IRONWOOD PHARMACEUTICALS INC
Form 10-K
February 18, 2015

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2014

OR

o **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 001-34620

IRONWOOD PHARMACEUTICALS, INC.

(Exact name of registrant as specified in its charter)

Delaware	**04-3404176**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)
301 Binney Street Cambridge, Massachusetts	**02142**
(Address of Principal Executive Offices)	(Zip Code)

Registrant's telephone number, including area code: **(617) 621-7722**

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

Title of each class	**Name of each exchange on which registered**
Class A common stock, $0.001 par value	The NASDAQ Stock Market LLC (NASDAQ Global Select Market)

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

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

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

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 ý No o

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

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

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.

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

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

Aggregate market value of voting stock held by non-affiliates of the Registrant as of June 30, 2014: $2,028,982,083

As of February 5, 2015, there were 125,259,060 shares of Class A common stock outstanding and 15,901,272 shares of Class B common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE:

Portions of the definitive proxy statement for our 2015 Annual Meeting of Stockholders are incorporated by reference into Part III of this report.

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NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K, including the sections titled "Business," "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" contains forward-looking statements. All statements contained in this Annual Report on Form 10-K other than statements of historical fact are forward-looking statements. Forward-looking statements include statements regarding our future financial position, business strategy, budgets, projected costs, plans and objectives of management for future operations. The words "may," "continue," "estimate," "intend," "plan," "will," "believe," "project," "expect," "seek," "anticipate" and similar expressions may identify forward-looking statements, but the absence of these words does not necessarily mean that a statement is not forward-looking. These forward-looking statements include, among other things, statements about:

- the demand and market potential for linaclotide in the United States, or the U.S. (LINZESS®), in the European Union, or the E.U. (CONSTELLA®), and in other countries where it is approved for marketing;
- the timing, investment and associated activities involved in commercializing LINZESS by us and Actavis plc in the U.S., including our direct-to-consumer education program;
- the timing and execution of the launches and commercialization of CONSTELLA in the E.U.;
- the timing, investment and associated activities involved in developing, launching, and commercializing linaclotide by us and our partners worldwide;
- our ability and the ability of our partners to secure and maintain adequate reimbursement for linaclotide;
- the ability of our partners and third-party manufacturers to manufacture and distribute sufficient amounts of linaclotide on a commercial scale;
- our expectations regarding U.S. and foreign regulatory requirements for linaclotide and our product candidates, including our post-approval, nonclinical and clinical post-marketing plan with the Food and Drug Administration, or the FDA, to understand linaclotide's efficacy and safety in pediatric patients;
- our partners' ability to obtain foreign regulatory approval of linaclotide and the ability of all of our product candidates to meet existing or future regulatory standards;
- the safety profile and related adverse events of linaclotide and our product candidates;
- the therapeutic benefits and effectiveness of linaclotide and our product candidates and the potential indications and market opportunities therefor;
- our ability to obtain and maintain intellectual property protection for linaclotide and our product candidates and the strength thereof;
- the ability of our partners to perform their obligations under our collaboration and license agreements with them;

our plans with respect to the development, manufacture or sale of our product candidates and the associated timing thereof, including the design and results of pre-clinical and clinical studies;

the in-licensing or acquisition of externally discovered businesses, products or technologies;

our expectations as to future financial performance, expense levels, payments, tax obligations, capital raising and liquidity sources, and real estate needs, as well as the timing thereof;

inventory levels and write downs and the drivers thereof;

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our ability to compete with other companies that are or may be developing or selling products that are competitive with our products and product candidates;

the status of government regulation in the life sciences industry, particularly with respect to healthcare reform;

trends and challenges in our potential markets;

our ability to attract and motivate key personnel; and

other factors discussed elsewhere in this Annual Report on Form 10-K.

Any or all of our forward-looking statements in this Annual Report on Form 10-K may turn out to be inaccurate. These forward-looking statements may be affected by inaccurate assumptions or by known or unknown risks and uncertainties, including the risks, uncertainties and assumptions identified under the heading "Risk Factors" in this Annual Report on Form 10-K. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this Annual Report on Form 10-K may not occur as contemplated, and actual results could differ materially from those anticipated or implied by the forward-looking statements.

You should not unduly rely on these forward-looking statements, which speak only as of the date of this Annual Report on Form 10-K. Unless required by law, we undertake no obligation to publicly update or revise any forward-looking statements to reflect new information or future events or otherwise. You should, however, review the factors and risks we describe in the reports we will file from time to time with the United States Securities and Exchange Commission, or the SEC, after the date of this Annual Report on Form 10-K.

NOTE REGARDING TRADEMARKS

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PART I

Item 1. ***Business***

Our Company

We are an entrepreneurial pharmaceutical company focused on creating medicines that make a difference for patients, building value to earn the continued support of our fellow shareholders, and empowering our team to passionately pursue excellence. If we do these things well, we hope to earn the right to continue doing them and, one step at a time, build an enduring pharmaceutical company that helps patients lead better lives.

Our core strategy is to establish a leading gastrointestinal, or GI, therapeutics company, leveraging our development and commercial capabilities in addressing GI disorders as well as our pharmacologic expertise in guanylate cyclase, or GC, pathways. This expertise is based on our work advancing our lead product, linaclotide, which is the first, and to date, only product approved by the U.S. Food and Drug Administration, or FDA, in a new class of GI medicines called guanylate cyclase type-C, or GC-C, agonists. Linaclotide is available to adult men and women suffering from irritable bowel syndrome with constipation, or IBS-C, or chronic idiopathic constipation, or CIC, in the United States, or the U.S., under the trademarked name LINZESS, and to adult men and women suffering from IBS-C in the European Union, or the E.U., under the trademarked name CONSTELLA. Linaclotide is also being developed and commercialized in other parts of the world by certain of our partners. We and our U.S. partner Actavis plc, or Actavis, are also exploring development opportunities to enhance the clinical profile of LINZESS by seeking to expand its utility in its indicated populations, as well as studying linaclotide in additional indications and populations and in new formulations to assess its potential to treat various GI conditions. In addition to linaclotide-based opportunities, we are advancing multiple GI development programs as well as further leveraging our pharmacological expertise in GC pathways to advance a second GC program targeting soluble guanylate cyclase, or sGC. sGC is a validated mechanism with the potential for broad therapeutic utility and multiple opportunities for product development in cardiovascular disease and other indications.

For the foreseeable future, we intend to play an active role in the commercialization of our products in the U.S., and to establish a strong global brand by out-licensing commercialization rights in other territories to high-performing partners. We believe in the long-term value of our drug candidates, so we seek collaborations that provide meaningful economics and incentives for us and any potential partner. Furthermore, we seek partners who share our values, culture, processes and vision for our products, which we believe will enable us to work with those partners successfully for the entire potential patent life of our drugs.

We were incorporated in Delaware on January 5, 1998 as Microbia, Inc. On April 7, 2008, we changed our name to Ironwood Pharmaceuticals, Inc. To date, we have dedicated substantially all of our activities to the research, development and commercialization of linaclotide, as well as to the research and development of our other product candidates.

Linaclotide

We have one marketed product, linaclotide, which is available in the U.S. and Mexico under the trademarked name LINZESS and is available in certain European countries and Canada under the trademarked name CONSTELLA. Linaclotide is also being developed and commercialized in other parts of the world by certain of our partners.

Linaclotide provides patients and healthcare practitioners with a treatment option for adults in the U.S. and certain other countries with IBS-C and CIC, GI disorders that affect millions of sufferers worldwide, according to our analysis of studies performed by N.J. Talley (published in 1995 in the *American Journal of Epidemiology*), P.D.R. Higgins (published in 2004 in the *American Journal of*

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Gastroenterology) and A.P.S. Hungin (published in 2003 in *Alimentary Pharmacology and Therapeutics*) as well as 2007 U.S. census data.

In August 2012, the FDA approved LINZESS as a once-daily treatment for adult men and women suffering from IBS-C or CIC. We and Forest Laboratories, Inc., or Forest, began commercializing LINZESS in the U.S. in December 2012. In July 2014, Actavis completed its acquisition of Forest. Our collaboration for the development and commercialization of linaclotide in North America remains in effect.

In November 2012, the European Commission granted marketing authorization to CONSTELLA for the symptomatic treatment of moderate to severe IBS-C in adults. CONSTELLA is the first, and to date, only drug approved in the E.U. for IBS-C. Our European partner, Almirall, S.A., or Almirall, began commercializing CONSTELLA in Europe in the second quarter of 2013. Currently, CONSTELLA is commercially available in certain European countries, including the United Kingdom, Italy and Spain.

In December 2013 and February 2014, linaclotide was approved in Canada and Mexico, respectively, as a treatment for adult women and men suffering from IBS-C or CIC. Actavis has exclusive rights to commercialize linaclotide in Canada as CONSTELLA and, through a sublicense from Actavis, Almirall has exclusive rights to commercialize linaclotide in Mexico as LINZESS. In May 2014, Actavis began commercializing CONSTELLA in Canada and in June 2014, Almirall began commercializing LINZESS in Mexico.

Astellas Pharma Inc., or Astellas, our partner in Japan, is developing linaclotide for the treatment of patients with IBS-C in its territory. In October 2014, Astellas initiated a double-blind, placebo-controlled Phase III clinical trial of linaclotide in adult patients with IBS-C. We and AstraZeneca AB, or AstraZeneca, are co-developing linaclotide in China, Hong Kong and Macau, with AstraZeneca having primary responsibility for the local operational execution. In the third quarter of 2013, we and AstraZeneca initiated a double-blind, placebo-controlled Phase III clinical trial of linaclotide in adult patients with IBS-C. We continue to assess alternatives to bring linaclotide to IBS-C and CIC sufferers in the parts of the world outside of our partnered territories.

We and Actavis are also exploring development opportunities to enhance the clinical profile of LINZESS by seeking to expand its utility in its indicated populations, as well as studying linaclotide in additional indications and populations and in new formulations to assess its potential to treat various GI conditions.

Upon FDA-approval of LINZESS in the U.S., we received five years of exclusivity under the Drug Price Competition and Patent Term Restoration Act of 1984, or the Hatch-Waxman Act. In addition, LINZESS is covered by a U.S. composition of matter patent that expires in 2024, subject to possible patent term extension to 2026, as well as two additional patents covering the commercial formulation of LINZESS and methods of using this formulation to treat patients with IBS-C or CIC, both of which expire in 2031. Linaclotide is also covered by E.U. and Japanese composition of matter patents, both of which expire in 2024, subject to possible patent term extension.

Linaclotide Partners

We have pursued a partnering strategy for commercializing linaclotide that has enabled us to retain significant oversight over linaclotide's development and commercialization worldwide, share the costs with collaborators whose capabilities complement ours, and retain a significant portion of linaclotide's future long-term value. As of December 31, 2014, licensing fees, milestones, royalties and related equity investments from our linaclotide partners totaled approximately $376.6 million. In addition, we and Actavis jointly fund the development and commercialization of LINZESS in the U.S., sharing equally in any net profits or losses, and we and AstraZeneca jointly fund the development and

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commercialization of linaclotide in China, Hong Kong and Macau, with AstraZeneca receiving 55% of the net profits or net losses until a specified commercial milestone is achieved, at which point the net profits or losses are shared equally. Such reimbursements for our development and commercialization costs received from Actavis or AstraZeneca are excluded from the amount above.

Actavis plc (formerly Forest Laboratories, Inc.). In September 2007, we entered into a collaboration agreement with Forest to develop and commercialize linaclotide for the treatment of IBS-C, CIC and other GI conditions in North America. In July 2014, Actavis completed its acquisition of Forest. Our collaboration for the development and commercialization of linaclotide in North America remains in effect. Under the terms of the collaboration agreement, we and Actavis are jointly and equally funding the development and commercialization of LINZESS in the U.S., with equal share of any profits or losses. Additionally, we granted Actavis exclusive rights to develop and commercialize linaclotide in Canada and Mexico in which we receive royalties in the mid-teens percent on net sales in those countries. Actavis is solely responsible for the further development, regulatory approval and commercialization of linaclotide in those countries and funding any costs. In September 2012, Actavis sublicensed its commercialization rights in Mexico to Almirall. Total licensing, milestone payments and related equity investments to us under the Actavis collaboration agreement could total up to $330.0 million, including the $205.0 million that Actavis has already paid to us in license fees and development-related milestones and the $25.0 million of our capital stock that Actavis has already purchased.

Almirall, S.A. In April 2009, we entered into a license agreement with Almirall to develop and commercialize linaclotide in Europe (including the Commonwealth of Independent States and Turkey) for the treatment of IBS-C, CIC and other GI conditions. In June 2013 and February 2014, we and Almirall amended our license agreement to, among other things, expand the milestone payments payable to us to now include both launch-related and certain sales-related milestones and to adjust the royalty structure. As a result, if linaclotide is successfully commercialized in the Almirall territory, total licensing, milestone payments and related equity investments to us could now total up to $118.0 million, including the $57.0 million, net of foreign withholding taxes, that Almirall has already paid to us in development-related milestones, the $15.0 million of our capital stock that Almirall has already purchased, and the $4.0 million in milestone payments from Almirall related to the commercial launches in the United Kingdom, Germany, Italy and Spain. Almirall will pay us gross royalties based on sales volume in the Almirall territory, beginning in the low-twenties percent and escalating to the mid-forties percent through April 2017, and thereafter beginning in the mid-twenties percent and escalating to the mid-forties percent at lower sales thresholds than in the period through April 2017. In each case, these royalty payments are reduced by the transfer price paid for the active pharmaceutical ingredient, or API, included in the product actually sold in the Almirall territory and other contractual deductions.

Astellas Pharma Inc. In November 2009, we entered into a license agreement with Astellas to develop and commercialize linaclotide for the treatment of IBS-C, CIC and other GI conditions in Japan, South Korea, Taiwan, Thailand, the Philippines and Indonesia. As a result of an amendment to the license agreement executed in March 2013, we regained rights to linaclotide in South Korea, Taiwan, Thailand, the Philippines and Indonesia. If linaclotide is successfully developed and commercialized in the Astellas territory, total licensing and milestone payments to us could total up to $75.0 million, including the $30.0 million up-front licensing fee and the $15.0 million development milestone that have already been paid to us. If Astellas receives approval to market and sell linaclotide, Astellas will pay us gross royalties which escalate based on sales volume in the Astellas territory, beginning in the low-twenties percent, less the transfer price paid for the API included in the product actually sold in the Astellas territory and other contractual deductions.

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AstraZeneca AB. In October 2012, we entered into a collaboration with AstraZeneca to co-develop and co-commercialize linaclotide in China, Hong Kong and Macau. Under the terms of the agreement, we and AstraZeneca are jointly funding the development and commercialization of linaclotide in the AstraZeneca territory, with AstraZeneca receiving 55% of the net profits or incurring 55% of the net losses until a certain specified commercial milestone is achieved, at which time profits or losses will be shared equally thereafter. If linaclotide is successfully developed and commercialized in China, total licensing and milestone payments to us under the collaboration agreement could total up to $150.0 million, including the $25.0 million that AstraZeneca has already paid to us. As part of the collaboration, Ironwood's sales force promoted AstraZeneca's NEXIUM® (esomeprazole magnesium), one of AstraZeneca's products, in the U.S. through May 2014.

We have retained all rights to linaclotide outside of the territories discussed above and continue to evaluate partnership opportunities in those unpartnered regions.

Pipeline

We have ongoing efforts to identify product candidates that leverage our development and commercial expertise in an effort to establish a leading GI therapeutics company. Millions of patients suffer from highly symptomatic disorders of the upper or lower GI tract and many of these patients are actively seeking care and new treatment options. Through the discovery, development and commercialization of linaclotide, a GC-C agonist, we have gained strong development and commercial capabilities in addressing GI disorders as well as pharmacologic expertise in GC pathways. We and Actavis are exploring development opportunities to enhance the clinical profile of LINZESS by seeking to expand its utility in its indicated populations, as well as studying linaclotide in additional indications and populations and in new formulations to assess its potential to treat various GI conditions. In addition to working to maximize the utility of linaclotide, we are advancing multiple GI development programs as well as further leveraging our pharmacological expertise in GC pathways that we established through the development of linaclotide to advance a second GC program targeting sGC. sGC is a validated mechanism with the potential for broad therapeutic utility and multiple opportunities for product development in cardiovascular disease and other indications.

Our current product candidates have been discovered internally. We believe our discovery team has created a number of promising candidates over the past few years and has developed an extensive intellectual property estate in these areas. In addition, we are actively engaged in identifying and evaluating and licensing rights to externally -discovered drug candidates at all stages of development that fit within our core strategy. In evaluating potential assets, we apply the same investment criteria as those used for investments in internally-discovered assets.

In order to successfully grow our business, we will need to overcome the enormous challenges inherent in the pharmaceutical product development model. Developing a novel therapeutic agent can take a decade or more and cost hundreds of millions of dollars, and most drug candidates fail to reach the market profitably. We recognize that most companies undertaking this endeavor fail, yet despite the significant risks and our own experiences with multiple failed drug candidates, we are enthusiastic and passionate about our mission to create medicines that make a difference for patients. To achieve our mission, we continue to build a team, a culture and processes centered on creating and marketing important new drugs. If we are successful getting medicines to patients and generating substantial returns for our stockholders, we will continue to reinvest a portion of our future cash flows into our research and development efforts in order to accelerate and enhance our ability to bring new products to market.

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Our programs include the following:

The status of the development programs in the table above represents the ongoing phase of development, and does not correspond to the initiation or completion of a particular phase. In its current target product profile, IW-9179 is a wholly owned asset.

GI Platform

Linaclotide

72 mcg for CIC in Adults. In November 2014, we and Actavis initiated a randomized, double-blind, placebo-controlled, multi-site Phase III clinical trial in the U.S. to assess the efficacy and safety of linaclotide in a 72 mcg dose in adult patients with CIC. If approved, the 72 mcg dose would provide a broader range of treatment options to physicians and adult CIC patients.

Opioid-induced Constipation, or OIC. Opioids are a commonly prescribed class of pain medications that may reduce fluids and movement within the intestine, resulting in constipation. Symptoms of OIC may include reduced bowel movement frequency, straining, incomplete evacuation and a sensation of bowel obstruction. Considering information published in 2010 by M. Camilleri in *Clin and Syst Rev* and in 2010 by S. Panchal, et. al. in *Int J Clin Prac* along with market analytics data, we estimate that more than 8 million people in the U.S. suffer from OIC. We are evaluating linaclotide to see if it has the potential to provide relief of the GI dysfunction associated with OIC. In October 2014, we and Actavis initiated a randomized, double-blind, placebo-controlled Phase II clinical study evaluating linaclotide in adult patients with this category of constipation.

Pediatrics. We and Actavis have established a nonclinical and clinical post-marketing plan with the FDA to understand the safety and efficacy of LINZESS in pediatric patients. The first step in this plan was to undertake certain additional nonclinical studies, which we have completed. The FDA has concluded that the nonclinical data from these additional studies do not present a reason not to proceed with clinical studies in older pediatric patients (age 12 and above). We and Actavis are working with the FDA on a plan for clinical pediatric studies.

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Colon Cancer Prevention. Colon cancer is the third most common non-skin cancer in both men and women and is the second leading cause of cancer-related mortality in the U.S., according to the National Cancer Institute, or NCI. In partnership with the NCI, linaclotide is being explored in a Phase I biomarker study. This trial is designed to assess the colorectal bioactivity of linaclotide in healthy volunteers, and to inform the feasibility and design of a study to evaluate the potential for linaclotide to prevent colorectal cancer. The NCI is funding and managing the clinical study.

Linaclotide colonic release

We and Actavis are exploring targeted delivery of orally-administered linaclotide to the distal small intestine and colon, which could potentially enhance lower abdominal symptom relief for adult patients with IBS-C. We are also exploring linaclotide colonic release for use in additional GI disorders where lower abdominal pain is a predominant symptom, including other IBS subtypes, ulcerative colitis and diverticulitis, among others. Linaclotide colonic release formulation development is ongoing.

Linaclotide Ex-U.S.

In addition to our linaclotide development efforts in the U.S. with Actavis, in the third quarter of 2013 we and AstraZeneca initiated a double-blind, placebo-controlled Phase III clinical trial of linaclotide in adult patients with IBS-C for China, and in the fourth quarter of 2014, Astellas initiated a double-blind, placebo-controlled Phase III clinical trial of linaclotide in adult patients with IBS-C for Japan.

IW-9179

We are investigating IW-9179, a GC-C agonist designed to target upper GI conditions, for the treatment of gastroparesis and functional dyspepsia.

Gastroparesis. Gastroparesis is an upper GI disorder in which the muscles and/or nerves of the stomach do not function properly, which disrupts the functional activities of the stomach. Diabetic gastroparesis, which is the focus of our Phase IIa study discussed below, is a condition in which symptoms of gastroparesis occur in patients with type 1 or type 2 diabetes, and has additional harmful effects on glycemic control, as well as secondary effects on organs, which may lead to increased mortality. Information published in 2010 in *Neuro & Mot* by Parkman HP *et al* provides that gastroparesis symptoms are reported by approximately five to 12 percent of diabetic patients. In December 2014, we initiated a randomized, placebo-controlled, multi-site Phase IIa clinical study evaluating whether IW-9179 can provide symptomatic relief to adult patients with diabetic gastroparesis.

Functional Dyspepsia. Functional dyspepsia, or FD, is an upper GI disorder characterized by key symptoms of epigastric pain, epigastric bloating, postprandial fullness, epigastric burning, nausea, belching, and early satiety. Based upon a study published in 2005 in *Neuro & Mot* by G.R. Locke, it is estimated that approximately 35 million people suffer from FD in the U.S. In October 2014, we presented initial data from a randomized, double-blind Phase IIa clinical study evaluating IW-9179 for the treatment of functional dyspepsia. Patients treated with IW-9179 reported a numerically greater improvement from baseline, compared with placebo-treated patients, on six out of seven FD symptoms evaluated, including epigastric pain, epigastric bloating, postprandial fullness, early satiation, nausea and belching. The most common adverse event in IW-9179-treated patients was diarrhea. Enrollment in this study was limited by stringent enrollment criteria that sought to identify patients suffering only from GI symptoms of FD. These data inform our continued work with GI experts and regulatory authorities to define the path to bring forward new therapies in FD.

