate headquarters. The mortgage loan is secured by the acquired office building. The outstanding principal balance on the mortgage loan of \$3.7 million as of December 31, 2012 bears interest at 6.35 percent per annum. The loan is payable in monthly installments which are based on a thirty-year amortization schedule. The loan matures on June 1, 2016, at which time the remaining principal balance of approximately \$3.4 million will be due in full.

As of December 31, 2012, future maturities relating to our mortgage financings are as follows (in thousands):

Year Ended December 31,	
2013	\$ 1,313
2014	66,642
2015	97
2016	3,490
2017	114
Total	\$ 71,656

*Interest Expense*

Details of interest expense include the following (in thousands):

	Year Ended December 31,		
	2012	2011	2010
Interest expense	\$ 17,544	\$ 22,209	\$ 19,813
Capitalized interest	(905)	(842)	(103)
Total	\$ 16,639	\$ 21,367	\$ 19,710



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## UNITED THERAPEUTICS CORPORATION

## Notes to Consolidated Financial Statements (Continued)

**9. Commitments and Contingencies***Operating Leases*

We lease facilities space and equipment under operating lease arrangements that have terms expiring at various dates through 2020. Certain lease arrangements include renewal options and escalation clauses. In addition, various lease agreements to which we are party require that we comply with certain customary 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 noncompliance, these agreements could terminate.

Future minimum lease payments under non-cancelable operating leases are as follows (in thousands):

Year Ending December 31,	
2013	\$ 3,378
2014	3,286
2015	3,264
2016	3,031
2017	2,751
Thereafter	2,424
	\$ 18,134

Total rent expense was \$3.6 million, \$4.6 million and \$2.7 million for the years ended December 31, 2012, 2011 and 2010, respectively.

*Milestone Payments*

We are party to certain license agreements as described in Note 13 *Assignment and License Agreements* and acquisition agreements as described in Note 16 *Acquisitions* below. Generally, these agreements require that we make milestone payments in cash upon the achievement of certain product development and commercialization goals and payments of royalties upon commercial sales.

Future milestone payments based on our estimates of the timing and probability of achieving milestones specified under these arrangements have been estimated as follows (in thousands):

Year Ending December 31,	(1)
2013	\$ 1,280
2014	2,010
2015	
2016	5,910
2017	10,074
Thereafter	8,593
Total	\$ 27,867

(1) The amounts and timing of future milestone payments may vary depending on when related milestones will be attained, if at all.

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**UNITED THERAPEUTICS CORPORATION**

**Notes to Consolidated Financial Statements (Continued)**

**9. Commitments and Contingencies (Continued)**

*Research Agreement*

We maintain a research agreement with the University of Oxford (Oxford) to develop antiviral compounds. Research under this agreement is performed by Oxford Glycobiology Institute, which is headed by a member of our Board of Directors and our scientific advisory board. Under the terms of the agreement, we are required to fund related research activities and make milestone payments for the successful completion of clinical trials. We are also obligated to pay royalties to Oxford equal to a percentage of our net sales from any discoveries and products developed by Oxford. Milestone payments and royalties are subject to reduction depending upon third-party contributions to discoveries and/or third-party licenses necessary to develop products. In August 2010, the term of the research agreement, which was to expire on September 30, 2011, was extended through September 2016. In connection with the extension of the term, we agreed to pay Oxford a total of \$2.9 million (using the then prevailing exchange rate) in sixty equal installments. As of December 31, 2012, approximately \$2.3 million remains outstanding. In addition, in December 2012, we amended our agreement with Oxford, under which we agreed to pay Oxford an additional \$871,000 in the aggregate (using the exchange rate as of the amendment date) in thirty-six equal installments for additional work supporting the development of our virology platform beginning in January 2013. During the years ended December 31, 2012, 2011 and 2010, we incurred \$577,000, \$658,000 and \$610,000, respectively, in expenses under the terms of the agreement.

From time to time, we may enter into other service agreements with Oxford relating to specific development activities that are outside the scope of our research agreement described above. We incurred expenses of \$336,000, \$550,000 and \$401,000 relating to these additional services during the years ended December 31, 2012, 2011 and 2010, respectively.