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IW-3718

Refractory GERD. According to a study published in 2010 in *Alimentary Pharmacology & Therapeutics* by H. El-Sarag, there are an estimated eight million Americans who suffer regularly from symptoms of gastroesophageal reflux disease, or GERD, such as heartburn and regurgitation, despite receiving the current standard of care of treatment with a proton pump inhibitor, or PPI, to suppress stomach acid. Research suggests some refractory GERD patients may experience reflux of bile from the intestine into the stomach and esophagus. IW-3718 is a gastric retentive formulation of a bile acid sequestrant designed to bind over an extended period of time to bile that refluxes into the stomach and upper small intestine, potentially providing symptomatic relief in refractory GERD. In February 2015, we reported top-line data from an exploratory Phase IIa clinical study of IW-3718 in patients with refractory GERD. Data from this study demonstrated encouraging improvements in relief of heartburn and certain other upper gastrointestinal symptoms often associated with refractory GERD.

sGC Platform

We are advancing a second GC program targeting sGC, a validated mechanism with the potential for broad therapeutic utility and multiple opportunities for product development. To date, we have identified two sGC development candidates, IW-1973 and IW-1701, which we are exploring for utility in cardiovascular disease. In February 2015, we initiated a Phase I clinical study with IW-1973.

Owner-related Business Principles

We encourage all current and potential stockholders to read the owner-related business principles below that guide our overall strategy and decision making.

1. Ironwood's stockholders own the business; all of our employees work for them.

Each of our employees also has equity in the business, aligning their interests with their fellow stockholders. As employees and co-owners of Ironwood, our management and employee team seek to effectively allocate scarce stockholder capital to maximize the average annual growth of per share value.

Through our policies and communication, we seek to attract like-minded owner-oriented stockholders. We strive to effectively communicate our views of the business opportunities and risks over time so that entering and exiting stockholders are doing so at a price that approximately reflects our intrinsic value.

2. We believe we can best maximize long-term stockholder value by building a great pharmaceutical franchise.

We believe that Ironwood has the potential to deliver outstanding long-term returns to stockholders who are sober to the risks inherent in the pharmaceutical product lifecycle and to the potential dramatic highs and lows along the way, and who focus on superior long-term, per share cash flows.

Since the pharmaceutical product lifecycle is lengthy and unpredictable, we believe it is critical to have a long-term strategic horizon. We work hard to embed our long-term focus into our policies and practices, which may give us a competitive advantage in attracting like-minded stockholders and the highest caliber employees. Our current and future employees may perceive both financial and qualitative advantages in having their inventions or hard work result in marketed drugs that they and

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their fellow stockholders continue to own. Some of our key policies and practices that are aligned with this imperative include:

a. Our dual class equity voting structure (which provides for super-voting rights of our pre-IPO stockholders only in the event of a change of control vote) is designed to concentrate change of control decisions in the hands of long-term focused owners who have a history of experience with us.

b. Compensation is weighted to equity over salary for all of our employees, and many employees have a significant portion of their incentive compensation in milestone-based equity grants that reward achievement of major value-creating events a number of years out from the time of grant.

c. We have adopted a change of control severance plan for all of our employees that is intended to encourage them to bring forward their best ideas by providing them with the comfort that if a change of control occurs and their employment is terminated, they will still have an opportunity to share in the economic value that they have helped create for stockholders.

d. All of the members of our board of directors are substantial investors in the company. Furthermore, each director is required to hold all shares of stock acquired as payment for his or her service as a director throughout his or her term on the board.

e. Our partnerships with Actavis, Almirall, Astellas and AstraZeneca all include standstill agreements, which serve to protect us from an unwelcome acquisition attempt by one of our partners. In addition, we have change of control provisions in our partnership agreements in order to protect the economic value of linaclotide should the acquirer of one of our partners be unable or unwilling to devote the time and resources required to maximize linaclotide's benefit to patients in their respective territory.

3. We are and will remain careful stewards of our stockholders' capital.

We work intensely to allocate capital carefully and prudently, continually reinforcing a lean, cost-conscious culture.

While we are mindful of the declining productivity and inherent challenges of pharmaceutical research and development, we intend to invest in discovery and development research for many years to come. Our singular passion is to create, develop and commercialize novel drug candidates, seeking to integrate the most successful drugmaking and marketing practices of the past and the best of today's cutting-edge technologies and basic research, development and commercialization advances.

While we hope to improve the productivity and efficiency of our drug creation efforts over time, our discovery process revolves around small, highly interactive, cross-functional teams. We believe that this is one area where our relatively small size is a competitive advantage, so for the foreseeable future, we do not expect our drug discovery team to grow beyond 100-150 scientists. We will continue to prioritize constrained resources and maintain organizational discipline. Once internally-or externally-derived candidates advance into development, compounds follow careful stage-gated plans, with further advancement depending on clear data points. Since most pharmaceutical research and development projects fail, it is critical that our teams are rigorous in making early go/no go decisions, following the data, terminating unsuccessful programs, and allocating scarce dollars and talent to the most promising efforts, thus enhancing the likelihood of late phase development success.

Our global operations and commercial teams take a similar approach to capital allocation and decision-making. By establishing redundancy at each critical node of the linaclotide global supply chain, our global operations team is mitigating against a fundamental risk inherent with pharmaceuticals unanticipated shortages of commercial product. Likewise, we have established a commercial

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organization dedicated to bringing innovative, highly-valued healthcare solutions to all of our customers. Our commercial organization works closely and methodically with our global commercialization partners, striving to maximize linaclotide's commercial potential through focused efforts aimed at educating patients, payers and healthcare providers.

4. Our financial goal is to maximize long-term per share cash flows.

Our goal is to maximize long-term cash flows per share, and we will prioritize this even if it leads to uneven short-term financial results. If and when we become profitable, we expect and accept uneven earnings growth. Our underlying product development model is risky and unpredictable, and we have no intention to advance marginal development candidates or consummate suboptimal in-license transactions in an attempt to fill anticipated gaps in revenue growth. Successful drugs can be enormously beneficial to patients and highly profitable and rewarding to stockholders, and we believe strongly in our ability to occasionally (but not in regular or predictable fashion) create and commercialize great medicines that make a meaningful difference in patients' lives.

If and when we reach profitability, we do not intend to issue quarterly or annual earnings guidance, however we plan to continue to be transparent about the key elements of our performance, including near-term operating plans and longer-term strategic goals.

Our Strategy

Our mission is to create medicines that make a difference for patients, build value to earn the continued support of our fellow shareholders, and empower our team to passionately pursue excellence. Our core strategy to achieve this mission is to establish a leading GI therapeutics company leveraging our development and commercial capabilities in addressing GI disorders as well as our pharmacologic expertise in GC pathways. Key elements of our strategy include:

attracting and incentivizing a team with a singular passion for creating, developing and commercializing medicines that can make a significant difference in patients' lives;

solidifying and expanding our position as the leader in the field of GC-C agonists;

successfully and profitably commercializing LINZESS in collaboration with Actavis in the U.S.;

leveraging our commercial capabilities across marketing, reimbursement, patient engagement and sales;

supporting our global partners to commercialize linaclotide outside of the U.S.;

harvesting the maximum value of linaclotide outside of our currently partnered territories;

exploring development opportunities to enhance the clinical profile of LINZESS by seeking to expand its utility in its indicated populations, as well as studying linaclotide in additional indications and populations and in new formulations to assess its potential to treat various GI conditions;

investing in our pipeline of novel GI product candidates and advancing a second GC program targeting sGC;

evaluating candidates outside of the company for in-licensing or acquisition opportunities;

maximizing the commercial potential of our drugs and playing an active role in their commercialization or find partners who share our vision, values, culture and processes; and

executing our strategy with our stockholders' long-term interests in mind by seeking to maximize long-term per share cash flows.

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Linaclotide

In August 2012, LINZESS became the first and only GC-C agonist approved by the FDA for the treatment of both IBS-C and CIC in adults. Linaclotide is a treatment for patients suffering from both abdominal pain associated with IBS-C and constipation symptoms associated with both IBS-C and CIC. In four Phase III clinical trials of more than 2,800 adult patients, linaclotide was demonstrated to reduce abdominal pain and constipation associated with IBS-C, as well as constipation, infrequent bowel movements, incomplete evacuation and hard stools associated with CIC. Improvements were reported in the first week of treatment and maintained throughout the 12-week treatment period. Additionally, patients reported symptoms returned within one week after discontinued use of linaclotide. LINZESS is marketed by us and Actavis in the U.S.

In November 2012, CONSTELLA became the first and only medicine approved by the European Commission for the symptomatic treatment of moderate to severe IBS-C in adults in the E.U. CONSTELLA is a once-daily capsule that improves abdominal pain/discomfort, bloating and constipation associated with IBS-C. CONSTELLA is described as a GC-C agonist with visceral analgesic and secretory activities in the product label for European use and CONSTELLA is marketed in certain European countries, including the United Kingdom, Italy and Spain, by our European partner, Almirall. In May 2014, Almirall suspended commercialization of CONSTELLA in Germany following an inability to reach agreement with the German National Association of Statutory Health Insurance Funds on a reimbursement price, and is assessing all possibilities to facilitate continued access to CONSTELLA for appropriate patients in Germany. Linaclotide is also being developed and commercialized in other parts of the world by certain of our partners.

Linaclotide is a 14 amino acid peptide agonist of GC-C, a receptor found on the luminal surface of the intestinal epithelium. As the figure below shows, activation of GC-C results in an increase of intracellular and extracellular cyclic guanosine monophosphate, or cGMP, which, based on nonclinical studies, is believed to act in two ways. First, elevation in intracellular cGMP stimulates secretion of chloride and bicarbonate into the intestinal lumen, mainly through activation of the cystic fibrosis transmembrane conductance regulator, or CFTR, ion channel, resulting in increased intestinal fluid and accelerated transit. Second, elevation in extracellular cGMP was shown to decrease the activity of

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pain-sensing nerves. The clinical relevance of the effects on pain-sensing nerves seen in nonclinical studies has not been established.

* Clinical relevance of the effect on pain fibers in nonclinical studies has not been established.

Irritable Bowel Syndrome with Constipation (IBS-C) and Chronic Idiopathic Constipation (CIC)

IBS-C and CIC are chronic, functional GI disorders that afflict millions of sufferers worldwide. IBS-C and CIC are characterized by frequent and bothersome symptoms that dramatically affect patients' daily lives. Symptoms of IBS-C include abdominal pain, discomfort or bloating and constipation symptoms (*e.g.* incomplete evacuation, infrequent bowel movements, hard/lumpy stools), while CIC is primarily characterized by constipation symptoms. Previously available treatment options primarily improved constipation, leading healthcare providers to diagnose and manage IBS-C and CIC based on stool frequency. However, patients view these conditions as multi-symptom disorders, and while laxatives can be effective at relieving constipation symptoms, they do not necessarily improve abdominal pain, discomfort or bloating, and can often exacerbate these symptoms. This disconnect between patients and physicians, amplified by patients' embarrassment to discuss all of their GI symptoms, often delays diagnosis and may compromise treatment, possibly causing additional suffering and disruption to patients' daily activities.

While estimates vary, as many as 13 million adults suffer from IBS-C and as many as 35 million adults suffer from CIC in the U.S., according to our analysis of studies published in 2005 by Andrews *et al* in *Alimentary Pharmacology & Therapeutics* and by the American College of Gastroenterology Chronic Constipation Task Force in the *American Journal of Gastroenterology.* As a result of the less than optimal treatment options previously available, patients seeking care experienced a very low level of satisfaction. Due to patients' lack of satisfaction with existing treatment options, about 70% of patients stop prescription therapy within one month, according to IMS Health. It is estimated that patients seek medical care from five or more different healthcare providers over the course of their illness with limited or no success, as shown in a 2009 study by D.A. Drossman in the *Journal of Clinical Gastroenterology*. Many of the remaining patients are too embarrassed to discuss the full range of their symptoms, or for other reasons do not see the need to seek medical care and continue to suffer in silence while unsuccessfully self-treating with fiber, over the counter, or OTC, laxatives and other remedies which improve constipation, but often exacerbate pain and bloating.

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We believe that the prevalence rates of IBS-C in Europe, China and Japan are similar to the prevalence rates in the U.S.

Linaclotide Competition

Polyethylene glycol, or PEG (such as MiraLAX®), and lactulose account for the majority of prescription laxative treatments. Both agents demonstrate an increase in stool frequency and consistency but do not improve bloating or abdominal discomfort. Clinical trials and product labels document several adverse effects with PEG and lactulose, including exacerbation of bloating, cramping and, according to L.E. Brandt in a study published in 2005 in the *American Journal of Gastroenterology*, up to a 40% incidence of diarrhea. Overall, up to 75% of patients taking prescription laxatives report not being completely satisfied with the predictability of when they will experience a bowel movement on treatment, and 50% were not completely satisfied with relief of the multiple symptoms associated with constipation, according to the J.F. Johanson study published in 2007 in *Alimentary Pharmacology & Therapeutics*.

OTC laxatives make up the majority of the IBS-C and CIC treatment market, according to a GI patient landscape survey performed in 2010 by Lieberman *et al*. Given the low barriers to access, many IBS-C and CIC sufferers try OTC fiber and laxatives, but according to this same patient landscape survey, less than half of them are very satisfied with the ability of these OTC products to manage their symptoms. Two of the largest selling OTC laxatives in the U.S., based on 2013 U.S. sales volume data from Euromonitor International, are MiraLAX and Dulcolax®.

Until the launch of LINZESS, the only available prescription therapy for IBS-C and CIC in the U.S. was Amitiza® (lubiprostone), which was approved for the treatment of CIC in 2006, for the treatment of IBS-C in 2008, and for the treatment of opioid-induced constipation in 2013. Amitiza is also approved for the treatment of CIC in the United Kingdom and Switzerland, and for the treatment of chronic constipation in Japan.

Manufacturing and Supply

We currently manage our global supply and distribution of linaclotide through a combination of contract manufacturers and collaboration partners. It is our objective to produce safe and effective medicine on a worldwide basis, with redundancy built into critical steps of the process. We believe that we have sufficient in-house expertise to manage our manufacturing and supply chain network to meet worldwide demand.

Linaclotide production consists of three phases manufacture of the API (sometimes referred to as drug substance), manufacture of drug product and manufacture of finished goods. We have entered into agreements with multiple third party manufacturers for the production of linaclotide API, as it is an objective of our strategy to maintain redundancy at critical steps in the supply chain. We believe our commercial suppliers have the capabilities to produce linaclotide API in accordance with current good manufacturing practices, or GMP, on a sufficient scale to meet our development and commercial needs.

Each of Actavis, Almirall and Astellas is responsible for drug product and finished goods manufacturing (including bottling and packaging) for its respective territory, and distributing the finished goods to wholesalers. We have an agreement with an independent third party to serve as an additional source of drug product manufacturing of linaclotide for our partnered territories and we have worked with our partners to achieve sufficient redundancy in this component of the linaclotide supply chain. Under our collaboration with AstraZeneca, we are accountable for drug product and finished goods manufacturing for China, Hong Kong and Macau.

Prior to linaclotide, there was no precedent for long-term room temperature shelf storage formulation for an orally dosed peptide to be produced in millions of capsules per year. Our efforts to

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date have led to a formulation that is both cost effective and able to meet the stability requirements for commercial pharmaceutical products. Our work in this area has created an opportunity to seek additional intellectual property protection around the linaclotide program. In conjunction with Actavis and Astellas, we have filed patent applications in the U.S. and foreign jurisdictions and have been issued two U.S. patents to protect the current commercial formulation of linaclotide as well as related formulations. The two issued U.S. patents expire in 2031. If issued, the pending patent applications would expire in 2029 or later in the U.S. and foreign jurisdictions and would be eligible for potential patent term adjustments or patent term extensions in countries where such extensions may be available.

Sales and Marketing

For the foreseeable future, we intend to develop and commercialize our drugs in the U.S. alone or with partners, and expect to rely on partners to commercialize our drugs in territories outside the U.S. In executing our strategy, our goal is to retain significant worldwide oversight over the development process and commercialization of our products, by playing an active role in their commercialization or finding partners who share our vision, values, culture and processes.

We have built our commercial capabilities, including marketing, reimbursement, patient engagement and sales, around linaclotide, with the intent to leverage these capabilities for future products. To date, we have established a high-quality commercial organization dedicated to bringing innovative, highly-valued healthcare solutions to our customers, including patients, payers, and healthcare providers.

We are coordinating efforts with all of our partners to ensure that we launch an integrated, global linaclotide brand. By leveraging the knowledge-base and expertise of our experienced commercial team and the insights of each of our linaclotide commercialization partners, we continually improve our collective marketing strategies.

Maximizing the Value of Linaclotide in the U.S.

Our objective is to establish LINZESS as the prescription product of choice for both IBS-C and CIC. We, together with our U.S. commercialization partner Actavis, are building awareness that patients suffer from multiple, highly bothersome symptoms of IBS-C or CIC. In April 2014, Ironwood and Actavis commenced an expanded direct-to-consumer patient awareness campaign for LINZESS designed to help adults in the U.S. suffering from IBS-C or CIC recognize the symptoms of their disorder, describe their symptoms to their doctor, and ask their doctor whether LINZESS can help proactively manage their disease.

Actavis has demonstrated the ability to successfully launch innovative products, penetrate primary care markets and drive the growth of multiple brands in highly competitive markets. Actavis brings large and experienced sales, national accounts, trade relations, operations and management teams providing ready access to primary care offices and key managed care accounts. Complementing Actavis' expertise, we have built strong commercial capabilities across marketing, reimbursement, patient engagement and sales. We have strong alignment with Actavis and a shared vision for LINZESS. The combined Ironwood and Actavis marketing team possesses a deep understanding of gastroenterology and primary care customers, and we continue to utilize this knowledge to develop a compelling medical message and promotional campaign in the hope of delivering an effective treatment for patients suffering with the defining symptoms of IBS-C or CIC.

Maximizing the Value of Linaclotide Outside the U.S.

We have out-licensed commercialization rights for Canada and Mexico to Actavis, Europe to Almirall and Japan to Astellas. In September 2012, Actavis sublicensed the commercialization rights in

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Mexico to Almirall. We have also partnered with AstraZeneca to co-develop and co-commercialize linaclotide in China, Hong Kong and Macau.

Almirall provides access to the highest potential European markets with an established direct presence in each of the United Kingdom, Italy, France, Germany and Spain, and also has a presence in Austria, Belgium, the Nordics, Poland, Portugal and Switzerland. Almirall is coordinating sales and marketing efforts from its central office in an effort to ensure consistency of the overall brand strategy and objectively assess performance. We believe Almirall's knowledge of the local markets is helping to facilitate regulatory access, reimbursement and market penetration through a customized approach to implementing promotional and selling campaigns in the E.U.

Astellas is one of Japan's largest pharmaceutical companies and has top commercial capabilities in both primary care and specialty categories throughout Asia. Their demonstrated ability to market innovative medicines and their growing GI franchise in Japan make them an ideal partner for Ironwood.

AstraZeneca is a world leader in GI disease medicine and operates in over 100 countries with a growing presence in emerging markets, including China where they have significant commercial and research and development capabilities. We believe that we and AstraZeneca are strongly aligned with our vision for linaclotide in this region.

We have retained all rights to linaclotide outside of the territories discussed above and we continue to evaluate partnership opportunities in those unpartnered regions.

Patents and Proprietary Rights

We actively seek to protect the proprietary technology that we consider important to our business, including pursuing patents that cover our products and compositions, their methods of use and the processes for their manufacture, as well as any other relevant inventions and improvements that are commercially important to the development of our business. We also rely on trade secrets that may be important to the development of our business.

Our success will depend significantly on our ability to obtain and maintain patent and other proprietary protection for the technology, inventions and improvements we consider important to our business; defend our patents; preserve the confidentiality of our trade secrets; and operate without infringing the patents and proprietary rights of third parties.

Linaclotide Patent Portfolio

Our linaclotide patent portfolio is currently composed of eight U.S. patents listed in the FDA publication, "Approved Drug Products with Therapeutic Equivalence Evaluations" (also known as the "Orange Book"), three granted European patents (each of which has been validated in 31 European countries), two granted Japanese patents, 27 issued patents in other foreign jurisdictions, and numerous pending provisional, U.S. non-provisional, foreign and PCT patent applications. We own or jointly own all of the issued patents and pending applications.

The issued U.S. patents, which will expire between 2024 and 2031, contain claims directed to the linaclotide molecule, pharmaceutical compositions thereof, methods of using linaclotide to treat GI disorders, processes for making the molecule, and room temperature stable formulations of linaclotide and methods of use thereof. The granted European patents, which will expire in 2024, contain claims directed to the linaclotide molecule, pharmaceutical compositions thereof and uses of linaclotide to prepare medicaments for treating GI disorders.

We have pending patent applications worldwide covering the current commercial formulation of linaclotide that, if issued, will expire in 2029 or later, based upon potential patent term adjustments.

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We have pending applications directed to linaclotide products under development that will extend patent protection, if issued, until 2034 or later. We also have pending provisional, U.S. non-provisional, foreign and PCT applications directed to linaclotide and related molecules, pharmaceutical formulations thereof, methods of using linaclotide to treat various diseases and disorders and processes for making the molecule. These additional patent applications, if issued, will expire between 2024 and 2035.