**10. Stockholders' Equity**

*Equity Incentive Plan*

We maintain an equity incentive plan (EIP) under which we may grant stock options. The EIP provides for the issuance of up to 29.9 million shares of our common stock. As of December 31, 2012, there were 11.0 million shares remaining for issuance under the EIP, of which approximately 10.9 million were reserved for issuance to our Chief Executive Officer. If granted, options awarded under the EIP are nontransferable, carry a maximum contractual term of ten years and typically vest in equal annual increments over a maximum period of three years, except for awards to our CEO, which vest immediately upon grant in accordance with the terms of her employment agreement. The exercise price of related stock-option 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.

*Employee Stock 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. These assumptions include the expected volatility of our common stock, risk-free interest rate, the expected term of stock option awards, expected forfeiture rate and the expected dividend yield.

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## UNITED THERAPEUTICS CORPORATION

## Notes to Consolidated Financial Statements (Continued)

**10. Stockholders' Equity (Continued)**

A description of the key inputs used in estimating the fair value of stock options 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 a stock option grant that is equal to the expected term of the grant (up to a maximum of five years). We believe volatility in the price of our common stock as measured over the preceding five years provides a reliable projection 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 a stock option grant.

*Expected term* The expected term reflects an estimation of the time period we expect an option grant to remain outstanding. We use the simplified method in developing an estimate of the expected term.

*Expected forfeiture rate* The expected forfeiture rate is the estimated percentage of options 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 for similar classes of employees.

*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.

The following weighted-average assumptions were used in estimating the fair value of stock options granted to employees (we did not grant any stock options during the year ended December 31, 2011):

	Year Ended December 31,	
	2012	2010
Expected volatility	41.6%	45.4%
Risk-free interest rate	0.7%	2.1%
Expected term of options (in years)	5.0	5.1
Forfeiture rate	0.0%	0.0%
Expected dividend yield	0.0%	0.0%

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

	Options	Weighted-Average Exercise Price	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value (in 000s)
Outstanding at January 1, 2012	4,923,377	\$ 36.98		
Granted	153,225	53.42		
Exercised	(519,552)	24.89		
Forfeited	(6,000)	7.58		
Outstanding and exercisable at December 31, 2012	4,551,050	\$ 38.95	5.2	\$ 71,162

Table of Contents**UNITED THERAPEUTICS CORPORATION****Notes to Consolidated Financial Statements (Continued)****10. Stockholders' Equity (Continued)**

The weighted average fair value of employee stock options granted during the years ended December 31, 2012, 2011 and 2010, was \$19.74, none and \$26.14, respectively. The total fair value of vested employee stock options was \$3.0 million, \$1.6 million and \$29.0 million for the years ended December 31, 2012, 2011 and 2010, respectively.

Total share-based compensation expense relating to employee stock options is as follows (in thousands):

	Year Ended December 31,		
	2012	2011	2010
Research and development	\$	\$ 196	\$ 3,087
Selling, general and administrative		3,024	315
			19,265
Share-based compensation expense before taxes		3,024	511
Related income tax benefit		(1,115)	(189)
			(8,226)
Share-based compensation expense, net of taxes	\$	1,909	\$ 322
			\$ 14,126
Share-based compensation capitalized as part of inventory	\$	\$ 15	\$ 290

As of December 31, 2012, all employee stock options were fully vested; consequently, there were no amounts of unrecognized compensation cost remaining.

Employee and non-employee stock option exercise data is summarized below (dollars in thousands):

	Year Ended December 31,		
	2012	2011	2010
Number of options exercised	575,944	837,690	3,335,114
Cash received from options exercised	\$ 14,290	\$ 24,398	\$ 85,427
Total intrinsic value of options exercised	\$ 15,508	\$ 30,644	\$ 102,905
Tax benefits realized from options exercised	\$ 3,054	\$ 11,347	\$ 23,826

***Employee Stock Purchase Plan***

In June 2012, our shareholders approved the United Therapeutics Corporation Employee Stock Purchase Plan (ESPP), which has been structured to comply with Section 423 of the Internal Revenue Code of 1986. The ESPP provides eligible employees the right to purchase shares of our common stock at a discount through elective accumulated payroll deductions at the end of each offering period. Offering periods occur in consecutive six-month periods commencing on September 5th and March 5th of each year. The initial six-month offering period began on September 5, 2012. Eligible employees may contribute up to 15 percent of their base salary, subject to certain annual limitations as defined in the ESPP, to purchase shares of our common stock. The purchase price of the shares is equal to 85 percent of the closing price of our common stock on either the first or last trading day of a given offering period, whichever is lower. In addition, the ESPP provides that no eligible employee may purchase more than 4,000 shares of our common stock during any offering period. The ESPP has a twenty-year term and limits the aggregate number of shares that can be issued to 3.0 million.

Table of Contents**UNITED THERAPEUTICS CORPORATION****Notes to Consolidated Financial Statements (Continued)****10. Stockholders' Equity (Continued)**

Related share-based compensation expense for the year ended December 31, 2012 was \$240,100. We estimate the fair value of the shares of our common stock to be purchased under the ESPP using the Black-Scholes-Merton model, which requires us to make subjective judgments in developing inputs that could materially impact share-based compensation expense.

The weighted average assumptions used to estimate the fair value of the shares to be purchased under our ESPP are as follows:

	<b>Initial Offering Period beginning September 5, 2012</b>
Expected volatility	29.0%
Risk-free interest rate	0.1%
Expected term (in years)	0.5
Expected dividend yield	0.0%
Expected forfeiture rate	4.6%

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Table of Contents**UNITED THERAPEUTICS CORPORATION****Notes to Consolidated Financial Statements (Continued)****10. Stockholders' Equity (Continued)***Earnings per Share*

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

	Year Ended December 31,		
	2012	2011	2010
<b>Numerator:</b>			
Income from continuing operations	\$ 304,442	\$ 217,243	\$ 111,206
Income (loss) from discontinued operations		625	(5,290)
Net income	\$ 304,442	\$ 217,868	\$ 105,916
<b>Denominator:</b>			
Weighted average outstanding shares basic	52,093	57,163	56,142
<b>Effect of dilutive securities(1):</b>			
Convertible Senior Notes	218	569	2,131
Warrants		263	
Stock options	969	1,400	1,243
Weighted average shares diluted	53,280	59,395	59,516
<b>Earnings per common share:</b>			
<b>Basic</b>			
Continuing operations	\$ 5.84	\$ 3.80	\$ 1.98
Discontinued operations	\$ 0.00	\$ 0.01	\$ (0.09)
Net income per basic common share	\$ 5.84	\$ 3.81	\$ 1.89
<b>Diluted</b>			
Continuing operations	\$ 5.71	\$ 3.66	\$ 1.87
Discontinued operations	\$ 0.00	\$ 0.01	\$ (0.09)
Net income per diluted common share	\$ 5.71	\$ 3.67	\$ 1.78
Stock options and warrants excluded from calculation(2)	11,862	16,299	13,532

(1) Calculated using the treasury stock method.

(2) Certain stock options and shares associated with our convertible senior notes, convertible note hedge and warrants have been excluded from the calculation as their impact would be antidilutive.

*Share Repurchases*

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In October 2011, our Board of Directors approved a share repurchase program authorizing up to \$300.0 million in aggregate repurchases of our common stock at our discretion, over a two-year period ending in October 2013 (Repurchase Program). In connection with the Repurchase Program, we paid \$212.0 million for an accelerated share repurchase agreement (ASR) entered into with DB London in October 2011, under which we repurchased approximately 4.7 million shares of our common stock in

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**UNITED THERAPEUTICS CORPORATION**

**Notes to Consolidated Financial Statements (Continued)**

**10. Stockholders' Equity (Continued)**

October 2011. In May 2012, we completed the Repurchase Program by acquiring approximately 2.0 million shares of our common stock at an aggregate cost of \$88.0 million.

In June 2012, our Board of Directors authorized the repurchase of up to an additional \$100.0 million of our common stock (2012 Repurchase Program). The 2012 Repurchase Program became effective for a one-year period beginning July 31, 2012. In November 2012, we completed the 2012 Repurchase Program by acquiring approximately 2.0 million shares of our common stock at an aggregate cost of \$100.0 million.

On February 4, 2013, we announced that our Board of Directors authorized a new share repurchase program for up to \$420.0 million in aggregate repurchases of our common stock in open market or privately negotiated transactions from time to time at our discretion. The repurchase authorization will become effective over a one-year period beginning on March 4, 2013.

***Shareholder Rights Plan***

In June 2008, we entered into an Amended and Restated Rights Agreement with The Bank of New York as Rights Agent (the Plan), which amended and restated our original Rights Agreement dated December 17, 2000. The Plan, as amended and restated, extended the expiration date of the Preferred Share Purchase Rights (Rights) from December 29, 2010 to June 26, 2018, and increased the purchase price of each Right from \$64.75 to \$400.00, respectively. 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. As of December 31, 2012, we have not issued any shares of our Series A Preferred Stock.