The patent term of a patent that covers an FDA-approved drug is also eligible for patent term extension, which permits patent term restoration as compensation for some of the patent term lost during the FDA regulatory review process. The Hatch-Waxman Act permits a patent term extension of a single patent applicable to an approved drug for up to five years beyond the expiration of the patent but the extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval by the FDA. Similar provisions are available in Europe and certain other foreign jurisdictions to extend the term of a patent that covers an approved drug. We have applied to extend the patent term of U.S. Patent 7,304,036, which covers linaclotide and methods of use thereof. If granted, the patent term of this patent will be extended to August 30, 2026, 14 years from the date of linaclotide's approval by the FDA.

Pipeline Patent Portfolio

Our pipeline patent portfolio relating to our GI and sGC research and development programs outside of linaclotide is currently composed of two issued U.S. patents; six issued patents in foreign jurisdictions; and numerous pending provisional, U.S. non-provisional, foreign and PCT patent applications. We own all of the issued patents and pending applications. The issued U.S. patents expire between 2028 and 2031. The foreign issued patents expire between 2027 and 2031. The pending patent applications, if issued, will expire between 2027 and 2035.

Additional Intellectual Property

In addition to the patents and patent applications related to linaclotide and our GI and sGC pipeline, we currently have four issued U.S. patents; two patents granted in foreign jurisdictions; and a number of pending provisional, U.S. non-provisional, foreign and PCT applications directed to other GC-C agonist molecules and uses thereof. We also have other issued patents and pending patent applications relating to our other research and development programs, and we are the licensee of a number of issued patents and pending patent applications.

The term of individual patents depends upon the legal term of the patents in the countries in which they are obtained. In most countries in which we file, the patent term is 20 years from the date of filing the non-provisional application. In the U.S., a patent's term may be lengthened by patent term adjustment, which compensates a patentee for administrative delays by the U.S. Patent and Trademark Office in granting a patent, or may be shortened if a patent is terminally disclaimed over an earlier-filed patent. We also expect to apply for patent term extensions for some of our patents once issued, depending upon the length of clinical trials and other factors involved in the submission of a new drug application, or NDA.

Government Regulation

In the U.S., pharmaceutical products are subject to extensive regulation by the FDA. The Federal Food, Drug, and Cosmetic Act and other federal and state statutes and regulations, govern, among other things, the research, development, testing, manufacture, storage, recordkeeping, approval, labeling, promotion and marketing, distribution, FDA post marketing requirements and assessments, post-approval monitoring and reporting, sampling, and import and export of pharmaceutical products. The FDA has very broad enforcement authority and failure to abide by applicable regulatory

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requirements can result in administrative or judicial sanctions being imposed on us, including warning letters, refusals of government contracts, clinical holds, civil penalties, injunctions, restitution, disgorgement of profits, recall or seizure of products, total or partial suspension of production or distribution, withdrawal of approval, refusal to approve pending applications, and civil or criminal prosecution.

FDA Approval Process

We believe that our product candidates will be regulated by the FDA as drugs. No manufacturer may market a new drug until it has submitted an NDA to the FDA, and the FDA has approved it. The steps required before the FDA may approve an NDA generally include:

nonclinical laboratory tests and animal tests conducted in compliance with FDA's good laboratory practice requirements;

development, manufacture and testing of active pharmaceutical product and dosage forms suitable for human use in compliance with current GMP;

the submission to the FDA of an investigational new drug application, or IND, for human clinical testing, which must become effective before human clinical trials may begin;

adequate and well-controlled human clinical trials to establish the safety and efficacy of the product for its specific intended use(s);

the submission to the FDA of an NDA;

satisfactory completion of one or more FDA inspections of the manufacturing facility or facilities at which the product, or components thereof, are produced to assess compliance with current GMP requirements and to assure that the facilities, methods and controls are adequate to preserve the product's identity, strength, quality and purity; and

FDA review and approval of the NDA.

Nonclinical tests include laboratory evaluation of the product candidate, as well as animal studies to assess the potential safety and efficacy of the product candidate. The conduct of the nonclinical tests must comply with federal regulations and requirements including good laboratory practices. We must submit the results of the nonclinical tests, together with manufacturing information, analytical data and a proposed clinical trial protocol to the FDA as part of an IND, which must become effective before we may commence human clinical trials. The IND will automatically become effective 30 days after its receipt by the FDA, unless the FDA raises concerns or questions before that time about the conduct of the proposed trial. In such a case, we must work with the FDA to resolve any outstanding concerns before the clinical trial can proceed. We cannot be sure that submission of an IND will result in the FDA allowing clinical trials to begin, or that, once begun, issues will not arise that will cause us or the FDA to suspend or terminate such trials. The study protocol and informed consent information for patients in clinical trials must also be submitted to an institutional review board for approval. An institutional review board may also require the clinical trial at the site to be halted, either temporarily or permanently, for failure to comply with the institutional review board's requirements or if the trial has been associated with unexpected serious harm to subjects. An institutional review board may also impose other conditions on the trial.

Clinical trials involve the administration of the product candidate to humans under the supervision of qualified investigators, generally physicians not employed by or under the trial sponsor's control. Clinical trials are typically conducted in three sequential phases, though the phases may overlap or be combined. In Phase I, the initial introduction of the drug into healthy human subjects, the drug is usually tested for safety (adverse effects), dosage tolerance and pharmacologic action, as well as to

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understand how the drug is taken up by and distributed within the body. Phase II usually involves studies in a limited patient population (individuals with the disease under study) to:

- evaluate preliminarily the efficacy of the drug for specific, targeted conditions;
- determine dosage tolerance and appropriate dosage as well as other important information about how to design larger Phase III trials; and
- identify possible adverse effects and safety risks.

Phase III trials generally further evaluate clinical efficacy and test for safety within an expanded patient population. The conduct of clinical trials is subject to extensive regulation, including compliance with good clinical practice regulations and guidance.

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. We may also suspend clinical trials at any time on various grounds.

The results of the nonclinical and clinical studies, together with other detailed information, including the manufacture and composition of the product candidate, are submitted to the FDA in the form of an NDA requesting approval to market the drug. FDA approval of the NDA is required before marketing of the product may begin in the U.S. If the NDA contains all pertinent information and data, the FDA will "file" the application and begin review. The review process, however, may be extended by FDA requests for additional information, nonclinical or clinical studies, clarification regarding information already provided in the submission, or submission of a risk evaluation and mitigation strategy. The FDA may refer an application to an advisory committee for review, evaluation and recommendation as to whether the application should be approved. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions. Before approving an NDA, the FDA will typically inspect the facilities at which the product candidate is manufactured and will not approve the product candidate unless GMP compliance is satisfactory. FDA also typically inspects facilities responsible for performing animal testing, as well as clinical investigators who participate in clinical trials. The FDA may refuse to approve an NDA if applicable regulatory criteria are not satisfied, or may require additional testing or information. The FDA may also limit the indications for use and/or require post-marketing testing and surveillance to monitor the safety or efficacy of a product. Once granted, product approvals may be withdrawn if compliance with regulatory standards is not maintained or problems are identified following initial marketing.

The testing and approval process requires substantial time, effort and financial resources, and our product candidates may not be approved on a timely basis, if at all. The time and expense required to perform the clinical testing necessary to obtain FDA approval for regulated products can frequently exceed the time and expense of the research and development initially required to create the product. The results of nonclinical studies and initial clinical trials of our product candidates are not necessarily predictive of the results from large-scale clinical trials, and clinical trials may be subject to additional costs, delays or modifications due to a number of factors, including difficulty in obtaining enough patients, investigators or product candidate supply. Failure by us or our collaborators, licensors or licensees, including Actavis, Almirall, Astellas and AstraZeneca, to obtain, or any delay in obtaining, regulatory approvals or in complying with requirements could adversely affect commercialization and our ability to receive product or royalty revenues.

Hatch-Waxman Act

The Hatch-Waxman Act established abbreviated approval procedures for generic drugs. Approval to market and distribute these drugs is obtained by submitting an Abbreviated New Drug Application,

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or ANDA, with the FDA. The application for a generic drug is "abbreviated" because it need not include nonclinical or clinical data to demonstrate safety and effectiveness and may instead rely on the FDA's previous finding that the brand drug, or reference drug, is safe and effective. In order to obtain approval of an ANDA, an applicant must, among other things, establish that its product is bioequivalent to an existing approved drug and that it has the same active ingredient(s), strength, dosage form, and the same route of administration. A generic drug is considered bioequivalent to its reference drug if testing demonstrates that the rate and extent of absorption of the generic drug is not significantly different from the rate and extent of absorption of the reference drug when administered under similar experimental conditions.

The Hatch-Waxman Act also provides incentives by awarding, in certain circumstances, certain legal protections from generic competition. This protection comes in the form of a non-patent exclusivity period, during which the FDA may not accept, or approve, an application for a generic drug, whether the application for such drug is submitted through an ANDA or a through another form of application, known as a 505(b)(2) application.

The Hatch-Waxman Act grants five years of exclusivity when a company develops and gains NDA approval of a new chemical entity that has not been previously approved by the FDA. This exclusivity provides that the FDA may not accept an ANDA or 505(b)(2) application for five years after the date of approval of previously approved drug, or four years in the case of an ANDA or 505(b)(2) application that challenges a patent claiming the reference drug (see discussion below regarding Paragraph IV Certifications). The Hatch-Waxman Act also provides three years of exclusivity for approved applications for drugs that are not new chemical entities, if the application contains the results of new clinical investigations (other than bioavailability studies) that were essential to approval of the application. Examples of such applications include applications for new indications, dosage forms (including new drug delivery systems), strengths, or conditions of use for an already approved product. This three-year exclusivity period only protects against FDA approval of ANDAs and 505(b)(2) applications for generic drugs that include the innovation that required new clinical investigations that were essential to approval; it does not prohibit the FDA from accepting or approving ANDAs or 505(b)(2) NDAs for generic drugs that do not include such an innovation.

Paragraph IV Certifications. Under the Hatch-Waxman Act, NDA applicants and NDA holders must provide information about certain patents claiming their drugs for listing in the FDA publication, "Approved Drug Products with Therapeutic Equivalence Evaluations," also known as the "Orange Book." When an ANDA or 505(b)(2) application is submitted, it must contain one of several possible certifications regarding each of the patents listed in the Orange Book for the reference drug. A certification that a listed patent is invalid or will not be infringed by the sale of the proposed product is called a "Paragraph IV" certification.

Within 20 days of the acceptance by the FDA of an ANDA or 505(b)(2) application containing a Paragraph IV certification, the applicant must notify the NDA holder and patent owner that the application has been submitted, and provide the factual and legal basis for the applicant's opinion that the patent is invalid or not infringed. The NDA holder or patent holder may then initiate a patent infringement suit in response to the Paragraph IV notice. If this is done within 45 days of receiving notice of the Paragraph IV certification, a 30-month stay of the FDA's ability to approve the ANDA or 505(b)(2) application is triggered. The FDA may approve the proposed product before the expiration of the 30-month stay only if a court finds the patent invalid or not infringed, or if the court shortens the period because the parties have failed to cooperate in expediting the litigation.

Patent Term Restoration. Under the Hatch-Waxman Act, a portion of the patent term lost during product development and FDA review of an NDA or 505(b)(2) application is restored if approval of the application is the first permitted commercial marketing of a drug containing the active ingredient. The patent term restoration period is generally one-half the time between the effective date of the IND

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and the date of submission of the NDA, plus the time between the date of submission of the NDA and the date of FDA approval of the product. The maximum period of patent term extension is five years, and the patent cannot be extended to more than 14 years from the date of FDA approval of the product. Only one patent claiming each approved product is eligible for restoration and the patent holder must apply for restoration within 60 days of approval. The U.S. Patent and Trademark Office, in consultation with the FDA, reviews and approves the application for patent term restoration.

Other Regulatory Requirements

After approval, drug products are subject to extensive continuing regulation by the FDA, which include company obligations to manufacture products in accordance with GMP, maintain and provide to the FDA updated safety and efficacy information, report adverse experiences with the product, keep certain records and submit periodic reports, obtain FDA approval of certain manufacturing or labeling changes, and comply with FDA promotion and advertising requirements and restrictions. Failure to meet these obligations can result in various adverse consequences, both voluntary and FDA-imposed, including product recalls, withdrawal of approval, restrictions on marketing, and the imposition of civil fines and criminal penalties against the NDA holder. In addition, later discovery of previously unknown safety or efficacy issues may result in restrictions on the product, manufacturer or NDA holder.

We and any manufacturers of our products are required to comply with applicable FDA manufacturing requirements contained in the FDA's GMP regulations. GMP regulations require, among other things, quality control and quality assurance as well as the corresponding maintenance of records and documentation. The manufacturing facilities for our products must meet GMP requirements to the satisfaction of the FDA pursuant to a pre-approval inspection before we can use them to manufacture our products. We and any third-party manufacturers are also subject to periodic inspections of facilities by the FDA and other authorities, including procedures and operations used in the testing and manufacture of our products to assess our compliance with applicable regulations.

With respect to post-market product advertising and promotion, the FDA imposes a number of complex regulations on entities that advertise and promote pharmaceuticals, which include, among others, standards for direct-to-consumer advertising, prohibitions on promoting drugs for uses or in patient populations that are not described in the drug's approved labeling (known as "off-label use"), and principles governing industry-sponsored scientific and educational activities. Failure to comply with FDA requirements can have negative consequences, including adverse publicity, enforcement letters from the FDA, mandated corrective advertising or communications with doctors or patients, and civil or criminal penalties. Although physicians may prescribe legally available drugs for off-label uses, manufacturers may not market or promote such off-label uses.

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 NDA or NDA supplement before the change can be implemented. An NDA supplement for a new indication typically requires clinical data similar in type and quality to the clinical data supporting the original application for the original indication, and the FDA uses similar procedures and actions in reviewing such NDA supplements as it does in reviewing NDAs.

Adverse event reporting and submission of periodic reports is required following FDA approval of an NDA. 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 to place conditions on an approval that restrict the distribution or use of the product.

Outside the U.S., our and our collaborators' abilities to market a product are contingent upon receiving marketing authorization from the appropriate regulatory authorities. The requirements governing marketing authorization, pricing and reimbursement vary widely from jurisdiction to jurisdiction. At present, foreign marketing authorizations are applied for at a national level, although

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within the E.U. registration procedures are available to companies wishing to market a product in more than one E.U. member state.

Employees

As of December 31, 2014, we had 464 employees. Approximately 43 were scientists engaged in discovery research, 120 were in our drug development organization, 203 were in our sales and commercial team, and 98 were in general and administrative functions. None of our employees are represented by a labor union, and we consider our employee relations to be good.

Executive Officers of the Registrant

The following table sets forth the name, age and position of each of our executive officers as of February 5, 2015:

Name	Age	Position
Peter M. Hecht, Ph.D.	51	Chief Executive Officer, Director
Tom Graney	50	Chief Financial Officer and Senior Vice President, Finance and Corporate Strategy
Mark G. Currie, Ph.D.	60	Senior Vice President, Chief Scientific Officer and President of R&D
Halley E. Gilbert	45	Senior Vice President, Chief Legal Officer, and Secretary
Thomas A. McCourt	57	Senior Vice President, Marketing and Sales and Chief Commercial Officer

Peter M. Hecht has served as our chief executive officer and a director since our founding in 1998. Under his leadership, Ironwood has grown from nine Ph.D. scientists to an integrated research, development and commercial organization. Prior to founding Ironwood, Dr. Hecht was a research fellow at Whitehead Institute for Biomedical Research. Dr. Hecht earned a B.S. in mathematics and an M.S. in biology from Stanford University, and holds a Ph.D. in molecular biology from the University of California at Berkeley.

Tom Graney has served as our chief financial officer and senior vice president of finance and corporate strategy since joining us in August 2014. Prior to joining our company, Mr. Graney held a number of positions in the areas of mergers and acquisitions, strategic marketing, finance and accounting at Johnson & Johnson, or J&J, and its affiliates since 1994. Most recently Mr. Graney served as worldwide vice president of finance and chief financial officer of Ethicon, a global leader in surgical medical devices, from January 2010 to August 2014. Prior to that, Mr. Graney was vice president of finance for J&J Global Supply Chain from August 2009 to January 2010, chief financial officer of J&J's Janssen Pharmaceuticals from February 2008 to August 2009, and chief financial officer for J&J Global Virology (including Tibotec Pharmaceuticals) from November 2005 to February 2008. A chartered financial analyst charterholder, Mr. Graney holds a Bachelor of Science degree in accounting from the University of Delaware and an M.B.A. in marketing, finance and international business from the Leonard N. Stern School of Business at New York University.

Mark G. Currie serves as our senior vice president, chief scientific officer and president of research and development, and has led our research and development efforts since joining us in 2002. Prior to joining Ironwood, Dr. Currie directed cardiovascular and central nervous system disease research as vice president of discovery research at Sepracor Inc. Previously, Dr. Currie initiated, built and led discovery pharmacology and also served as director of arthritis and inflammation at Monsanto Company. Dr. Currie earned a B.S. in biology from the University of South Alabama and holds a Ph.D. in cell biology from the Bowman-Gray School of Medicine of Wake Forest University.

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Halley E. Gilbert serves as our senior vice president, chief legal officer, and secretary and has led our legal function since joining us in 2008. Prior to joining us, Ms. Gilbert was vice president and deputy general counsel at Cubist Pharmaceuticals, Inc. and corporate counsel at Genzyme Corp., and prior to that, she was an associate specializing in mergers and acquisitions and securities law at Skadden, Arps, Slate, Meagher & Flom LLP. Ms. Gilbert received her J.D. from Northwestern University School of Law and a B.A. from Tufts University.

Thomas A. McCourt has served as our senior vice president of marketing and sales and chief commercial officer since joining Ironwood in 2009. Prior to joining Ironwood, Mr. McCourt led the U.S. brand team for denosumab at Amgen Inc. from April 2008 to August 2009. Prior to that, Mr. McCourt was with Novartis AG from 2001 to 2008, where he directed the launch and growth of Zelnorm for the treatment of patients with IBS-C and CIC and held a number of senior commercial roles, including vice president of strategic marketing and operations. Mr. McCourt was also part of the founding team at Astra Merck Inc., leading the development of the medical affairs and science liaison group and then serving as brand manager for Prilosec and NEXIUM®. Mr. McCourt has a degree in pharmacy from the University of Wisconsin.

Available Information

You may obtain free copies of our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, and amendments to those reports, as soon as reasonably practicable after they are electronically filed or furnished to the SEC, on the Investors section of our website at www.ironwoodpharma.com or by contacting our Investor Relations department at (617) 374-5082. The contents of our website are not incorporated by reference into this report and you should not consider information provided on our website to be part of this report.

Item 1A. *Risk Factors*

In addition to the other information in this Annual Report on Form 10-K, any of the factors described below could significantly and negatively affect our business, financial condition, results of operations or prospects. The trading price of our Class A common stock may decline due to these risks.

Risks Related to Our Business and Industry

We are highly dependent on the commercial success of LINZESS in the U.S. for the foreseeable future; we may be unable to attain profitability and positive cash flow from operations.

In August 2012, the FDA approved LINZESS as a once-daily treatment for adult men and women suffering from IBS-C or CIC. We and our partner, Actavis plc (following the completion of its acquisition of Forest Laboratories, Inc.), or Actavis, began selling LINZESS in the U.S. during December 2012. The commercial success of LINZESS depends on a number of factors, including:

- the effectiveness of LINZESS as a treatment for adult patients with IBS-C or CIC;
- the size of the treatable patient population;
- the effectiveness of the sales, managed markets and marketing efforts by us and Actavis;
- the adoption of LINZESS by physicians, which depends on whether physicians view it as a safe and effective treatment for adult patients with IBS-C and CIC;
- our success in educating and activating adult IBS-C and CIC patients, including through direct-to-consumer education, to enable them to more effectively communicate their symptoms and treatment history to their physicians;

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- our ability to both secure and maintain adequate reimbursement for, and optimize patient access to, LINZESS by providing third party payers with a strong value proposition based on the existing burden of illness associated with IBS-C and CIC and the benefits of LINZESS;

- the effectiveness of our partners' distribution networks;

- the occurrence of any side effects, adverse reactions or misuse, or any unfavorable publicity in these areas, associated with LINZESS; and

- the development or commercialization of competing products or therapies for the treatment of IBS-C or CIC, or their associated symptoms.

Our revenues from the commercialization of LINZESS are subject to these factors, and therefore may be unpredictable from quarter-to-quarter. Ultimately, we may never generate sufficient revenues from LINZESS to reach or maintain profitability for our company or to sustain our anticipated levels of operations.

Linaclotide may cause undesirable side effects or have other properties that could limit its commercial potential.

The most commonly reported adverse reactions in the placebo-controlled trials that supported the approval of linaclotide in the U.S. and Europe were diarrhea, abdominal pain, flatulence and abdominal distension, with diarrhea being the most common. Severe diarrhea was reported in 2% of the linaclotide-treated patients, and its incidence was similar between the IBS-C and CIC populations in these trials. If we or others identify previously unknown side effects, if known side effects are more frequent or severe than in the past, if we or others detect unexpected safety signals for linaclotide or any products perceived to be similar to linaclotide, or if any of the foregoing are perceived to have occurred, then in any of these circumstances:

- sales of linaclotide may be impaired;

- regulatory approvals for linaclotide may be restricted or withdrawn;

- we may decide to, or be required to, send product warning letters or field alerts to physicians, pharmacists and hospitals;

- reformulation of the product, additional nonclinical or clinical studies, changes in labeling or changes to or reapprovals of manufacturing facilities may be required;

- we may be precluded from pursuing additional development opportunities to enhance the clinical profile of LINZESS within its indicated populations, as well as be precluded from studying linaclotide in additional indications and populations and in new formulations;

- our reputation in the marketplace may suffer; and

- government investigations or lawsuits, including class action suits, may be brought against us.

Any of the above occurrences would harm or prevent sales of linaclotide, increase our expenses and impair our ability to successfully commercialize linaclotide.

Furthermore, with LINZESS and CONSTELLA commercially available in certain countries and used in wider populations and in less rigorously controlled environments than in clinical studies, and as we and Actavis explore development opportunities to enhance the clinical profile of LINZESS through additional clinical trials, the number of patients treated with linaclotide within and outside of its current indications or patient populations may expand, which could result in the identification of previously unknown side effects, increased frequency or severity of known side effects, or detection of unexpected safety signals. As a result, regulatory authorities, healthcare practitioners, third party payers

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or patients may perceive or conclude that the use of linaclotide is associated with serious adverse effects, undermining our commercialization efforts.

In addition, the FDA-approved label for LINZESS contains a boxed warning about its use in pediatric patients. LINZESS is contraindicated in pediatric patients up to 6 years of age based on nonclinical data from studies in neonatal mice approximately equivalent to human pediatric patients less than 2 years of age. There is also a warning advising physicians to avoid the use of LINZESS in pediatric patients 6 through 17 years of age. This warning is based on data in young juvenile mice and the lack of clinical safety and efficacy data in pediatric patients of any age group. We and Actavis have established a nonclinical and clinical post-marketing plan with the FDA to understand the safety and efficacy of LINZESS in pediatric patients, which is discussed below.

We rely entirely on contract manufacturers and our collaboration partners to manufacture and distribute linaclotide. If they are unable to comply with applicable regulatory requirements, unable to source sufficient raw materials, experience manufacturing or distribution difficulties, or are otherwise unable to manufacture and distribute sufficient quantities to meet demand, our commercialization efforts may be materially harmed.

We have no internal manufacturing or distribution capabilities. Instead, we rely on a combination of contract manufacturers and our partners to manufacture linaclotide API and final linaclotide drug product, and to distribute that drug product to third party purchasers. We have commercial supply agreements with independent third parties to manufacture the linaclotide API used to support all of our partnered and unpartnered territories. Each of Actavis, Almirall and Astellas is responsible for drug product and finished goods manufacturing (including bottling and packaging) for its respective territory, and distributing the finished goods to wholesalers. Among our drug product manufacturers, only Actavis and Almirall have manufactured linaclotide on a commercial scale. We have an agreement with an independent third party to serve as an additional source of drug product manufacturing of linaclotide for our partnered territories and we have worked with our partners to achieve sufficient redundancy in this component of the linaclotide supply chain. Under our collaboration with AstraZeneca, we are accountable for drug product and finished goods manufacturing for China, Hong Kong and Macau.

Each of our linaclotide API and drug product manufacturers must comply with current good manufacturing practices, or GMP, and other stringent regulatory requirements enforced by the FDA and foreign regulatory authorities in other jurisdictions. These requirements include, among other things, quality control, quality assurance and the maintenance of records and documentation, which occur in addition to our quality assurance release of linaclotide API. Manufacturers of linaclotide may be unable to comply with these GMP requirements and with other regulatory requirements. We have little control over our manufacturers' or collaboration partners' compliance with these regulations and standards.

Our manufacturers may experience problems with their respective manufacturing and distribution operations and processes, including for example, quality issues, including product specification and stability failures, procedural deviations, improper equipment installation or operation, utility failures, contamination and natural disasters. In addition, our API manufacturers acquire the raw materials necessary to make linaclotide API from a limited number of sources. Any delay or disruption in the availability of these raw materials or a change in raw material suppliers could result in production disruptions, delays or higher costs with consequent adverse effects on us.

The manufacture of pharmaceutical products requires significant expertise and capital investment, including the development of advanced manufacturing techniques and process controls. Manufacturers of pharmaceutical products often encounter difficulties in commercial production. These problems include difficulties with production costs and yields, quality control, including stability of the product and quality assurance testing, and shortages of qualified personnel, as well as compliance with federal,

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state and foreign regulations and the challenges associated with complex supply chain management. Even if our manufacturers do not experience problems and commercial manufacturing is achieved, their maximum manufacturing capacities may be insufficient to meet commercial demand. Finding alternative manufacturers or adding additional manufacturers could take a significant amount of time and involve significant expense. New manufacturers would need to develop and implement the necessary production techniques and processes, which along with their facilities, would need to be inspected and approved by the regulatory authorities in each applicable territory.

If our API or drug product manufacturers fail to adhere to applicable GMP or other regulatory requirements, experience delays or disruptions in the availability of raw materials or experience manufacturing or distribution problems, we will suffer significant consequences, including product seizures or recalls, loss of product approval, fines and sanctions, reputational damage, shipment delays, inventory shortages, inventory write-offs and other product-related charges and increased manufacturing costs. If we experience any of these results, or if our manufacturers' maximum capacities are insufficient to meet demand, we may not be able to successfully commercialize linaclotide.

If any of our partners undergoes a change in control or in management, this may adversely affect our collaborative relationship or the success of the commercialization of LINZESS in the U.S. or the continued launches and commercialization of CONSTELLA in the E.U., or the ability to achieve regulatory approval, launch and commercialize linaclotide in our other partnered territories.

We work jointly and collaboratively with each of our partners on many aspects of the development, manufacturing and commercialization of linaclotide. In doing so, we have established relationships with several key members of the management teams of our linaclotide partners in functional areas such as development, quality, regulatory, drug safety and pharmacovigilance, operations, marketing, sales, field operations and medical science. Further, the success of our collaborations is highly dependent on the resources, efforts and skills of our partners and their key employees. As we and our partners commercialize LINZESS in the U.S., continue to launch and commercialize CONSTELLA in the E.U. and develop, launch and commercialize linaclotide in other parts of the world, the drug's success becomes more dependent on us maintaining highly collaborative and well aligned partnerships. In July 2014, Actavis completed its acquisition of Forest Laboratories, Inc. Our collaboration for the development and commercialization of linaclotide in North America remains in effect. In connection with this transaction, we are reestablishing many relationships and confirming alignment on our development and commercialization strategy for linaclotide. If any of our linaclotide partners undergo a change of control or in management in the future, we would likewise need to reestablish such relationships and confirm continued alignment on our development and commercialization strategy. Further, in connection with any change of control or in management, there is inherent uncertainty and disruption in operations, which could result in distraction, inefficiencies, and misalignment of priorities. As a result, in the event of a change of control or in management at one of our partners, we cannot be sure that we will be able to successfully execute on our development and commercialization strategy for linaclotide in an effective and efficient manner and without disruption or reduced performance. Finally, any change of control or in management may result in a reprioritization of linaclotide within a partner's portfolio, or such partner may fail to maintain the financial or other resources necessary to continue supporting its portion of the development, manufacturing or commercialization of linaclotide.

If any of our partners undergoes a change of control and the acquirer either is unable to perform such partner's obligations under its collaboration or license agreement with us or has a product that competes with linaclotide that such acquirer does not divest, we have the right to terminate the collaboration or license agreement and reacquire that partner's rights with respect to linaclotide. If we elect to exercise these rights in such circumstances, we will need to either establish the capability to develop, manufacture and commercialize linaclotide in that partnered territory on our own or we will need to establish a relationship with a new partner. We have assembled a team of specialists in

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manufacturing, quality, sales, marketing, payer, pricing and field operations, and specialized medical scientists, who represent the functional areas necessary for a successful commercial launch of a high potential, GI therapy and who support the commercialization of LINZESS in the U.S. If Actavis was subject to a change of control that allowed us to further commercialize LINZESS in the U.S. on our own, and we chose to do so, we would need to enhance each of these functional aspects to replace the capabilities that Actavis was previously providing to the collaboration. Any such transition might result in a period of reduced efficiency or performance by our operations and commercialization teams, which could adversely affect our ability to commercialize LINZESS.

Although many members of our global operations, commercial and medical affairs teams have strategic oversight of, and a certain level of involvement in, their functional areas globally, we do not have corresponding operational capabilities in these areas outside of the U.S. If Actavis, Almirall, Astellas or AstraZeneca was subject to a change of control that allowed us to continue linaclotide's development or commercialization anywhere outside of the U.S. on our own, and we chose to do so rather than establishing a relationship with a new partner, we would need to build operational capabilities in the relevant territory. In any of these situations, the timeline and likelihood of achieving regulatory approval and, ultimately, the commercialization of linaclotide could be negatively impacted.

We must work effectively and collaboratively with Actavis to market and sell LINZESS in the U.S. in order for it to achieve its maximum commercial potential.

We are working closely with Actavis to implement our joint commercialization plan for LINZESS. The commercialization plan includes an agreed upon marketing campaign that targets the physicians who see patients who could benefit from LINZESS treatment. Our marketing campaign also targets the adult men and women who suffer from IBS-C or CIC, including through our direct-to-consumer education program. Our commercialization plan also includes an integrated call plan for our sales forces to optimize the education of specific gastroenterologists and primary care physicians on whom our and Actavis' sales representatives call, and the frequency with which the representatives meet with them.

In order to optimize the commercial potential of LINZESS, we and Actavis must execute upon this commercialization plan effectively and efficiently. In addition, we and Actavis must continually assess and modify our commercialization plan in a coordinated and integrated fashion in order to adapt to the promotional response. Further, we and Actavis must continue to focus and refine our marketing campaign to ensure a clear and understandable physician-patient dialogue around IBS-C, CIC and the potential for LINZESS as an appropriate therapy. In addition, we and Actavis must provide our sales forces with the highest quality support, guidance and oversight in order for them to continue to effectively promote LINZESS to gastroenterologists and primary care physicians. If we and Actavis fail to perform these commercial functions in the highest quality manner and in accordance with our joint commercialization plan and related agreements, LINZESS will not achieve its maximum commercial potential and we may suffer financial harm. Our efforts to further target and engage adult patients with IBS-C or CIC through direct-to-consumer education may not effectively increase appropriate patient awareness or patient/physician dialogue, and may not increase the revenues that we generate from LINZESS.

We are subject to uncertainty relating to pricing and reimbursement policies which, if not favorable for linaclotide, could hinder or prevent linaclotide's commercial success.

Our and Actavis' ability to commercialize LINZESS in the U.S. successfully depends in part on the coverage and reimbursement levels set by governmental authorities, private health insurers and other third-party payers. In determining whether to approve reimbursement for LINZESS and at what level, we expect that third-party payers will consider factors that include the efficacy, cost effectiveness and safety of LINZESS, as well as the availability of other treatments including generic prescription drugs

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and over-the-counter alternatives. Further, in order to maintain acceptable reimbursement levels and access for patients at copay levels that are reasonable and customary, we may face increasing pressure to offer discounts or rebates from list prices or discounts to a greater number of third-party payers or other unfavorable pricing modifications. Obtaining and maintaining favorable reimbursement can be a time consuming and expensive process, and there is no guarantee that we or Actavis will be able to negotiate pricing terms with all third-party payers at levels that are profitable to us, or at all. Certain third-party payers also require prior authorization for, or even refuse to provide, reimbursement for LINZESS, and others may do so in the future. Our business would be materially adversely affected if we and Actavis are not able to receive approval for reimbursement of LINZESS from third-party payers on a broad, timely or satisfactory basis; if reimbursement is subject to overly restrictive prior authorization requirements; or if reimbursement is not maintained at a satisfactory level or becomes subject to prior authorization. In addition, our business could be adversely affected if private insurers, including managed care organizations, the Medicare or Medicaid programs or other reimbursing bodies or payers limit or reduce the indications for or conditions under which LINZESS may be reimbursed.

We expect to experience pricing pressures in connection with the sale of linaclotide and our future products due to the healthcare reforms discussed below, as well as the trend toward programs aimed at reducing healthcare costs, the increasing influence of health maintenance organizations, the ongoing debates on reducing government spending and additional legislative proposals. These healthcare reform efforts or any future legislation or regulatory actions aimed at controlling and reducing healthcare costs, including through measures designed to limit reimbursement, restrict access or impose unfavorable pricing modifications on pharmaceutical products, could impact our and our partners' ability to obtain or maintain reimbursement for linaclotide at a satisfactory level, or at all, which could materially harm our business and financial results.

In some foreign countries, particularly Canada and the countries of Europe, the pricing and payment of prescription pharmaceuticals is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take six to 12 months or longer after the receipt of regulatory approval and product launch. To obtain favorable reimbursement for the indications sought or pricing approval in some countries, we and our partners may be required to conduct a clinical trial that compares the cost-effectiveness of our products, including linaclotide, to other available therapies. In addition, in countries in which linaclotide is the only approved therapy for a particular indication, such as CONSTELLA as the only product approved for the symptomatic treatment of moderate to severe IBS-C in adults in Europe, there may be disagreement as to what the most comparable product is, or if there even is one. Further, several European countries have implemented government measures to either freeze or reduce pricing of pharmaceutical products. Many third-party payers and governmental authorities also consider the price for which the same product is being sold in other countries to determine their own pricing and reimbursement strategy, so if linaclotide is priced low or gets limited reimbursement in a particular country, this could result in similarly low pricing and reimbursement in other countries. If reimbursement for our products is unavailable in any country in which reimbursement is sought, limited in scope or amount, or if pricing is set at or reduced to unsatisfactory levels, our ability to successfully commercialize linaclotide in such country would be impacted negatively. Furthermore, if these measures prevent us or any of our partners from selling linaclotide on a profitable basis in a particular country, they could prevent the commercial launch or continued sale of linaclotide in that country.

If the pricing and reimbursement of CONSTELLA in the E.U. is low, our royalty revenues based on sales of linaclotide will be adversely affected.

In November 2012, the European Commission granted marketing authorization to CONSTELLA for the symptomatic treatment of moderate to severe IBS-C in adults. This approval followed the positive recommendation received from the European Committee for Medicinal Products for Human

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Use in September 2012. Currently, CONSTELLA is commercially available in certain European countries, including the United Kingdom, Italy and Spain. In May 2014, Almirall suspended commercialization of CONSTELLA in Germany following an inability to reach agreement with the German National Association of Statutory Health Insurance Funds on a reimbursement price that reflects the innovation and value of CONSTELLA. Almirall is assessing all possibilities to facilitate continued access to CONSTELLA for appropriate patients in Germany.

The pricing and reimbursement strategy is a key component of Almirall's commercialization plan for CONSTELLA in Europe. Reimbursement sources are different in each country, and each country may include a combination of distinct potential payers, including private insurance and governmental payers. Countries in Europe may restrict the range of medicinal products for which their national health insurance systems provide reimbursement and control the prices of medicinal products for human use. Our revenues may suffer if Almirall is unable to successfully and timely conclude reimbursement, price approval or funding processes and market CONSTELLA in key member states of the E.U., or if coverage and reimbursement for CONSTELLA is limited or reduced. If Almirall is not able to obtain coverage, pricing or reimbursement on acceptable terms or at all, or if such terms change in any countries in its territory, Almirall may not be able to, or may decide not to, sell CONSTELLA in such countries. Further, Almirall could sell CONSTELLA at a low price. Since we receive royalties on net sales of CONSTELLA in the E.U., which is correlated directly to the price at which Almirall sells CONSTELLA in the E.U., our royalty revenues globally could be limited should Almirall sell CONSTELLA at a low price or elect not to launch in a certain country within the E.U.

Because we work with partners to develop, manufacture and commercialize linaclotide, we are dependent upon third parties, and our relationships with those third parties, in our efforts to commercialize LINZESS and to obtain regulatory approval for, and to commercialize, linaclotide in our other partnered territories.

Actavis played a significant role in the conduct of the clinical trials for linaclotide and in the subsequent collection and analysis of data, and Actavis holds the NDA for LINZESS. In addition, we are commercializing LINZESS in the U.S. with Actavis. Actavis is also responsible for the development, regulatory approval and commercialization of linaclotide in Canada and Mexico, which, for Mexico, it has sublicensed its commercialization rights to Almirall. Actavis is commercializing CONSTELLA in Canada and Almirall is commercializing LINZESS in Mexico. Almirall also holds the marketing authorization for CONSTELLA in the E.U. and is responsible for obtaining regulatory approval of linaclotide in the countries in its territory. Astellas, our partner in Japan, is responsible for completing the clinical programs and obtaining regulatory approval of linaclotide in its territory. Further, we are jointly overseeing the development, and will jointly oversee the commercialization, of linaclotide in China, Hong Kong and Macau through our collaboration with AstraZeneca, with AstraZeneca having primary responsibility for the local operational execution. Upon any approval, each of Almirall, Astellas and AstraZeneca is responsible for commercializing linaclotide in its respective territory, and each has agreed to use commercially reasonable efforts to do so. Each of our partners is responsible for reporting adverse event information from its territory to us. Finally, each of our partners, other than AstraZeneca, is responsible for drug product manufacturing of linaclotide and making it into finished goods (including bottling and packaging) for its respective territory. The integration of our efforts with our partners' efforts is subject to the uncertainty of the markets for pharmaceutical products in each partner's respective territories, and accordingly, these relationships must evolve to meet any new challenges that arise in those regions.

These integrated functions may not be carried out effectively and efficiently if we fail to communicate and coordinate with our partners, and vice versa. Our partnering strategy imposes obligations, risks and operational requirements on us as the central node in our global network of partners. If we do not effectively communicate with each partner and ensure that the entire network is making integrated and cohesive decisions focused on the global brand for linaclotide, linaclotide will

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not achieve its maximum commercial potential. As the holder of the global safety database for linaclotide, we are responsible for coordinating the safety surveillance and adverse event reporting efforts worldwide. If we are unsuccessful in doing so due to poor process, execution, oversight, communication, adjudication or otherwise, then our and our partner's ability to obtain and maintain regulatory approval of linaclotide will be at risk.

We have limited ability to control the amount or timing of resources that our partners devote to linaclotide. If any of our partners fails to devote sufficient time and resources to linaclotide, or if its performance is substandard, it will delay the potential submission or approval of regulatory applications for linaclotide, as well as the manufacturing and commercialization of linaclotide in the particular territory. A material breach by any of our partners of our collaboration or license agreement with such partner, or a significant disagreement between us and a partner, could also delay the regulatory approval and commercialization of linaclotide, potentially lead to costly litigation, and could have a material adverse impact on our financial condition. Moreover, although we have non-compete restrictions in place with each of our partners, they may have relationships with other commercial entities, some of which may compete with us. If any of our partners assists our competitors, it could harm our competitive position.

Even though LINZESS is approved by the FDA for the treatment of adults with IBS-C or CIC, it faces future post-approval development and regulatory requirements, which will present additional challenges.

In August 2012, the FDA approved LINZESS as a once-daily treatment for adult men and women suffering from IBS-C or CIC. LINZESS is subject to ongoing FDA requirements governing the labeling, packaging, storage, advertising, promotion, recordkeeping and submission of safety and other post-market information.

LINZESS is contraindicated in pediatric patients up to 6 years of age based on nonclinical data from studies in neonatal mice approximately equivalent to human pediatric patients less than 2 years of age. There is also a warning advising physicians to avoid the use of LINZESS in pediatric patients 6 through 17 years of age. This warning is based on data in young juvenile mice and the lack of clinical safety and efficacy data in pediatric patients of any age group. We and Actavis have established a nonclinical and clinical post-marketing plan with the FDA to understand the safety and efficacy of LINZESS in pediatric patients. The first step in this plan was to undertake additional nonclinical studies to further understand the results of the earlier neonatal mouse study and to understand the tolerability of LINZESS in older juvenile mice. We have completed these nonclinical studies and the FDA has concluded that the nonclinical data do not present a reason not to proceed with clinical studies in older pediatric patients (age 12 and above). We and Actavis are working with the FDA on a plan for clinical pediatric studies. Our ability to conduct clinical studies in younger pediatric patients will depend, in part, on the safety and efficacy data from our clinical studies in older pediatric patients. Our ability to ever expand the indication for LINZESS to pediatrics will depend on, among other things, our successful completion of pediatric clinical studies.

We and Actavis have also committed to certain nonclinical and clinical studies aimed at understanding: (a) whether orally administered linaclotide can be detected in breast milk, (b) the potential for antibodies to be developed to linaclotide, and if so, (c) whether antibodies specific for linaclotide could have any therapeutic or safety implications. We expect to complete these studies over the next three to five years.

These post-approval requirements impose burdens and costs on us. Failure to complete the required studies and meet our other post-approval commitments would lead to negative regulatory action at the FDA, which could include withdrawal of regulatory approval of LINZESS for the treatment of adults with IBS-C or CIC.

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Manufacturers of drug products and their facilities are subject to continual review and periodic inspections by the FDA and other regulatory authorities for compliance with GMP regulations. If we or a regulatory agency discovers previously unknown problems with a product, such as adverse events of unanticipated severity or frequency, or problems with a facility where the product is manufactured, a regulatory agency may impose restrictions on that product or the manufacturer, including requiring implementation of a risk evaluation and mitigation strategy program, withdrawal of the product from the market or suspension of manufacturing. If we, our partners or the manufacturing facilities for linaclotide fail to comply with applicable regulatory requirements, a regulatory agency may:

issue warning letters or untitled letters;

impose civil or criminal penalties;

suspend or withdraw regulatory approval;

suspend any ongoing clinical trials;

refuse to approve pending applications or supplements to applications submitted by us;

impose restrictions on operations, including costly new manufacturing requirements; or

seize or detain products or require us to initiate a product recall.

Even though linaclotide is approved for marketing in the U.S. as LINZESS and in the E.U. as CONSTELLA, and is approved for marketing in a number of other countries, we or our collaborators may never receive approval to commercialize linaclotide in additional parts of the world.

In order to market any products outside of the U.S., we or our partners must comply with numerous and varying regulatory requirements of other jurisdictions regarding safety and efficacy. Approval procedures vary among jurisdictions and can involve product testing and administrative review periods different from, and greater than, those in the U.S., the E.U. and the other countries where linaclotide is approved. Potential risks include that the regulatory authorities:

may not deem linaclotide safe and effective;

may not find the data from nonclinical studies and clinical trials sufficient to support approval;

may not approve of manufacturing processes and facilities;

may not approve linaclotide for any or all indications or patient populations for which approval is sought;

may require significant warnings or restrictions on use to the product label for linaclotide; or

may change their approval policies or adopt new regulations.