Table of Contents**UNITED THERAPEUTICS CORPORATION****Notes to Consolidated Financial Statements (Continued)****11. Income Taxes**

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

	Year Ended December 31,		
	2012	2011	2010
<b>Current:</b>			
Federal	\$ 83,905	\$ 54,132	\$ 25,046
State	13,949	8,948	1,792
Foreign	659	544	846
<b>Total current</b>	<b>98,513</b>	<b>63,624</b>	<b>27,684</b>
<b>Deferred</b>			
Federal	37,259	11,228	(1,614)
State	(415)	(2,428)	1,881
Foreign	182	641	(1,289)
<b>Total deferred</b>	<b>37,026</b>	<b>9,441</b>	<b>(1,022)</b>
<b>Other non-current</b>			
Federal	573	7,605	15,672
State	114	1,621	1,068
Foreign	3	(417)	543
<b>Total other</b>	<b>690</b>	<b>8,809</b>	<b>17,283</b>
<b>Total income tax expense</b>	<b>\$ 136,229</b>	<b>\$ 81,874</b>	<b>\$ 43,945</b>

Presented below is a reconciliation of income taxes computed at the statutory federal tax rate to income tax expense (benefit) as reported (in thousands):

	Year Ended December 31,		
	2012	2011	2010
Federal tax provision computed at 35%	\$ 154,235	\$ 105,018	\$ 54,302
State tax provision, net of federal tax provision	9,149	5,549	1,437
General business credits	(10,980)	(15,776)	(14,759)
Incentive stock option expense	(479)	(290)	(1,201)
Section 199 deduction	(15,629)	(8,091)	(3,627)
Nondeductible compensation expense	2,609	(2,607)	7,342
Nondeductible expenses	(2,676)	(1,929)	451
<b>Total income tax expense</b>	<b>\$ 136,229</b>	<b>\$ 81,874</b>	<b>\$ 43,945</b>

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## UNITED THERAPEUTICS CORPORATION

## Notes to Consolidated Financial Statements (Continued)

**11. Income Taxes (Continued)**

Components of the net deferred tax asset are as follows (in thousands):

	December 31,	
	2012	2011
Deferred tax assets:		
General business credits	\$ 25,834	\$ 72,188
Impairment losses on investments	2,884	2,892
Realized losses on marketable investments	2,095	2,101
License fees capitalized for tax purposes	74,964	69,720
Nonqualified stock options	30,872	31,463
SERP	14,594	12,164
STAP awards	20,238	21,502
Other	31,534	22,015
Total deferred tax assets	203,015	234,045
Deferred tax liabilities:		
Plant and equipment principally due to differences in depreciation	(31,428)	(28,416)
Other	(1,221)	(1,227)
Net deferred tax asset before valuation allowance	170,366	204,402
Valuation allowance	(5,665)	(5,458)
Net deferred tax assets	\$ 164,701	\$ 198,944

Deferred tax assets are reduced by a valuation allowance when, in our judgment, it is more likely than not that some portion or all of the deferred tax assets will not be realized. In evaluating our ability to realize deferred tax assets, we consider all available positive and negative evidence. Accordingly, we consider past operating results, forecasts of earnings and taxable income, the reversal of temporary differences and any prudent and feasible tax planning strategies. Future increases in the valuation allowance would result in a corresponding charge to earnings in the period such a determination is made. Conversely, future reductions to the valuation allowance would result in the recognition of a tax benefit in the period we conclude a reduction is warranted.

As of December 31, 2012, we had business tax credit carryforwards of approximately \$25.8 million. These carryforwards expire in 2031 and 2032. All business tax credit carryforwards generated in prior years that were subject to limitations on their use in accordance with Internal Revenue Code Section 382 (Section 382) have been utilized. We are currently reviewing our stock trading history for the year ended December 31, 2012 to ascertain whether any further ownership changes have occurred pursuant to Section 382.