Regulatory approval in one jurisdiction does not ensure regulatory approval in another, but a failure or delay in obtaining regulatory approval in one jurisdiction may have a negative effect on the regulatory processes in others. If linaclotide is not approved for all indications or patient populations or with the label requested, this would limit the uses of linaclotide and have an adverse effect on its commercial potential or require costly post-marketing studies.

We face potential product liability exposure, and, if claims brought against us are successful, we could incur substantial liabilities.

The use of our product candidates in clinical trials and the sale of marketed products expose us to product liability claims. If we do not successfully defend ourselves against product liability claims, we

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could incur substantial liabilities. In addition, regardless of merit or eventual outcome, product liability claims may result in:

- decreased demand for approved products;
- impairment of our business reputation;
- withdrawal of clinical trial participants;
- initiation of investigations by regulators;
- litigation costs;
- distraction of management's attention from our primary business;
- substantial monetary awards to patients or other claimants;
- loss of revenues; and
- the inability to commercialize our product candidates.

We currently have product liability insurance coverage for the commercial sale of linaclotide and for the clinical trials of our product candidates which is subject to industry-standard terms, conditions and exclusions. Our insurance coverage may not be sufficient to reimburse us for expenses or losses associated with claims. Moreover, insurance coverage is becoming increasingly expensive, and, in the future, we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses. On occasion, large judgments have been awarded in lawsuits based on drugs that had unanticipated side effects. A successful product liability claim or series of claims could cause our stock price to decline and, if judgments exceed our insurance coverage, could decrease our cash and adversely affect our business.

We may face competition in the IBS-C and CIC marketplace, and new products may emerge that provide different or better alternatives for treatment of GI conditions.

Linaclotide competes globally with certain prescription therapies and over the counter products for the treatment of IBS-C and CIC, or their associated symptoms. The availability of prescription competitors and over the counter products for GI conditions could limit the demand, and the price we are able to charge, for linaclotide unless we are able to differentiate linaclotide on the basis of its actual or perceived benefits. New developments, including the development of other drug technologies and methods of preventing the incidence of disease, occur in the pharmaceutical and medical technology industries at a rapid pace. These developments may render linaclotide obsolete or noncompetitive.

We believe other companies are developing products which could compete with linaclotide, should they be approved by the FDA or foreign regulatory authorities. Currently, there are compounds in late stage development and other potential competitors are in earlier stages of development for the treatment of patients with either IBS-C or CIC. If our potential competitors are successful in completing drug development for their drug candidates and obtain approval from the FDA or foreign regulatory authorities, they could limit the demand for linaclotide.

In addition, certain of our competitors have substantially greater financial, technical and human resources than us. Mergers and acquisitions in the pharmaceutical industry may result in even more resources being concentrated in our competitors. Competition may increase further as a result of advances made in the commercial applicability of technologies and greater availability of capital for investment in these fields.

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We will incur significant liability if it is determined that we are promoting any "off-label" use of LINZESS.

Physicians are permitted to prescribe drug products for uses that are not described in the product's labeling and that differ from those approved by the FDA or other applicable regulatory agencies. Such "off-label" uses are common across medical specialties. Although the FDA and other regulatory agencies do not regulate a physician's choice of treatments, the FDA and other regulatory agencies do restrict communications on the subject of off-label use. Companies are not permitted to promote drugs for off-label uses. Accordingly, we may not promote LINZESS in the U.S. for use in any indications other than IBS-C or CIC or in any patient populations other than adult men and women. The FDA and other regulatory and enforcement authorities actively enforce laws and regulations prohibiting promotion of off-label uses and the promotion of products for which marketing approval has not been obtained. A company that is found to have improperly promoted off-label uses will be subject to significant liability, including civil and administrative remedies as well as criminal sanctions.

Notwithstanding the regulatory restrictions on off-label promotion, the FDA and other regulatory authorities allow companies to engage in truthful, non-misleading, and non-promotional scientific exchange concerning their products. We intend to engage in medical education activities and communicate with healthcare providers in compliance with all applicable laws, regulatory guidance and industry best practices. Although we believe we have put in place a robust compliance program, which is designed to ensure that all such activities are performed in a legal and compliant manner, we cannot be certain that our program will address all areas of potential exposure and the risks in this area cannot be entirely eliminated.

If we fail to comply with healthcare regulations, we could face substantial penalties and our business, operations and financial condition could be adversely affected.

As a manufacturer of pharmaceuticals, even though we do not (and do not expect in the future to) control referrals of healthcare services or bill directly to Medicare, Medicaid or other third-party payers, certain federal and state healthcare laws and regulations pertaining to fraud and abuse and patients' rights are and will be applicable to our business. We are subject to healthcare fraud and abuse and patient privacy regulation by both the federal government and the states in which we conduct our business. The regulations include:

- federal healthcare program anti-kickback laws, which prohibit, among other things, persons from soliciting, receiving or providing remuneration, directly or indirectly, to induce either the referral of an individual, for an item or service or the purchasing or ordering of a good or service, for which payment may be made under federal healthcare programs such as Medicare and Medicaid;

- federal false claims laws which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other third-party payers that are false or fraudulent, and which may apply to entities like us which provide coding and billing advice to customers;

- the federal Health Insurance Portability and Accountability Act of 1996, which prohibits executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters and which also imposes certain requirements relating to the privacy, security and transmission of individually identifiable health information;

- the Federal Food, Drug, and Cosmetic Act, which among other things, strictly regulates drug product marketing, prohibits manufacturers from marketing drug products for off-label use and regulates the distribution of drug samples;

- state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payer, including

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commercial insurers, and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by federal laws, thus complicating compliance efforts;

the federal Foreign Corrupt Practices Act which prohibits corporations and individuals from paying, offering to pay, or authorizing the payment of anything of value to any foreign government official, government staff member, political party, or political candidate in an attempt to obtain or retain business or to otherwise influence a person working in an official capacity; and

the federal Physician Payments Sunshine Act, which was passed as part of the Patient Protection and Affordable Care Act of 2010, and similar state laws in certain states, that require pharmaceutical and medical device companies to monitor and report payments, gifts, the provision of samples and other remuneration made to physicians and other healthcare professional and healthcare organizations.

If our operations are found to be in violation of any of the laws described above or any other laws, rules or regulations that apply to us, we will be subject to penalties, including civil and criminal penalties, damages, fines and the curtailment or restructuring of our operations. Any penalties, damages, fines, curtailment or restructuring of our operations could adversely affect our ability to operate our business and our financial results. Although compliance programs can mitigate the risk of investigation and prosecution for violations of these laws, rules or regulations, we cannot be certain that our program will address all areas of potential exposure and the risks in this area cannot be entirely eliminated, particularly because the requirements in this space are constantly evolving. Any action against us for violation of these laws, rules or regulations, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business, as well as damage our business or reputation. Moreover, achieving and sustaining compliance with applicable federal and state privacy, security, fraud and reporting laws may prove costly.

Healthcare reform and other governmental and private payer initiatives may have an adverse effect upon, and could prevent, our product's or product candidates' commercial success.

The U.S. government and individual states are aggressively pursuing healthcare reform, as evidenced by the passing of the Patient Protection and Affordable Care Act, as modified by the Health Care and Education Reconciliation Act of 2010. These healthcare reform laws contain several cost containment measures that could adversely affect our future revenue, including, for example, increased drug rebates under Medicaid for brand name prescription drugs, extension of Medicaid rebates to Medicaid managed care plans, and extension of so-called 340B discounted pricing on pharmaceuticals sold to certain healthcare providers. Additional provisions of the healthcare reform laws that may negatively affect our future revenue and prospects for profitability include the assessment of an annual fee based on our proportionate share of sales of brand name prescription drugs to certain government programs, including Medicare and Medicaid, as well as mandatory discounts on pharmaceuticals sold to certain Medicare Part D beneficiaries. Other aspects of healthcare reform, such as expanded government enforcement authority and heightened standards that could increase compliance-related costs, could also affect our business.

In addition to governmental efforts in the U.S., foreign jurisdictions as well as private health insurers and managed care plans are likely to continue challenging manufacturers' ability to obtain reimbursement, as well as the level of reimbursement, for pharmaceuticals and other healthcare related products and services. These cost-control initiatives could significantly decrease the available coverage and the price we might establish for linaclotide and our other potential products, which would have an adverse effect on our financial results.

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The Food and Drug Administration Amendments Act of 2007 also provides the FDA enhanced post-marketing authority, including the authority to require post-marketing studies and clinical trials, labeling changes based on new safety information, and compliance with risk evaluations and mitigation strategies approved by the FDA. We and Actavis have established a nonclinical and clinical post-marketing plan with the FDA to understand the safety and efficacy of LINZESS in pediatrics, which is discussed above. The FDA's exercise of this authority has resulted (and is expected to continue to result) in increased development-related costs following the commercial launch of LINZESS for the treatment of adult men and women suffering from IBS-C or CIC, and could result in potential restrictions on the sale and/or distribution of LINZESS, even in its approved indications and patient populations.

In pursuing our growth strategy, we will incur a variety of costs and may devote resources to potential opportunities that are never completed or for which we never receive the benefit. Our failure to successfully discover, acquire, develop and market additional product candidates or approved products would impair our ability to grow and adversely affect our business.

As part of our growth strategy, we intend to explore further linaclotide development opportunities. We and Actavis are exploring development opportunities to enhance the clinical profile of LINZESS by seeking to expand its utility in its indicated populations, as well as studying linaclotide in additional indications and populations and in new formulations to assess its potential to treat various GI conditions. These development efforts may fail or may not increase the revenues that we generate from LINZESS. Furthermore, they may result in adverse events, or perceived adverse events, in certain patient populations that are then attributed to the currently approved patient population, which may result in adverse regulatory action at the FDA or in other countries or harm linaclotide's reputation in the marketplace, each of which could materially harm our revenues from linaclotide.

We are also pursuing various other programs in our pipeline. We may spend several years and make significant investments in developing any current or future internal product candidate, and failure may occur at any point. Our product candidates are in various stages of development and must satisfy rigorous standards of safety and efficacy before they can be approved for sale by the FDA. To satisfy these standards, we must allocate resources among our various development programs and we must engage in costly and lengthy discovery and development efforts, which are subject to unanticipated delays and other significant uncertainties. Despite our efforts, our product candidates may not offer therapeutic or other improvement over existing competitive drugs, be proven safe and effective in clinical trials, or meet applicable regulatory standards. It is possible that none of the product candidates we are developing will be approved for commercial sale, which would impair our ability to grow.

We have ongoing or planned nonclinical and clinical trials for linaclotide and a number of our internal product candidates, and the strength of our company's pipeline will depend in large part on the outcomes of these studies. Many companies in the pharmaceutical industry have suffered significant setbacks in clinical trials even after achieving promising results in earlier nonclinical or clinical trials. The findings from our completed nonclinical studies may not be replicated in later clinical trials, and our clinical trials may not be predictive of the results we may obtain in later-stage clinical trials or of the likelihood of regulatory approval. Results from our clinical trials and findings from our nonclinical studies could lead to abrupt changes in our development activities, including the possible limitation or cessation of development activities associated with a particular product candidate or program. Furthermore, our analysis of data obtained from nonclinical and clinical activities is subject to confirmation and interpretation by the FDA and other applicable regulatory authorities, which could delay, limit or prevent regulatory approval. Satisfaction of FDA or other applicable regulatory requirements is costly, time-consuming, uncertain and subject to unanticipated delays.

In addition, because our internal research capabilities are limited, we may be dependent upon pharmaceutical and biotechnology companies, academic scientists and other researchers to sell or

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license products or technology to us. The success of this strategy depends partly upon our ability to identify, select, discover and acquire promising pharmaceutical product candidates and products. The process of proposing, negotiating and implementing a license or acquisition of a product candidate or approved product is lengthy and complex. Other companies, including some with substantially greater financial, marketing and sales resources, may compete with us for the license or acquisition of product candidates and approved products. We have limited resources to identify and execute the acquisition or in-licensing of third-party products, businesses and technologies and integrate them into our current infrastructure. Moreover, we may devote resources to potential acquisitions or in-licensing opportunities that are never completed, or we may fail to realize the anticipated benefits of such efforts. We may not be able to acquire the rights to additional products or product candidates on terms that we find acceptable, or at all.

In addition, future acquisitions may entail numerous operational and financial risks, including:

- exposure to unknown liabilities;
- disruption of our business and diversion of our management's time and attention to develop acquired products, product candidates or technologies;
- incurrence of substantial debt, dilutive issuances of securities or depletion of cash to pay for acquisitions;
- higher than expected acquisition and integration costs;
- difficulty in combining the operations and personnel of any acquired businesses with our operations and personnel;
- increased amortization expenses;
- impairment of relationships with key suppliers or customers of any acquired businesses due to changes in management and ownership; and
- inability to motivate key employees of any acquired businesses.

Further, any product candidate that we acquire may require additional development efforts prior to commercial sale, including extensive clinical testing and approval by the FDA and applicable foreign regulatory authorities. All product candidates are prone to risks of failure typical of pharmaceutical product development, including the possibility that a product candidate will not be shown to be sufficiently safe and effective for approval by regulatory authorities.

Delays in the completion of clinical testing of any of our product candidates could result in increased costs and delay or limit our ability to generate revenues.

Delays in the completion of clinical testing could significantly affect our product development costs. We do not know whether planned clinical trials will be completed on schedule, if at all. The commencement and completion of clinical trials can be delayed for a number of reasons, including delays related to:

- obtaining regulatory approval to commence a clinical trial;
- reaching agreement on acceptable terms with prospective clinical research organizations, or CROs, and trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;

manufacturing sufficient quantities of a product candidate for use in clinical trials;

obtaining institutional review board approval to conduct a clinical trial at a prospective site;

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recruiting and enrolling patients to participate in clinical trials for a variety of reasons, including competition from other clinical trial programs for the treatment of similar conditions; and

maintaining patients who have initiated a clinical trial but may be prone to withdraw due to side effects from the therapy, lack of efficacy or personal issues, or who are lost to further follow-up.

Clinical trials may also be delayed as a result of ambiguous or negative interim results. In addition, a clinical trial may be suspended or terminated by us, an institutional review board overseeing the clinical trial at a clinical trial site (with respect to that site), the FDA, or other regulatory authorities due to a number of factors, including:

failure to conduct the clinical trial in accordance with regulatory requirements or the study protocols;

inspection of the clinical trial operations or trial sites by the FDA or other regulatory authorities resulting in the imposition of a clinical hold;

unforeseen safety issues; or

lack of adequate enrollment or funding to continue the clinical trial.

Additionally, changes in regulatory requirements and guidance may occur, and we may need to amend clinical trial protocols to reflect these changes. Each protocol amendment would require institutional review board review and approval, which may adversely impact the costs, timing or successful completion of the associated clinical trials. If we experience delays in completion, or if we terminate any of our clinical trials, the commercial prospects for our product candidate may be harmed, and our ability to generate product revenues will be delayed. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval.

We may not be able to manage our business effectively if we lose any of our current management team or if we are unable to attract and motivate key personnel.

We may not be able to attract or motivate qualified management and scientific, clinical, operations and commercial personnel in the future due to the intense competition for qualified personnel among biotechnology, pharmaceutical and other businesses, particularly in the greater-Boston area. If we are not able to attract and motivate necessary personnel to accomplish our business objectives, we will experience constraints that will significantly impede the achievement of our objectives.

We are highly dependent on the drug discovery, development, regulatory, commercial, financial and other expertise of our management, particularly Peter M. Hecht, Ph.D., our chief executive officer; Mark G. Currie, Ph.D., our senior vice president, chief scientific officer and president of research and development; Tom Graney, our chief financial officer and senior vice president, finance and corporate strategy; Thomas A. McCourt, our senior vice president, marketing and sales and chief commercial officer; and Halley E. Gilbert, our senior vice president, chief legal officer, and secretary. Transitions in our senior management team may result in operational disruptions, and our business may be harmed as a result. In addition to the competition for personnel, the Boston area in particular is characterized by a high cost of living. As such, we could have difficulty attracting experienced personnel to our company and may be required to expend significant financial resources in our employee recruitment efforts.

We also have scientific and clinical advisors who assist us in formulating our product development, clinical strategies and our global supply chain plans, as well as sales and marketing advisors who have assisted us in our commercialization strategy and brand plan for linaclotide. These advisors are not our employees and may have commitments to, or consulting or advisory contracts with, other entities that may limit their availability to us, or may have arrangements with other companies to assist in the development and commercialization of products that may compete with ours.

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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 and business partners, as well as personally identifiable information of linaclotide patients, clinical trial participants and employees. We also have outsourced elements of our information technology structure, and as a result, we are managing independent vendor relationships with third parties who may or could have access to our confidential information. Similarly, our business partners and other third party providers possess certain of our sensitive data. 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. We, our partners, vendors and other third party providers could be susceptible to third party attacks on our, and their, information security systems, which attacks are of ever increasing levels of sophistication and are made by groups and individuals with a wide range of motives and expertise, including criminal groups. Any such breach could compromise our, and their, 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, any of which could adversely affect our business.

Our business involves the use of hazardous materials, and we must comply with environmental laws and regulations, which can be expensive and restrict how we do business.

Our activities involve the controlled storage, use and disposal of hazardous materials. We are subject to federal, state, city and local laws and regulations governing the use, manufacture, storage, handling and disposal of these hazardous materials. Although we believe that the safety procedures we use for handling and disposing of these materials comply with the standards prescribed by these laws and regulations, we cannot eliminate the risk of accidental contamination or injury from these materials. In the event of an accident, local, city, state or federal authorities may curtail the use of these materials and interrupt our business operations. We do not currently maintain hazardous materials insurance coverage.

Risks Related to Intellectual Property

Limitations on our patent rights relating to our product candidates may limit our ability to prevent third parties from competing against us.

Our success depends on our ability to obtain and maintain patent protection for our product candidates, preserve our trade secrets, prevent third parties from infringing upon our proprietary rights and operate without infringing upon the proprietary rights of others.

The strength of patents in the pharmaceutical industry involves complex legal and scientific questions and can be uncertain. Patent applications in the U.S. and most other countries are confidential for a period of time until they are published, and publication of discoveries in scientific or patent literature typically lags actual discoveries by several months or more. As a result, we cannot be certain that we were the first to conceive inventions covered by our patents and pending patent applications or that we were the first to file patent applications for such inventions. In addition, we cannot be certain that our patent applications will be granted, that any issued patents will adequately protect our intellectual property or that such patents will not be challenged, narrowed, invalidated or circumvented.

We have several issued patents and pending applications in the U.S. related to LINZESS, including a LINZESS composition of matter and methods of use patent (U.S. Patent 7,304,036) as well as

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additional patents and applications covering processes for making LINZESS, formulations and dosing regimens thereof, and molecules related to LINZESS. We were recently issued two U.S. patents relating to our commercial, room temperature stable formulation of linaclotide and methods of using this formulation. Although none of our issued patents currently is subject to a patent reexamination or review, we cannot guarantee that they will not be subject to reexamination or review by the USPTO in the future. If any or all of our LINZESS-related patents were invalidated, we would still have at least five years of marketing exclusivity under the Hatch-Waxman Act from FDA approval of LINZESS. We believe that each of the patents in our linaclotide patent portfolio was rightfully issued and the portfolio gives us sufficient freedom to operate; however, if any of our present or future patents is invalidated, this could have an adverse effect on our business and financial results, particularly for the period beyond five years following marketing approval.

In March 2013, an opposition to one of our granted patents covering linaclotide was filed in Europe. We believe that this patent was appropriately granted and will be upheld by the European Patent Office but we cannot be certain of this until the opposition proceedings are complete. While the opposition is ongoing, we will incur additional expense and be required to focus additional efforts on the proceedings. However, even if this patent were found to be invalid, we have other composition of matter- and use-related linaclotide patents that are granted and in force, and we believe these patents provide strong and sufficient patent protection in Europe.

Furthermore, the America Invents Act, which was signed into law in 2011, has made several major changes in the U.S. patent statutes. These changes will permit third parties to challenge our patents more easily and will create uncertainty with respect to the interpretation and practice of U.S. patent law for the foreseeable future.

We also rely upon unpatented trade secrets, unpatented know-how and continuing technological innovation to develop and maintain our competitive position, which we seek to protect, in part, by confidentiality agreements with our employees and our collaborators and consultants. We also have agreements with our employees and selected consultants that obligate them to assign their inventions to us. It is possible, however, that technology relevant to our business will be independently developed by a person that is not a party to such an agreement. Furthermore, if the employees and consultants that are parties to these agreements breach or violate the terms of these agreements, we may not have adequate remedies, and we could lose our trade secrets through such breaches or violations. Further, our trade secrets could otherwise become known or be independently discovered by our competitors.

In addition, the laws of certain foreign countries do not protect proprietary rights to the same extent or in the same manner as the U.S., and, therefore, we may encounter problems in protecting and defending our intellectual property in certain foreign jurisdictions.

If we are sued for infringing intellectual property rights of third parties, it will be costly and time consuming, and an unfavorable outcome in such litigation could have a material adverse effect on our business.

Our commercial success depends on our ability, and the ability of our collaborators, to develop, manufacture, market and sell our products and use our proprietary technologies without infringing the proprietary rights of third parties. Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we and our collaborators are developing products. As the biotechnology and pharmaceutical industry expands and more patents are issued, the risk increases that our potential products may give rise to claims of infringement of the patent rights of others. There may be issued patents of third parties of which we are currently unaware that may be infringed by linaclotide or our product candidates. Because patent applications can take many years to issue, there may be currently pending applications which may later result in issued patents that linaclotide or our product candidates may infringe.

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We may be exposed to, or threatened with, litigation by third parties alleging that linaclotide or our product candidates infringe their intellectual property rights. If linaclotide or one of our product candidates is found to infringe the intellectual property rights of a third party, we or our collaborators could be enjoined by a court and required to pay damages and could be unable to commercialize linaclotide or the applicable product candidate unless we obtain a license to the intellectual property rights. A license may not be available to us on acceptable terms, if at all. In addition, during litigation, the counter-party could obtain a preliminary injunction or other equitable relief which could prohibit us from making, using or selling our products, pending a trial on the merits, which may not occur for several years.

There is a substantial amount of litigation involving patent and other intellectual property rights in the biotechnology and pharmaceutical industries generally. If a third party claims that we or our collaborators infringe its intellectual property rights, we may face a number of issues, including, but not limited to:

- infringement and other intellectual property claims which, regardless of merit, may be expensive and time-consuming to litigate and may divert our management's attention from our core business;

- substantial damages for infringement, which we may have to pay if a court decides that the product at issue infringes on or violates the third party's rights, and, if the court finds that the infringement was willful, we could be ordered to pay treble damages and the patent owner's attorneys' fees;

- a court prohibiting us from selling our product unless the third party licenses its rights to us, which it is not required to do;

- if a license is available from a third party, we may have to pay substantial royalties, fees or grant cross-licenses to our intellectual property rights; and

- redesigning our products so they do not infringe, which may not be possible or may require substantial monetary expenditures and time.

We may become involved in lawsuits to protect or enforce our patents, which could be expensive and time consuming, and unfavorable outcomes in such litigation could have a material adverse effect on our business.

Competitors may infringe our patents or may assert our patents are invalid. To counter ongoing or potential infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming. Litigation with generic manufacturers has become increasingly common in the biotechnology and pharmaceutical industries. In addition, in an infringement or invalidity proceeding, a court or patent administrative body may determine that a patent of ours is not valid or is unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. An adverse result in any litigation or defense proceedings could put one or more of our patents at risk of being invalidated or interpreted narrowly and could put our patent applications at risk of not issuing.

Interference or derivation proceedings brought by the USPTO may be necessary to determine the priority of inventions with respect to our patents and patent applications or those of our collaborators. An unfavorable outcome could require us to cease using the technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if a prevailing party does not offer us a license on terms that are acceptable to us. Litigation or interference proceedings may fail and, even if successful, may result in substantial costs and distraction of our management and other employees. In addition, we may not be able to prevent, alone or with our collaborators, misappropriation of our proprietary rights, particularly in countries where the laws may not protect those rights as fully as in the U.S.

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Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, as well as the potential for public announcements of the results of hearings, motions or other interim proceeding or developments, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation.

Risks Related to Our Finances and Capital Requirements

We have incurred significant operating losses since our inception and anticipate that we will incur continued losses for the foreseeable future.

In recent years, we have focused primarily on developing, manufacturing and commercializing linaclotide. We and Actavis launched LINZESS in the U.S. in December 2012, and we believe that it will take us some time to attain profitability and positive cash flow from operations for Ironwood. We have financed our operations to date primarily through the issuance of equity, our collaboration and license arrangements and our January 2013 issuance of debt securities related to the sales of LINZESS in the U.S., and we have incurred losses in each year since our inception in 1998. We incurred net losses of approximately $189.6 million, $272.8 million, and $72.6 million in the years ended December 31, 2014, 2013 and 2012, respectively. As of December 31, 2014, we had an accumulated deficit of approximately $967.5 million. Our prior losses and expected future losses, have had and we expect will continue to have, an adverse effect on our stockholders' equity and working capital. We expect to continue to incur substantial expenses in connection with our efforts to commercialize linaclotide and our research and development of our product candidates. As a result, we expect to continue to incur significant operating losses for the foreseeable future. Because of the numerous risks and uncertainties associated with developing pharmaceutical products, we are unable to predict the extent of any future losses or when, or if, our company will become profitable.

We may need additional funding and may be unable to raise capital when needed, which could cause us to delay, reduce or eliminate our product development programs or commercialization efforts.

In the first quarter of 2014, we completed an offering of approximately 15.8 million shares of our Class A common stock at a public offering price of $12.75 per share. However, marketing and selling a primary care drug, purchasing commercial quantities of pharmaceutical products, and developing product candidates and conducting clinical trials are expensive and uncertain. Circumstances, our strategic imperatives, or opportunities to create or acquire new programs could require us to, or we may choose to, seek to raise additional funds. The amount and timing of our future funding requirements will depend on many factors, including, but not limited to:

- the level of underlying demand for linaclotide by prescribers and patients in the U.S., the E.U. and the other countries where it is approved;
- the costs associated with commercializing LINZESS in the U.S.;
- the costs of maintaining and expanding sales, marketing and distribution capabilities for linaclotide;
- the regulatory approval of linaclotide outside of the U.S., the E.U. and the other countries where it is approved, and the timing of commercial launches in those countries, as well as the associated development and commercial milestones and royalties;
- the rate of progress, the cost of our clinical trials and the other costs associated with our product development programs, including our post-approval nonclinical and clinical studies of linaclotide in pediatrics and our investment to enhance the clinical profile of LINZESS within its indicated populations, as well as to study linaclotide in additional indications and populations and in new formulations to assess its potential to treat various GI conditions;

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the costs and timing of in-licensing additional product candidates or acquiring other complementary companies;

the status, terms and timing of any collaboration, licensing, co-commercialization or other arrangements; and

the timing of any regulatory approvals of our product candidates.

Additional funding may not be available on acceptable terms or at all. If adequate funds are not available, we may be required to delay or reduce the scope of our commercialization efforts, delay, reduce or eliminate one or more of our development programs or delay or abandon potential strategic opportunities.

Our ability to pay principal of and interest on our outstanding debt securities will depend in part on the receipt of payments from Actavis under our collaboration agreement that are equal to or in excess of our quarterly payment obligations on each payment date.

In January 2013, we issued $175.0 million in debt securities bearing an annual interest rate of 11%. Quarterly interest payments on these securities commenced on June 15, 2013. In March 2014, we began making quarterly payments on the notes equal to the greater of (i) 7.5% of net sales of LINZESS in the U.S. for the preceding quarter and (ii) the quarterly interest amount. Principal on the notes is repaid in an amount equal to the difference between (i) and (ii) above, when this is a positive number, until the principal has been paid in full. If the cash flows derived from the net quarterly payments that we receive from Actavis under the collaboration agreement are insufficient on any particular payment date to fund the quarterly interest payment, at a minimum, we will be obligated to pay the amounts of such shortfall out of our general funds. We expect that for the next few years, at a minimum, the net quarterly payments from Actavis will be our primary source of cash flow from operations. The determination of whether Actavis will be obligated to make a net quarterly payment to us in respect of a particular quarterly period is a function of the revenue generated by LINZESS in the U.S. as well as the development, manufacturing and commercialization expenses incurred by each of us and Actavis under the collaboration agreement. Accordingly, since we believe that it will take our company some time to attain profitability and positive cash flow from operations, we cannot guarantee that (i) we will have the available funds to fund the quarterly interest payment, at a minimum, in the event that there is a deficiency in the net quarterly payment received from Actavis, (ii) there will be a net quarterly payment from Actavis at all or (iii) we will not also be required to make a true-up payment to Actavis under the collaboration agreement, in each case, in respect of a particular quarterly period.

Our indebtedness could adversely affect our financial condition or restrict our future operations.

As of December 31, 2014, we had total indebtedness of approximately $173.6 million. We chose to issue debt securities based on the additional strategic optionality that this creates for us, and the limited restrictions that these debt securities place on our ability to run our business compared to other potential available financing transactions. However, our indebtedness could have important consequences, including:

limiting our ability to obtain additional financing to fund future working capital, capital expenditures, acquisitions or other general corporate requirements;

requiring a substantial portion of our cash flow to be dedicated to debt service payments instead of other purposes, thereby reducing the amount of cash flow available for working capital, capital expenditures, corporate transactions and other general corporate purposes;

increasing our vulnerability to adverse changes in general economic, industry and competitive conditions;

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limiting our flexibility in planning for and reacting to changes in the industry in which we compete;

placing us at a disadvantage compared to other, less leveraged competitors or competitors with comparable debt at more favorable interest rates; and

increasing our cost of borrowing.

Although we are not as restricted under these debt securities as we might have been under a more traditional secured credit facility provided by a bank, the indenture governing our debt securities contains a number of restrictive covenants that impose restrictions on us and may limit our ability to engage in certain acts, including restrictions on our ability to:

amend our collaboration agreement with Actavis in a way that would have a material adverse effect on the noteholders rights, or terminate this collaboration agreement with respect to the U.S.;

transfer our rights to commercialize the product under our collaboration agreement with Actavis; and

incur certain liens.

Upon a breach of the covenants under our indenture, the noteholders could elect to declare all amounts outstanding under the outstanding debt securities to be immediately due and payable. If we are unable to repay those amounts, the noteholders could proceed against the collateral granted to them to secure the debt securities. If the noteholders under the indenture accelerate the repayment of the debt securities, we cannot be certain that we will have sufficient assets to repay them.

If we breach our covenants under our indenture and seek a waiver, we may not be able to obtain a waiver from the required noteholders. If this occurs we would be in default under our indenture, the noteholders could exercise their rights, as described above, and we could be forced into bankruptcy or liquidation.

Our quarterly and annual operating results may fluctuate significantly.

We expect our operating results to be subject to frequent fluctuations. Our net loss and other operating results will be affected by numerous factors, including:

the level of underlying demand for linaclotide in the U.S., the E.U. and the other countries where it is approved, and wholesalers' buying patterns;

the costs associated with commercializing LINZESS in the U.S.;

the achievement and timing of milestone payments under our existing collaboration and license agreements;

our execution of any collaboration, partnership, licensing or other strategic arrangements, and the timing of payments we may make or receive under these arrangements;

any excess or obsolete inventory and associated write-downs;

variations in the level of expenses related to our development programs;

addition or termination of clinical trials;

regulatory developments affecting linaclotide or our product candidates; and

any material lawsuit in which we may become involved.

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If our operating results fall below the expectations of investors or securities analysts, the price of our Class A common stock could decline substantially. Furthermore, any quarterly or annual fluctuations in our operating results may, in turn, cause the price of our stock to fluctuate substantially.

Our ability to use net operating loss and tax credit carryforwards and certain built-in losses to reduce future tax payments is limited by provisions of the Internal Revenue Code, and it is possible that certain transactions or a combination of certain transactions may result in material additional limitations on our ability to use our net operating loss and tax credit carryforwards.

Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, contain rules that limit the ability of a company that undergoes an ownership change, which is generally any change in ownership of more than 50% of its stock over a three-year period, to utilize its net operating loss and tax credit carryforwards and certain built-in losses recognized in years after the ownership change. These rules generally operate by focusing on ownership changes involving stockholders owning directly or indirectly 5% or more of the stock of a company and any change in ownership arising from a new issuance of stock by the company. Generally, if an ownership change occurs, the yearly taxable income limitation on the use of net operating loss and tax credit carryforwards and certain built-in losses is equal to the product of the applicable long term tax exempt rate and the value of the company's stock immediately before the ownership change. We may be unable to offset our taxable income with losses, or our tax liability with credits, before such losses and credits expire and therefore would incur larger federal or state income tax liability. We have completed several financings since our inception which may have resulted in a change in control as defined by Section 382, or could result in a change in control in the future.

Risks Relating to Securities Markets and Investment in Our Stock

Anti-takeover provisions under our charter documents and Delaware law could delay or prevent a change of control which could negatively impact the market price of our Class A common stock.

Provisions in our certificate of incorporation and bylaws may have the effect of delaying or preventing a change of control. These provisions include the following:

Our certificate of incorporation provides for a dual class common stock structure. As a result of this structure, holders of our Class B common stock have significant influence over certain matters requiring stockholder approval, including a merger involving Ironwood, a sale of substantially all Ironwood assets and a dissolution or liquidation of Ironwood. This concentrated control could discourage others from initiating a change of control transaction that other stockholders may view as beneficial.

Our board of directors is divided into three classes serving staggered three-year terms, such that not all members of the board are elected at one time. This staggered board structure prevents stockholders from replacing the entire board at a single stockholders' meeting.

Our board of directors has the right to elect directors to fill a vacancy created by the expansion of the board of directors or the resignation, death or removal of a director, which prevents stockholders from being able to fill vacancies on our board of directors.

Our board of directors may issue, without stockholder approval, shares of preferred stock. The ability to authorize preferred stock makes it possible for our board of directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to acquire us.

Stockholders must provide advance notice to nominate individuals for election to the board of directors or to propose matters that can be acted upon at a stockholders' meeting. Furthermore, stockholders may only remove a member of our board of directors for cause. These provisions

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may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect such acquirer's own slate of directors or otherwise attempting to obtain control of our company.

Our stockholders may not act by written consent. As a result, a holder, or holders, controlling a majority of our capital stock are not able to take certain actions outside of a stockholders' meeting.

Special meetings of stockholders may be called only by the chairman of our board of directors, our chief executive officer or a majority of our board of directors. As a result, a holder, or holders, controlling a majority of our capital stock are not able to call a special meeting.

A majority of the outstanding shares of Class B common stock are required to amend our certificate of incorporation and a super-majority (80%) of the outstanding shares of common stock are required to amend our bylaws, which make it more difficult to change the provisions described above.

In addition, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which may prohibit certain business combinations with stockholders owning 15% or more of our outstanding voting stock. These and other provisions in our certificate of incorporation and our bylaws and in the Delaware General Corporation Law could make it more difficult for stockholders or potential acquirers to obtain control of our board of directors or initiate actions that are opposed by the then-current board of directors.

The concentration of voting control on certain corporate matters with our pre-IPO stockholders will limit the ability of the holders of our Class A common stock to influence such matters.

Because of our dual class common stock structure, the holders of our Class B common stock, who consist of our pre-IPO investors (and their affiliates), founders, directors, executives and certain of our employees, are able to control certain corporate matters listed below if any such matter is submitted to our stockholders for approval even though such stockholders own less than 50% of the outstanding shares of our common stock. As of December 31, 2014, there were 124,915,658 and 15,907,272 shares of our Class A common stock and Class B common stock issued and outstanding, respectively, and an aggregate of 14,068,613 and 5,889,160 outstanding stock options (vested and unvested) to purchase shares of our Class A common stock and Class B common stock, respectively. As of December 31, 2014, the holders of our Class A common stock own approximately 89% and the holders of our Class B common stock own approximately 11% of the outstanding shares of Class A common stock and Class B common stock, combined. However, because of our dual class common stock structure these holders of our Class A common stock have approximately 44% and holders of our Class B common stock have approximately 56% of the total votes on each of the matters identified in the list below. This concentrated control of our Class B common stockholders limits the ability of the Class A common stockholders to influence those corporate matters and, as a result, we may take actions that many of our stockholders do not view as beneficial, which could adversely affect the market price of our Class A common stock.

Each share of Class A common stock and each share of Class B common stock has one vote per share on all matters except for the following matters, for which each share of our Class B common stock has ten votes per share and each share of our Class A common stock has one vote per share:

adoption of a merger or consolidation agreement involving Ironwood;

a sale of all or substantially all of Ironwood's assets;

a dissolution or liquidation of Ironwood; and

every matter, if and when any individual, entity or "group" (as that term is used in Regulation 13D of the Exchange Act) has, or has publicly disclosed (through a press release or a

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filing with the SEC) an intent to have, beneficial ownership of 30% or more of the number of outstanding shares of Class A common stock and Class B common stock, combined.

If we identify a material weakness in our internal control over financial reporting, it could have an adverse effect on our business and financial results and our ability to meet our reporting obligations could be negatively affected, each of which could negatively affect the trading price of our Class A common stock.

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis. Accordingly, a material weakness increases the risk that the financial information we report contains material errors.

We regularly review and update our internal controls, disclosure controls and procedures, and corporate governance policies. In addition, we are required under the Sarbanes-Oxley Act of 2002 to report annually on our internal control over financial reporting. Our system of internal controls, however well designed and operated, is based in part on certain assumptions and includes elements that rely on information from third parties, including our collaboration partners. Our system can provide only reasonable, not absolute, assurances that the objectives of the system are met. If we, or our independent registered public accounting firm, determine that our internal controls over financial reporting are not effective, or we discover areas that need improvement in the future, these shortcomings could have an adverse effect on our business and financial results, and the price of our Class A common stock could be negatively affected.

Further, we are dependent on our collaboration partners for information related to our results of operations. Our net profit or net loss generated from the sales of LINZESS in the U.S. is partially determined based on amounts provided by Actavis and involves the use of estimates and judgments, which could be modified in the future. We are also highly dependent on our partners for timely and accurate information regarding any revenues realized from sales of linaclotide in their respective territories, and in the case of Actavis and AstraZeneca, the costs incurred in developing and commercializing it in order to accurately report our results of operations. If we do not receive timely and accurate information or incorrectly estimate activity levels associated with the relevant collaboration at a given point in time, whether the result of a material weakness or not, we could be required to record adjustments in future periods. Such adjustments, if significant, could have an adverse effect on our financial results, which could lead to a decline in our Class A common stock price.

If we cannot conclude that we have effective internal control over our financial reporting, or if our independent registered public accounting firm is unable to provide an unqualified opinion regarding the effectiveness of our internal control over financial reporting, investors could lose confidence in the reliability of our financial statements, which could lead to a decline in our stock price. Failure to comply with reporting requirements could also subject us to sanctions and/or investigations by the SEC, The NASDAQ Stock Market or other regulatory authorities.

We expect that the price of our Class A common stock will fluctuate substantially.

The market price of our Class A common stock may be highly volatile due to many factors, including:

the commercial performance of linaclotide in the U.S., the E.U. and the other countries where it is approved;

any third-party coverage and reimbursement policies for linaclotide;

market conditions in the pharmaceutical and biotechnology sectors;

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developments, litigation or public concern about the safety of linaclotide or our potential products;

announcements of the introduction of new products by us or our competitors;

announcements concerning product development results, including clinical trial results, or intellectual property rights of us or others;

actual and anticipated fluctuations in our quarterly and annual operating results;

deviations in our operating results from any guidance we may provide or the estimates of securities analysts;

sales of additional shares of our common stock;

additions or departures of key personnel;

developments concerning current or future collaboration, partnership, licensing or other strategic arrangements; and

discussion of us or our stock price in the financial or scientific press or in online investor communities.

The realization of any of the risks described in these "Risk Factors" could have a dramatic and material adverse impact on the market price of our Class A common stock. In addition, class action litigation has often been instituted against companies whose securities have experienced periods of volatility. Any such litigation brought against us could result in substantial costs and a diversion of management attention, which could hurt our business, operating results and financial condition.

Item 1B. ***Unresolved Staff Comments***

None.

Item 2. ***Properties***

Our corporate headquarters and operations are located in Cambridge, Massachusetts, where, as of December 31, 2014, we occupy approximately 205,000 square feet of office and laboratory space. We lease approximately 312,000 square feet of office and laboratory space at our Cambridge, Massachusetts facility under our lease expiring in January 2018. In 2014, we began subleasing approximately 107,000 square feet of our total leased space to third parties under subleases expiring in 2016 through 2018. We believe that our facilities are suitable and adequate for our needs for the foreseeable future.

Item 3. ***Legal Proceedings***

None.

Item 4. ***Mine Safety Disclosures***

Not applicable.

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PART II

Item 5. ***Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities***

Shares of our Class A common stock are traded on the NASDAQ Global Select Market under the symbol "IRWD." Our shares have been publicly traded since February 3, 2010. The following table furnishes the high and low sales prices for our Class A common stock as reported by The NASDAQ Global Select Market for each quarter in the years ended December 31, 2014 and 2013:

	Class A Common Stock			
	2014		2013	
	High	Low	High	Low
First Quarter	$ 15.47	$ 11.22	$ 19.67	$ 11.11
Second Quarter	$ 15.83	$ 9.01	$ 18.38	$ 9.83
Third Quarter	$ 15.95	$ 11.97	$ 13.95	$ 9.83
Fourth Quarter	$ 15.62	$ 11.65	$ 12.19	$ 8.95

As of February 5, 2015, there were 44 stockholders of record of our Class A common stock and 88 stockholders of record of our Class B common stock. The number of record holders is based upon the actual number of holders registered on the books of the company at such date and does not include holders of shares in "street names" or persons, partnerships, associations, corporations or other entities identified in security position listings maintained by depositories.

Subject to preferences that may apply to any shares of preferred stock outstanding at the time, the holders of Class A common stock and Class B common stock are entitled to share equally in any dividends that our board of directors may determine to issue from time to time. In the event a dividend is paid in the form of shares of common stock or rights to acquire shares of common stock, the holders of Class A common stock will receive Class A common stock, or rights to acquire Class A common stock, as the case may be, and the holders of Class B common stock will receive Class B common stock, or rights to acquire Class B common stock, as the case may be.

We have never declared or paid any cash dividends on our capital stock, and we do not currently anticipate declaring or paying cash dividends on our capital stock in the foreseeable future. We currently intend to retain all of our future earnings, if any, to finance operations. Any future determination relating to our dividend policy will be made at the discretion of our board of directors and will depend on a number of factors, including future earnings, capital requirements, financial conditions, future prospects, contractual restrictions and covenants and other factors that our board of directors may deem relevant.

The information required to be disclosed by Item 201(d) of Regulation S-K, "Securities Authorized for Issuance Under Equity Compensation Plans," is referenced under Item 12 of Part III of this Annual Report on Form 10-K.

Corporate Performance Graph

The following performance graph and related information shall not be deemed to be "soliciting material" or to be "filed" with the SEC, nor shall such information be incorporated by reference into any future filing under the Securities Act of 1933, as amended, or the Securities Act, except to the extent that we specifically incorporate it by reference into such filing.

The following graph compares the performance of our Class A common stock to the NASDAQ Benchmark TR Index (U.S.) and to the NASDAQ Pharmaceutical Benchmark TR Index (U.S.) from February 3, 2010 (the first date that shares of our Class A common stock were publicly traded) through December 31, 2014. The comparison assumes $100 was invested after the market closed on February 3,

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2010 in our Class A common stock and in each of the presented indices, and it assumes reinvestment of dividends, if any.