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## UNITED THERAPEUTICS CORPORATION

## Notes to Consolidated Financial Statements (Continued)

**11. Income Taxes (Continued)**

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

Unrecognized tax benefits at January 1, 2012	\$ 1,733
Gross increases tax positions in prior period	146
Gross decreases tax positions in prior period	(368)
Gross increases tax positions in the current period	
Gross decreases tax positions in current period	
Settlements	
Lapse of statute of limitations	
Unrecognized tax benefits at December 31, 2012	\$ 1,511
Unrecognized tax benefits at January 1, 2011	\$ 7,406
Gross increases tax positions in prior period	500
Gross decreases tax positions in prior period	(7,406)
Gross increases tax positions in the current period	1,233
Gross decreases tax positions in the current period	
Settlements	
Lapse of statute of limitations	
Unrecognized tax benefits at December 31, 2011	\$ 1,733
Unrecognized tax benefits at January 1, 2010	\$ 6,736
Gross increases tax positions in prior period	670
Gross decreases tax positions in prior period	
Gross increases tax positions in the current period	
Gross decreases tax positions in the current period	
Settlements	
Lapse of statute of limitations	
Unrecognized tax benefits at December 31, 2010	\$ 7,406

During the year ended December 31, 2011, the Internal Revenue Service (IRS) completed its audits of our 2009 and 2008 tax years and based on the results of these audits, we decreased our reserves for uncertain tax positions by \$7.4 million. Included in unrecognized tax benefits at December 31, 2012, 2011 and 2010, is \$1.0 million, \$1.3 million and \$453,000, respectively, of tax benefits that, if recognized, would impact the effective tax rate. For the year ended December 31, 2012, we accrued \$35,000 in interest expense relating to uncertain state tax positions. For the years ended December 31, 2011 and December 31, 2010, we did not accrue, or recognize, any interest and penalties related to uncertain tax positions.

We are subject to federal and state taxation in the United States and various foreign jurisdictions. Currently, our 2011 and 2010 tax years are subject to examination by the IRS and our tax years from 2009 to 2011 are subject to examination by state taxing authorities. We are unaware of any positions for which it is reasonably possible that the total amounts of unrecognized tax benefits will significantly increase or decrease within the next twelve months.

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## UNITED THERAPEUTICS CORPORATION

## Notes to Consolidated Financial Statements (Continued)

**12. Employee Benefit Plans***Supplemental Executive Retirement Plan*

We maintain the United Therapeutics Corporation Supplemental Executive Retirement Plan (SERP) to provide retirement benefits to certain senior members of our management team.

Participants who retire at age 60 or older are eligible to receive monthly payments based on an average of their total gross base salary over the last 36 months of active employment, subject to certain adjustments. Related benefit payments commence on the first day of the sixth month after retirement and will continue through the remainder of the participant's life. Alternatively, participants can elect to receive a lump sum distribution equal to the present value of the estimated monthly payments that would have been received upon retirement. As of December 31, 2012 and 2011, all SERP participants had elected to receive a lump sum distribution. Participants who terminate employment for any reason other than death, disability, or change in control prior to age 60 will not be entitled to any benefits under the SERP.

To help fund our obligations under the SERP, we maintain the United Therapeutics Corporation Supplemental Executive Retirement Plan Rabbi Trust Document (Rabbi Trust). Participants of the SERP will have no preferred claim on, nor any beneficial ownership interest in, any assets of the Rabbi Trust. The balance in the Rabbi Trust was \$5.1 million as of December 31, 2012 and 2011. Investments held in the Rabbi Trust are included under restricted marketable investments and cash on our consolidated balance sheets.

We recognize the unfunded balance of the SERP as a liability on our consolidated balance sheets. Since we do not fund the SERP, the liability is equal to the projected benefit obligation as measured at the end of each fiscal year. Expenses related to the SERP are capitalized as part of inventory and also reported within selling, general and administrative and research and development expenses in the accompanying consolidated statements of operations.

A reconciliation of the beginning and ending balances of the projected benefit obligation is presented below (in thousands):

	Year Ended	
	December 31,	
	2012	2011
Projected benefit obligation at the beginning of the year	\$ 32,952	\$ 26,427
Service cost	4,315	4,255
Interest cost	1,475	1,356
Plan amendments		1,597
Actuarial loss (gain)	8,464	(683)
Projected benefit obligation at the end of the year	\$ 47,206	\$ 32,952
Fair value of plan assets at the end of the year		
Unfunded at end of the year(1)	\$ 47,206	\$ 32,952

(1) Included within other liabilities on our consolidated balance sheets.

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