COMPARISON OF QUARTERLY CUMULATIVE TOTAL RETURN
Among The NASDAQ Benchmark TR Index (U.S.),
the NASDAQ Pharmaceutical Benchmark TR Index (U.S.)
and Ironwood Pharmaceuticals, Inc.

Item 6. ***Selected Consolidated Financial Data***

You should read the following selected financial data together with our consolidated financial statements and the related notes appearing elsewhere in this Annual Report on Form 10-K. We have derived the consolidated statements of operations data for the years ended December 31, 2014, 2013 and 2012 and the consolidated balance sheet data as of December 31, 2014 and 2013 from our audited financial statements included elsewhere in this Annual Report on Form 10-K. We have derived the consolidated statements of operations data for the years ended December 31, 2011 and 2010 and the consolidated balance sheet data as of December 31, 2012, 2011 and 2010 from our audited financial

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statements not included in this Annual Report on Form 10-K. Our historical results for any prior period are not necessarily indicative of results to be expected in any future period.

	Years Ended December 31,				
	2014	2013	2012	2011	2010
	(in thousands, except per share data)				
Consolidated Statement of Operations Data:					
Collaborative arrangements revenue	$ 76,436	$ 22,881	$ 150,245	$ 65,871	$ 43,857
Cost and expenses:					
Cost of revenue[1]	25,583	7,203	965		
Research and development[2][3]	101,890	102,378	113,474	86,093	77,454
Selling, general and administrative[2][3]	118,333	123,228	92,538	45,920	27,169
Collaboration expense[4]		42,074	16,030		
Total cost and expenses	245,806	274,883	223,007	132,013	104,623
Loss from operations	(169,370)	(252,002)	(72,762)	(66,142)	(60,766)
Other (expense) income:					
Interest expense	(21,166)	(21,002)	(59)	(63)	(196)
Interest and investment income	257	192	197	456	614
Other income	661			900	993
Other (expense) income, net	(20,248)	(20,810)	138	1,293	1,411
Net loss from continuing operations before income tax (benefit) expense	(189,618)	(272,812)	(72,624)	(64,849)	(59,355)
Income tax (benefit) expense				3	(2,944)
Net loss from continuing operations	(189,618)	(272,812)	(72,624)	(64,852)	(56,411)
Net income from discontinued operations[2]					4,551
Net loss	(189,618)	(272,812)	(72,624)	(64,852)	(51,860)
Net loss from discontinued operations attributable to noncontrolling interest					(1,121)
Net income attributable to Ironwood Pharmaceuticals, Inc.	$ (189,618)	$ (272,812)	$ (72,624)	$ (64,852)	$ (52,981)
Net income (loss) per share attributable to Ironwood Pharmaceuticals, Inc. basic and diluted:					
Continuing operations	$ (1.39)	$ (2.35)	$ (0.68)	$ (0.65)	$ (0.63)
Discontinued operations					0.04
Net loss per share	$ (1.39)	$ (2.35)	$ (0.68)	$ (0.65)	$ (0.59)
Weighted average number of common shares used in net income (loss) per share attributable to Ironwood Pharmaceuticals, Inc. basic and diluted	136,811	115,852	106,403	99,875	89,653

(1)

During the year ended December 31, 2014, we recorded $20.3 million in cost of revenue related to a write-down of inventory to an estimated net realizable value of approximately $5.0 million. This write-down was primarily attributable to Almirall's reduced inventory demand forecasts, mainly due to the suspension of commercialization of CONSTELLA in Germany and a challenging commercial environment throughout Europe. This write-down is more fully described in Note 7, *Inventory*, to our consolidated financial statements appearing elsewhere in this Annual Report on Form 10-K.

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(2) Includes share-based compensation expense as indicated in the following table:

	Years Ended December 31,				
	2014	2013	2012	2011	2010
	(in thousands)				
Research and development	$ 9,482	$ 9,178	$ 9,080	$ 6,071	$ 4,112
Selling, general and administrative	16,702	10,651	8,493	5,661	3,384
Discontinued operations					59

(3) During the year ended December 31, 2014, we recorded $4.2 million of costs related to a reduction in workforce in the quarter ended March 31, 2014, including employee severance, benefits and related costs and adjustments. These costs are reflected in our Consolidated Statement of Operations for the year ended December 31, 2014 as $3.0 million in research and development expenses and $1.2 million in selling, general and administrative expenses.

(4) Collaboration expense for the years ended December 31, 2011 and 2010 is included in selling, general and administrative expense and was not material.

	December 31,				
	2014	2013	2012	2011	2010
	(in thousands)				
Consolidated Balance Sheet Data:					
Cash, cash equivalents and available-for-sale securities	$ 248,334	$ 197,602	$ 168,228	$ 164,016	$ 248,027
Working capital of continuing operations (excluding deferred revenue)	236,380	193,162	132,883	138,724	234,699
Total assets	333,513	278,962	229,907	208,977	301,365
Deferred revenue, including current portion	16,180	16,490	21,405	57,421	102,433
Long-term debt, including current portion	173,596	174,672			
Capital lease obligations, including current portion	3,723	4,273	569	655	590
Total liabilities	244,961	240,737	85,855	99,121	141,814
Total stockholders' equity	88,552	38,225	144,052	109,856	159,551

Item 7. *Management's Discussion and Analysis of Financial Condition and Results of Operations*

Forward-Looking Information

The following discussion of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and the notes to those financial statements appearing elsewhere in this Annual Report on Form 10-K. This discussion contains forward-looking statements that involve significant risks and uncertainties. As a result of many factors, such as those set forth under "Risk Factors" in Item 1A of this Annual Report on Form 10-K, our actual results may differ materially from those anticipated in these forward-looking statements.

Overview

We are an entrepreneurial pharmaceutical company focused on creating medicines that make a difference for patients, building value to earn the continued support of our fellow shareholders, and empowering our team to passionately pursue excellence. Our core strategy is to establish a leading gastrointestinal, or GI, therapeutics company, leveraging our development and commercial capabilities in addressing GI disorders as well as our pharmacologic expertise in guanylate cyclase, or GC, pathways.

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We have one marketed product, linaclotide, which is available in the United States, or U.S., and Mexico under the trademarked name LINZESS and is available in certain European countries and Canada under the trademarked name CONSTELLA. Linaclotide is also being developed and commercialized in other parts of the world by certain of our partners.

In August 2012, the U.S. Food and Drug Administration, or FDA, approved LINZESS as a once-daily treatment for adult men and women suffering from irritable bowel syndrome with constipation, or IBS-C, or chronic idiopathic constipation, or CIC. We and Forest Laboratories, Inc., or Forest, began commercializing LINZESS in the U.S. in December 2012. In July 2014, Actavis plc, or Actavis, completed its acquisition of Forest. Our collaboration for the development and commercialization of linaclotide in North America remains in effect.

In November 2012, the European Commission granted marketing authorization to CONSTELLA for the symptomatic treatment of moderate to severe IBS-C in adults. CONSTELLA is the first, and to date, only drug approved in the European Union, or E.U., for IBS-C. Our European partner, Almirall, S.A., or Almirall, began commercializing CONSTELLA in Europe in the second quarter of 2013. Currently, CONSTELLA is commercially available in certain European countries, including the United Kingdom, Italy and Spain. In May 2014, Almirall suspended commercialization of CONSTELLA in Germany following an inability to reach agreement with the German National Association of Statutory Health Insurance Funds on a reimbursement price that reflects the innovation and value of CONSTELLA. Almirall is assessing all possibilities to facilitate continued access to CONSTELLA for appropriate patients in Germany.

In December 2013 and February 2014, linaclotide was approved in Canada and Mexico, respectively, as a treatment for adult women and men suffering from IBS-C or CIC. Actavis has exclusive rights to commercialize linaclotide in Canada as CONSTELLA and, through a sublicense from Actavis, Almirall has exclusive rights to commercialize linaclotide in Mexico as LINZESS. In May 2014, Actavis began commercializing CONSTELLA in Canada and in June 2014, Almirall began commercializing LINZESS in Mexico.

Astellas Pharma Inc., or Astellas, our partner in Japan, is developing linaclotide for the treatment of patients with IBS-C in its territory. In October 2014, Astellas initiated a double-blind, placebo-controlled Phase III clinical trial of linaclotide in adult patients with IBS-C. In October 2012, we entered into a collaboration agreement with AstraZeneca AB, or AstraZeneca, to co-develop and co-commercialize linaclotide in China, Hong Kong and Macau, with AstraZeneca having primary responsibility for the local operational execution. In the third quarter of 2013, we and AstraZeneca initiated a double-blind, placebo-controlled Phase III clinical trial of linaclotide in adult patients with IBS-C. We continue to assess alternatives to bring linaclotide to IBS-C and CIC sufferers in the parts of the world outside of our partnered territories.

We and Actavis are also exploring development opportunities to enhance the clinical profile of LINZESS by seeking to expand its utility in its indicated populations, as well as studying linaclotide in additional indications and populations and in new formulations to assess its potential to treat various GI conditions. In November 2014, as part of this strategy we and Actavis initiated a Phase III clinical trial in the U.S. evaluating a 72 mcg dose of linaclotide in adult patients with CIC to provide a broader range of treatment options to physicians and adult CIC patients. In addition to linaclotide-based opportunities, we are advancing multiple GI development programs as well as further leveraging our pharmacological expertise in GC pathways that we established through the development of linaclotide, a guanylate cyclase type-C, or GC-C, agonists, to advance a second GC program targeting soluble guanylate cyclase, or sGC. sGC is a validated mechanism with the potential for broad therapeutic utility and multiple opportunities for product development in cardiovascular disease and other indications.

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We were incorporated in Delaware on January 5, 1998 as Microbia, Inc. On April 7, 2008, we changed our name to Ironwood Pharmaceuticals, Inc. We currently operate in one reportable business segment human therapeutics.

To date, we have dedicated substantially all of our activities to the research, development and commercialization of linaclotide, as well as to the research and development of our other product candidates. We have incurred significant operating losses since our inception in 1998. As of December 31, 2014, we had an accumulated deficit of approximately $967.5 million and we expect to continue to incur net losses for the foreseeable future.

In February 2012, we sold 6,037,500 shares of our Class A common stock through a firm commitment, underwritten public offering at a price to the public of $15.09 per share. As a result of the offering, we received aggregate net proceeds, after underwriting discounts and commissions and other offering expenses, of approximately $85.2 million. On January 4, 2013, we closed a private placement of $175.0 million in aggregate principal amount of 11% notes due on or before June 15, 2024. As a result of the debt offering, we received aggregate net proceeds, after offering expenses, of approximately $167.3 million. During the second quarter of 2013, we sold 11,204,948 shares of our Class A common stock through a firm commitment, underwritten public offering at a price to the public of $13.00 per share. As a result of the offering, we received aggregate net proceeds, after underwriting discounts and commissions and other offering expenses, of approximately $137.8 million. In February 2014, we sold 15,784,325 shares of our Class A common stock through a firm commitment, underwritten public offering at a price to the public of $12.75 per share. As a result of this offering, we received aggregate net proceeds, after underwriting discounts and commissions and other offering expenses, of approximately $190.4 million. The net proceeds from this offering are being used to support the commercialization of LINZESS in the U.S. and to fund linaclotide and other development opportunities to advance our strategy to grow a leading GI company, in addition to general corporate purposes.

On January 8, 2014, we announced a headcount reduction of approximately 10% to align our workforce with our strategy to grow a leading GI therapeutics company. As maximizing LINZESS is core to our strategy, our field-based sales force and medical science liaison teams were excluded from this reduction in workforce. During the three months ended March 31, 2014, we substantially completed the implementation of this reduction in workforce and recorded approximately $4.3 million of costs in research and development and selling, general and administrative expenses, including employee severance, benefits and related costs. We did not record any additional charges associated with this workforce reduction during the year ended December 31, 2014. All payments related to this reduction in workforce were made by the end of 2014.

Financial Overview

Revenue. Revenue to date has been generated primarily through our collaboration agreements with Actavis and AstraZeneca, and our license agreements with Almirall and Astellas. The terms of these agreements contain multiple deliverables which may include (i) licenses, (ii) research and development activities, and (iii) the manufacture of finished drug product, active pharmaceutical ingredient, or API, or development materials for the collaborative partners. Payments to us may include one or more of the following: nonrefundable license fees, payments for research and development activities, payments for the manufacture of finished drug product, API or development materials, payments based upon the achievement of certain milestones and royalties on product sales. Additionally, we receive our share of the net profits or bear our share of the net losses from the sale of linaclotide in the U.S. and China. LINZESS launched in the U.S. in December 2012 and CONSTELLA became commercially available in certain European countries beginning in the second quarter of 2013. Linaclotide is also approved in a number of other countries.

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We record our share of the net profits and losses from the sales of LINZESS in the U.S. on a net basis and present the settlement payments as collaborative arrangements revenue or collaboration expense, as applicable. Net profits or losses consist of net sales to third-party customers in the U.S. less the cost of goods sold as well as selling, general and administrative expenses. Although we expect net sales to increase over time, the settlement payments between Actavis and us, resulting in collaborative arrangements revenue or collaboration expense, are subject to fluctuation based on the ratio of selling, general and administrative expenses incurred by each party. In addition, our collaborative arrangements revenue may fluctuate as a result of timing and amount of license fees and clinical and commercial milestones received and recognized under our current and future strategic partnerships as well as timing and amount of royalties from the sales of linaclotide in the European, Canadian or Mexican markets. One instance of this potential fluctuation relates to the challenging environment in the European pharmaceutical sector. As challenges in obtaining adequate pricing and reimbursement for pharmaceutical products in Europe have grown in recent periods, it became clear to us and our partner, Almirall, that revising certain aspects of our current partnership would benefit the potential for linaclotide. Accordingly, in June 2013 and February 2014, we amended the Almirall license agreement to make the amount and timing of certain of the commercial launch milestones contingent on the reimbursement amount in such countries in exchange for additional new sales-based incentives and a more favorable royalty structure at certain sales thresholds.

Cost of Revenue. Cost of revenue is recognized upon shipment of linaclotide API to certain of our licensing partners outside of the U.S. Our cost of revenue consists of the internal and external costs of producing such API. We expensed most of the manufacturing costs of API as research and development expenses in the periods prior to July 1, 2012, at which date we began capitalizing linaclotide-related inventory costs as their realizability became probable, based on our evaluation of, among other factors, the status of the linaclotide New Drug Applications, or NDA, in the U.S., the Committee for Medicinal Products for Human Use, or CHMP, positive recommendation to grant marketing approval for CONSTELLA in Europe, and the ability of our third-party suppliers to successfully manufacture commercial quantities of linaclotide API. As of December 31, 2012, the previously expensed commercial API inventory was substantially utilized. During the year ended December 31, 2014, we wrote-down approximately $20.3 million in inventory to an estimated net realizable value of approximately $5.0 million. This write-down was primarily attributable to Almirall's reduced inventory demand forecasts, mainly due to the suspension of commercialization of CONSTELLA in Germany and a challenging commercial environment throughout Europe. This write-down is more fully described in Note 7, *Inventory*, to our consolidated financial statements appearing elsewhere in this Annual Report on Form 10-K.

Research and Development Expense. Research and development expense consists of expenses incurred in connection with the discovery, development, manufacture and distribution of our product candidates. These expenses consist primarily of compensation, benefits and other employee-related expenses, research and development related facility costs, third-party contract costs relating to nonclinical study and clinical trial activities, development of manufacturing processes, regulatory registration of third-party manufacturing facilities and costs associated with linaclotide API prior to meeting our inventory capitalization policy, as well as licensing fees for our product candidates. We charge all research and development expenses to operations as incurred. Under our Actavis and AstraZeneca collaboration agreements, we are reimbursed for certain research and development expenses, and we net these reimbursements against our research and development expenses as incurred. Payments to Actavis or AstraZeneca are recorded as incremental research and development expense.

The core of our research and development strategy is to leverage our development capabilities in addressing GI disorders as well as our pharmacologic expertise in GC pathways to develop new and innovative products.

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Linaclotide. Our lead product is linaclotide, and it represents the largest portion of our research and development expense for our product candidates. Linaclotide is the first and, to date, only FDA-approved GC-C agonist. Linaclotide is approved in the U.S., E.U., and a number of other countries. In addition, Astellas initiated a Phase III clinical trial of linaclotide in adult patients with IBS-C for Japan and we and AstraZeneca initiated a Phase III clinical trial of linaclotide in adult patients with IBS-C for China.

We and Actavis are exploring development opportunities in the U.S. to enhance the clinical profile of LINZESS by seeking to expand its utility in its indicated populations, as well as studying linaclotide in additional indications and populations and in new formulations to assess its potential to treat various GI conditions. In November 2014, as part of this strategy we and Actavis initiated a Phase III clinical trial in the U.S. evaluating a 72 mcg dose of linaclotide in adult patients with CIC, which, if approved, would provide a broader range of treatment options to physicians and adult CIC patients. These development opportunities also include linaclotide colonic release, a targeted oral delivery formulation of linaclotide designed to potentially enhance lower abdominal pain relief in adult IBS-C patients, as well as providing the opportunity to investigate linaclotide as a potential treatment for multiple GI disorders with lower abdominal pain as a predominant symptom. Additionally, we and Actavis are studying linaclotide as a potential treatment of the GI dysfunction associated with opioid-induced constipation in adult patients and are working with the FDA on a plan for clinical pediatric studies with linaclotide.

Early Development Candidates. In addition to linaclotide-based opportunities, we are advancing multiple GI development programs. This includes IW-9179, a GC-C agonist designed to target upper GI conditions, which is being explored for the treatment of diabetic gastroparesis and functional dyspepsia. Additionally, IW-3718 is a gastric retentive formulation of a bile acid sequestrant that is being evaluated for the potential treatment of GERD symptoms in patients who have not responded adequately to treatment with a proton pump inhibitor. We are also leveraging our pharmacological expertise in GC pathways that we established through the development of linaclotide, a GC-C agonist, to advance a second GC program targeting sGC, which we are exploring for utility in cardiovascular disease. We have additional non-core assets in early development that we continued to advance through 2014, and we are currently exploring strategic options for further development of these assets.

Discovery Research. Our discovery efforts are primarily focused on identifying novel clinical candidates that draw on our proprietary and expanding expertise in GI disorders and GC.

The following table sets forth our research and development expenses related to our product pipeline for the years ended December 31, 2014, 2013 and 2012. These expenses relate primarily to external costs associated with nonclinical studies and clinical trial costs, costs incurred to develop manufacturing processes and register manufacturing facilities with the FDA, costs associated with linaclotide API that was expensed prior to meeting our inventory capitalization policy and licensing fees for our product candidates. In the third quarter of 2013, we began to allocate costs related to facilities, depreciation, share-based compensation and research and development support services, laboratory

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supplies and certain other costs directly to programs. Prior-period amounts in the table below were reclassified to conform to the current period's presentation.

	Years Ended December 31,		
	2014	2013	2012
	(in thousands)		
Linaclotide	$ 48,340	$ 46,048	$ 51,044
Early development candidates:			
GI disorders (two compounds)[1]	15,992	11,068	15,547
sGC early development candidates (two compounds)[1]	11,775		
Central nervous system disorders (two compounds)[1]	2,190	14,793	14,910
Allergic disorders (one compound)[1]		916	5,232
Total early development candidates	29,957	26,777	35,689
Discovery research	23,593	29,553	26,741
	$ 101,890	$ 102,378	$ 113,474

(1) Number of compounds for early development candidates is for the year ended December 31, 2014.

Since 2004, the date we began tracking costs by program, we have incurred approximately $306.7 million of research and development expenses related to linaclotide. The expenses for linaclotide include both our portion of the research and development costs incurred by Actavis and AstraZeneca for linaclotide and invoiced to us under the cost-sharing provisions of our collaboration agreements, as well as the unreimbursed portion of research and development costs incurred by us under such cost-sharing provisions.

The lengthy process of securing regulatory approvals for new drugs requires the expenditure of substantial resources. Any failure by us to obtain, or any delay in obtaining, regulatory approvals would materially adversely affect our product development efforts and our business overall. In August 2012, the FDA approved our New Drug Applications for LINZESS as a once-daily treatment for adult men and women suffering from IBS-C or CIC. In connection with the FDA approval, we are required to conduct certain nonclinical and clinical studies, including those aimed at understanding: (a) whether orally administered linaclotide can be detected in breast milk, (b) the potential for antibodies to be developed to linaclotide, and if so, (c) whether antibodies specific for linaclotide could have any therapeutic or safety implications. In addition, we and Actavis established a nonclinical and clinical post-marketing plan with the FDA to understand the efficacy and safety of LINZESS in pediatric patients. The first step in this plan was to undertake certain additional nonclinical studies, which we have completed. The FDA has concluded that the nonclinical data from these additional studies do not present a reason not to proceed with clinical studies in older pediatric patients (age 12 and above). We and Actavis are working with the FDA on a plan for clinical pediatric studies. In October 2012, we entered into a collaboration agreement with AstraZeneca under which we will jointly develop and commercialize linaclotide in China, Hong Kong and Macau, with AstraZeneca having primary responsibility for the local operational execution. We and Actavis are also exploring development opportunities to enhance the clinical profile of LINZESS by seeking to expand its utility in its indicated populations, as well as studying linaclotide in additional indications and populations and in new formulations to assess its potential to treat various GI conditions. Therefore, we cannot currently estimate with any degree of certainty the amount of time or money that we will be required to expend in the future on linaclotide in pediatrics, for other geographic markets, within its indicated population, in additional indications and populations or in new formulations. In addition to linaclotide-based

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opportunities, we are advancing multiple GI development programs as well as further leveraging our pharmacological expertise in GC pathways that we established through the development of linaclotide, a GC-C agonist, to advance a second GC program targeting sGC. sGC is a validated mechanism with the potential for broad therapeutic utility and multiple opportunities for product development in cardiovascular disease and other indications. Given the inherent uncertainties that come with the development of pharmaceutical products, we cannot estimate with any degree of certainty how these programs will evolve, and therefore the amount of time or money that would be required to obtain regulatory approval to market them. As a result of these uncertainties surrounding the timing and outcome of any approvals, we are currently unable to estimate precisely when, if ever, linaclotide's utility will be expanded in its indicated population; if or when linaclotide will be developed in pediatrics or otherwise outside of its current markets, indications, populations or formulations; or when, if ever, any of our other product candidates will generate revenues and cash flows.

We invest carefully in our pipeline, and the commitment of funding for each subsequent stage of our development programs is dependent upon the receipt of clear, supportive data. In addition, we are actively engaged in evaluating externally-discovered drug candidates at all stages of development that fit within our core strategy. In evaluating potential assets, we apply the same criteria as those used for investments in internally-discovered assets.

The successful development of our product candidates is highly uncertain and subject to a number of risks including, but not limited to:

- The duration of clinical trials may vary substantially according to the type, complexity and novelty of the product candidate.
- The FDA and comparable agencies in foreign countries impose substantial requirements on the introduction of therapeutic pharmaceutical products, typically requiring lengthy and detailed laboratory and clinical testing procedures, sampling activities and other costly and time-consuming procedures.
- Data obtained from nonclinical and clinical activities at any step in the testing process may be adverse and lead to discontinuation or redirection of development activity. Data obtained from these activities also are susceptible to varying interpretations, which could delay, limit or prevent regulatory approval.
- The duration and cost of discovery, nonclinical studies and clinical trials may vary significantly over the life of a product candidate and are difficult to predict.
- The costs, timing and outcome of regulatory review of a product candidate may not be favorable.
- The emergence of competing technologies and products and other adverse market developments may negatively impact us.

As a result of the uncertainties discussed above, we are unable to determine the duration and costs to complete current or future nonclinical and clinical stages of our product candidates or when, or to what extent, we will generate revenues from the commercialization and sale of our product candidates. Development timelines, probability of success and development costs vary widely. We anticipate that we will make determinations as to which additional programs to pursue and how much funding to direct to each program on an ongoing basis in response to the data of each product candidate, the competitive landscape and ongoing assessments of such product candidate's commercial potential. As a result of the regulatory approvals beginning in 2012, linaclotide has been generating sales in connection with commercial launches in the U.S. and a number of E.U. and other countries.

We expect our research and development costs will be substantial for the foreseeable future. We will continue to invest in linaclotide including the areas of its supply chain, the investigation of ways to

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enhance the clinical profile within its indicated population and the exploration of its utility in other indications and populations and in new formulations. We will also invest in our other product candidates as we advance them through nonclinical studies and clinical trials, in addition to funding full-time equivalents for research and development activities under our external collaboration and license agreements.

Selling, General and Administrative Expense. Selling, general and administrative expense consists primarily of compensation, benefits and other employee-related expenses for personnel in our administrative, finance, legal, information technology, business development, commercial, sales, marketing, communications and human resource functions. Other costs include the legal costs of pursuing patent protection of our intellectual property, general and administrative related facility costs and professional fees for accounting and legal services. As we continue to invest in the commercialization of LINZESS, we expect our selling, general and administrative expenses will be substantial for the foreseeable future. We charge all selling, general and administrative expenses to operations as incurred.

Under our AstraZeneca collaboration agreement, we are reimbursed for certain selling, general and administrative expenses and we net these reimbursements against our selling, general and administrative expenses as incurred. We include Actavis' selling, general and administrative cost-sharing payments in the calculation of the net profits and net losses from the sale of LINZESS in the U.S. and present the net payment to or from Actavis as collaboration expense or collaborative arrangements revenue, respectively. The selling, general and administrative cost-sharing payments to Forest for the nine months ended September 30, 2012 were reclassified to conform to the current period's presentation.

Collaboration Expense. Collaboration expense represents settlement payments due to Actavis on 50% of LINZESS net sales in the U.S. as well as cost of goods sold and selling, general and administrative cost-sharing settlement between us and Actavis. Prior to the fourth quarter of 2012, selling, general and administrative cost-sharing payments were presented within selling, general and administrative expenses. The cost-sharing payments to Actavis for the nine months ended September 30, 2012 were reclassified to conform to the current period's presentation.

Critical Accounting Policies and Estimates

Our discussion and analysis of our financial condition and results of operations is based upon our consolidated financial statements prepared in accordance with U.S. generally accepted accounting principles. The preparation of these financial statements requires us to make certain estimates and assumptions that may affect the reported amounts of assets and liabilities, the reported amounts of revenues and expenses during the reported periods and related disclosures. These estimates and assumptions, including those related to revenue recognition, inventory valuation and related reserves, research and development expenses and share-based compensation are monitored and analyzed by us for changes in facts and circumstances, and material changes in these estimates could occur in the future. We base our estimates on our historical experience, trends in the industry, and various other factors that are believed to be reasonable under the circumstances. Actual results may differ from our estimates under different assumptions or conditions.

We believe that our application of the following accounting policies, each of which require significant judgments and estimates on the part of management, are the most critical to aid in fully understanding and evaluating our reported financial results. Our significant accounting policies are more fully described in Note 2, *Summary of Significant Accounting Policies*, to our consolidated financial statements appearing elsewhere in this Annual Report on Form 10-K.

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Revenue Recognition

Our revenue is generated primarily through collaborative research and development and licensing agreements. The terms of these agreements contain multiple deliverables which may include (i) licenses, (ii) research and development activities, including participation on joint steering committees, and (iii) the manufacture of finished drug product, API or development materials for the collaborative partner, which are reimbursed at a contractually determined rate. Non-refundable payments to us under these agreements may include (i) up-front license fees, (ii) payments for research and development activities, (iii) payments for the manufacture of finished drug product, API or development materials, (iv) payments based upon the achievement of certain milestones and (v) royalties on product sales. Additionally, we may receive our share of the net profits or bear our share of the net losses from the sale of linaclotide in the U.S. and China through our collaborations with Actavis and AstraZeneca, respectively.

We evaluate revenue from new agreements that have multiple elements under the guidance of Accounting Standards Update, or ASU, No. 2009-13, *Multiple-Deliverable Revenue Arrangements*, or ASU 2009-13. We also evaluate whether amendments to our multiple element arrangements are considered material modifications that are subject to the application of ASU 2009-13. This evaluation requires us to assess all relevant facts and circumstances and to make subjective determinations and judgments. As part of this assessment, we consider whether the modification results in a material change to the arrangement, including whether there is a change in total arrangement consideration that is more than insignificant, whether there are changes in the deliverables included in the arrangement, whether there is a change in the term of the arrangement and whether there is a significant modification to the delivery schedule for contracted deliverables.

We identify the deliverables included within multiple element agreements and evaluate which deliverables represent separate units of accounting. We account for those components as separate elements when the following criteria are met:

- the delivered items have value to the customer on a stand-alone basis; and
- if there is a general right of return relative to the delivered items, delivery or performance of the undelivered items is considered probable and within our control.

This evaluation requires subjective determinations and requires us to make judgments about the individual deliverables and whether such deliverables are separable from the other aspects of the contractual relationship. In determining the units of accounting, we evaluate certain criteria, including whether the deliverables have standalone value, based on consideration of the relevant facts and circumstances for each arrangement. Factors considered in this determination include the research, manufacturing and commercialization capabilities of the partner and the availability of peptide research and manufacturing expertise in the general marketplace. In addition, we consider whether the collaborator can use the license or other deliverables for their intended purpose without the receipt of the remaining elements, and whether the value of the deliverable is dependent on the undelivered items and whether there are other vendors that can provide the undelivered items.

The consideration received is allocated among the separate units of accounting using the relative selling price method, and the applicable revenue recognition criteria are applied to each of the separate units.

We determine the estimated selling price for deliverables using vendor-specific objective evidence, or VSOE, of selling price, if available, third-party evidence, or TPE, of selling price if VSOE is not available, or best estimate of selling price, or BESP, if neither VSOE nor TPE is available. Determining the BESP for a deliverable requires significant judgment. We use BESP to estimate the selling price for licenses to our proprietary technology, since we often do not have VSOE or TPE of selling price for these deliverables. In those circumstances where we utilize BESP to determine the estimated selling

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price of a license to our proprietary technology, we consider market conditions as well as entity-specific factors, including those factors contemplated in negotiating the agreements as well as internally developed models that include assumptions related to the market opportunity, estimated development costs, probability of success and the time needed to commercialize a product candidate pursuant to the license. In validating our BESP, we evaluate whether changes in the key assumptions used to determine the BESP will have a significant effect on the allocation of arrangement consideration between multiple deliverables.

We recognize revenue when there is persuasive evidence that an arrangement exists, services have been rendered or delivery has occurred, the price is fixed or determinable, and collection is reasonably assured.

For certain of our arrangements, particularly our license agreement with Almirall, it is required that taxes be withheld on payments to us. We have adopted a policy to recognize revenue net of these tax withholdings.

Net Profit or Net Loss Sharing

The determination of whether we should recognize revenue on a gross or net basis involves judgment based on the relevant facts and circumstances. In accordance with ASC 808 Topic, *Collaborative Arrangements*, and ASC 605-45, *Principal Agent Considerations*, we consider the nature and contractual terms of the arrangement and the nature of our business operations to determine the classification of the transactions under our collaboration agreements. We record revenue transactions gross in the consolidated statements of operations if we are deemed the principal in the transaction, which includes being the primary obligor and having the risks and rewards of ownership.

We recognize our share of the pre-tax commercial net profit or net loss generated from the sales of LINZESS in the U.S. in the period the product sales are reported by Actavis and related cost of goods sold and selling, general and administrative expenses are incurred by us and our collaboration partner. These amounts are partially determined based on amounts provided by Actavis and involve the use of estimates and judgments, such as product sales allowances and accruals related to prompt payment discounts, chargebacks, governmental and contractual rebates, wholesaler fees, product returns, and co-payment assistance costs, which could be adjusted based on actual results in the future. We are highly dependent on Actavis for timely and accurate information regarding any net revenues realized from sales of LINZESS and the costs incurred in selling it, in order to accurately report our results of operations. For the periods covered in the consolidated financial statements presented, there have been no material changes to prior period estimates of revenues, cost of goods sold or selling, general and administrative expenses associated with the sales of LINZESS in the U.S. However, if we do not receive timely and accurate information or incorrectly estimate activity levels associated with the collaboration at a given point in time, we could be required to record adjustments in future periods.

We record our share of the net profits or net losses from the sales of LINZESS on a net basis and present the settlement payments to and from Actavis as collaboration expense or collaborative arrangements revenue, as applicable, as we are not the primary obligor and do not have the risks and rewards of ownership in the collaboration agreement with Actavis. We and our collaboration partner settle the cost sharing quarterly and each payment represents 50% of LINZESS net sales in the U.S. as well as the cost sharing settlement of selling, general and administrative expenses and cost of goods sold between us and Actavis. Prior to the fourth quarter of 2012, selling, general and administrative cost-sharing payments were presented within selling, general and administrative expenses. The cost-sharing payments to Actavis for the nine months ended September 30, 2012 were reclassified to conform to the current period's presentation.

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Up-Front License Fees

We recognize revenues from nonrefundable, up-front license fees related to collaboration and license agreements entered into prior to the adoption of ASU 2009-13, including the $70.0 million up-front license fee under the Actavis collaboration agreement entered into in September 2007, the $40.0 million up-front license fee, of which approximately $38.0 million was received net of foreign withholding taxes, under the Almirall license agreement entered into in April 2009 and the $30 million up-front license fee under the Astellas license agreement entered into in November 2009, on a straight-line basis over the contracted or estimated period of performance since the license deliverables were not deemed to have value on a standalone basis under pre-ASU 2009-13 guidance and we could not determine the fair value of the undelivered elements. The period of performance over which the revenues are recognized is typically the period over which the research and/or development is expected to occur. As a result, we often are required to make estimates regarding drug development and commercialization timelines for compounds being developed pursuant to a collaboration or license agreement. Because the drug development process is lengthy and our collaboration and license agreements typically cover activities over several years, this approach has resulted in the deferral of significant amounts of revenue into future periods. In addition, because of the many risks and uncertainties associated with the development of drug candidates, our estimates regarding the period of performance may change in the future. Any change in our estimates could result in substantial changes to the period over which the revenues from an up-front license fee are recognized. In March 2013, we revised our estimate of the development period associated with our Astellas license agreement from 115 months to 85 months and adjusted the amortization of the remaining deferred revenue accordingly. Aside from this change, we have had no other recent material changes to our estimated periods of continuing involvement under existing collaboration and license agreements. At September 30, 2012, the up-front license fees under the Actavis and Almirall collaborations were fully amortized.

We recognize revenue allocated to the license related to collaboration and license agreements entered into or materially modified, including the amounts allocated to the license under the AstraZeneca collaboration agreement entered into in October 2012, upon delivery, when we believe the license to our intellectual property has stand-alone value. When we recognize revenue allocated to the license upon delivery under any of our collaborations, we may experience significant fluctuations in our collaborative arrangements revenues from quarter to quarter and year to year depending on the timing of transactions. When we believe the license to our intellectual property does not have stand-alone value from the other deliverables to be provided in the arrangement, it is combined with other deliverables and the revenue of the combined unit of accounting is recorded based on the method appropriate for the last delivered item.

Milestones

At the inception of each arrangement that includes pre-commercial milestone payments, we evaluate whether each pre-commercial milestone is substantive, in accordance with ASU No. 2010-17, *Revenue Recognition Milestone Method,* or ASU 2010-17. This evaluation includes an assessment of whether (a) the consideration is commensurate with either (1) the entity's performance to achieve the milestone, or (2) the enhancement of the value of the delivered item(s) as a result of a specific outcome resulting from the entity's performance to achieve the milestone, (b) the consideration relates solely to past performance and (c) the consideration is reasonable relative to all of the deliverables and payment terms within the arrangement. We evaluate factors such as the scientific, clinical, regulatory, commercial and other risks that must be overcome to achieve the respective milestone, the level of effort and investment required and whether the milestone consideration is reasonable relative to all deliverables and payment terms in the arrangement in making this assessment. If a substantive pre-commercial milestone is achieved and collection of the related receivable is reasonably assured, we recognize revenue related to the milestone in its entirety in the period in which the milestone is

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achieved. At December 31, 2014, we had no pre-commercial milestones that were deemed substantive. If we were to achieve milestones that we consider substantive under any of our collaborations, we may experience significant fluctuations in our collaborative arrangements revenue from quarter to quarter and year to year depending on the timing of achieving such substantive milestones. In those circumstances where a pre-commercial milestone is not substantive, we recognize as revenue on the date the milestone is achieved an amount equal to the applicable percentage of the performance period that had elapsed as of the date the milestone was achieved, with the balance being deferred and recognized over the remaining period of performance. Pre-commercial milestone payments received prior to the adoption of ASU 2010-17 continue to be recognized over the remaining period of performance.

Commercial milestones are accounted for as royalties and are recorded as revenue upon achievement of the milestone, assuming all other revenue recognition criteria are met.

Royalties on Product Sales

We receive, or expect to receive in the future, royalty revenues under certain of our license or collaboration agreements. If we do not have any future performance obligations under these license or collaborations agreements, we record these revenues as earned. To the extent we do not have access to the royalty reports from our partners or the ability to accurately estimate the royalty revenue in the period earned, we record such royalty revenues one quarter in arrears.

Other

We produce finished drug product, API and development materials for certain of our collaborators. We recognize revenue on finished drug product, API and development materials when the material has passed all quality testing required for collaborator acceptance, delivery has occurred, title and risk of loss have transferred to the collaborator, the price is fixed or determinable, and collection is reasonably assured. As it relates to development materials and API produced for Almirall and Astellas, we are reimbursed at a contracted rate. Such reimbursements are considered as part of revenue generated pursuant to the Almirall and Astellas license agreements and are presented as collaborative arrangements revenue. Any finished drug product, API and development materials currently produced for Actavis or AstraZeneca are recognized in accordance with the cost-sharing provisions of the Actavis and AstraZeneca collaboration agreements, respectively. We may experience fluctuations in our collaborative arrangements revenue from quarter to quarter and year to year depending on the timing of such transactions.

Inventory Valuation

Inventory is stated at the lower of cost or market with cost determined under the first-in, first-out basis.

We evaluate inventory levels quarterly and any inventory that has a cost basis in excess of its expected net realizable value, inventory that becomes obsolete, inventory in excess of expected sales requirements or inventory that fails to meet commercial sale specifications is written down with a corresponding charge to cost of revenue in the period that the impairment is first identified. We perform quarterly reviews of our inventory for potential excess or obsolescence and rely on data from several sources to estimate its net realizable value, including partner forecasts of projected inventory purchases, our internal forecasts and related process, historical sales by geographic region, and the status of and progress toward commercialization of linaclotide in partnered territories.

We capitalize inventories manufactured in preparation for initiating sales of a product candidate when the related product candidate is considered to have a high likelihood of regulatory approval and the related costs are expected to be recoverable through sales of the inventories. In determining

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whether or not to capitalize such inventories, we evaluate, among other factors, information regarding the product candidate's safety and efficacy, the status of regulatory submissions and communications with regulatory authorities and the outlook for commercial sales, including the existence of current or anticipated competitive drugs and the availability of reimbursement. In addition, we evaluate risks associated with manufacturing the product candidate, including the ability of our third-party suppliers to complete the validation batches, and the remaining shelf life of the inventories.

Costs associated with developmental products prior to satisfying the inventory capitalization criteria are charged to research and development expense as incurred.

There is a risk inherent in these judgments and any changes in these judgments may have a material impact on our financial results in future periods.

Research and Development Expense

All research and development expenses are expensed as incurred. We defer and capitalize nonrefundable advance payments we make for research and development activities until the related goods are received or the related services are performed.

Research and development expenses are comprised of costs incurred in performing research and development activities, including salary, benefits and other employee-related expenses; share-based compensation expense; laboratory supplies and other direct expenses; facilities expenses; overhead expenses; third-party contractual costs relating to nonclinical studies and clinical trial activities and related contract manufacturing expenses, development of manufacturing processes and regulatory registration of third-party manufacturing facilities; costs associated with linaclotide API prior to us concluding that regulatory approval is probable and that its net realizable value is recoverable; licensing fees for our product candidates; and other outside expenses.

Clinical trial expenses include expenses associated with contract research organizations, or CROs. The invoicing from CROs for services rendered can lag several months. We accrue the cost of services rendered in connection with CRO activities based on our estimate of site management, monitoring costs, project management costs, and investigator fees. We maintain regular communication with our CRO vendors to gauge the reasonableness of our estimates. Differences between actual clinical trial expenses and estimated clinical trial expenses recorded have not been material and are adjusted for in the period in which they become known. However, if we incorrectly estimate activity levels associated with the CRO services at a given point in time, we could be required to record material adjustments in future periods. Under our Actavis and AstraZeneca collaboration agreements, we are reimbursed for certain research and development expenses and we net these reimbursements against our research and development expenses as incurred. Payments to Actavis or AstraZeneca are recorded as incremental research and development expense. Nonrefundable advance payments for research and development activities are capitalized and expensed over the related service period or as goods are received.

Share-based Compensation Expense

We make certain assumptions in order to value and record expense associated with awards made under our share-based compensation arrangements. We estimate the fair value of the share-based awards for employees and non-employees using the Black-Scholes option-pricing model. Determining the fair value of share-based awards requires the use of highly subjective assumptions, including expected term of the award and expected stock price volatility. For certain of these awards, we determine the appropriate amount to expense based on the anticipated achievement of performance targets, which requires judgment, including forecasting the achievement of future specified targets. Changes in these assumptions may lead to variability with respect to the amount of expense we recognize in connection with share-based payments.

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During the quarter ended March 31, 2014, we transitioned from a "simplified method" to the use of our historical data when estimating the expected term of stock option grants for purposes of determining stock-based compensation expense. This change did not have a significant impact on our financial position or results of operations for the year ended December 31, 2014.

We recognize compensation expense on a straight-line basis over the requisite service period based upon options that are ultimately expected to vest, and accordingly, such compensation expense is adjusted by the amount of estimated forfeitures. We estimate forfeitures over the requisite service period when recognizing share-based compensation expense based on historical rates and forward-looking factors; these estimates are adjusted to the extent that actual forfeitures differ, or are expected to materially differ, from our estimates.

We have also granted time-accelerated stock options with terms that allow the acceleration in vesting of the stock options upon the achievement of performance-based milestones specified in the grants. Share-based compensation expense associated with these time-accelerated stock options is recognized over the requisite service period of the awards or the implied service period, if shorter.

While the assumptions used to calculate and account for share-based compensation awards represent management's best estimates, these estimates involve inherent uncertainties and the application of management's judgment. As a result, if revisions are made to our underlying assumptions and estimates, our share-based compensation expense could vary significantly from period to period.

Results of Operations

The following discussion summarizes the key factors our management believes are necessary for an understanding of our consolidated financial statements.

	Years Ended December 31,		
	2014	**2013**	**2012**
	(in thousands)		
Collaborative arrangements revenue	$ 76,436	$ 22,881	$ 150,245
Cost and expenses:			
Cost of revenue	25,583	7,203	965
Research and development	101,890	102,378	113,474
Selling, general and administrative	118,333	123,228	92,538
Collaboration expense		42,074	16,030
Total cost and expenses	245,806	274,883	223,007
Loss from operations	(169,370)	(252,002)	(72,762)
Other (expense) income:			
Interest expense	(21,166)	(21,002)	(59)
Interest and investment income	257	192	197
Other income	661		
Other (expense) income, net	(20,248)	(20,810)	138
Net loss	$ (189,618)	$ (272,812)	$ (72,624)

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Year Ended December 31, 2014 Compared to Year Ended December 31, 2013

Revenue

	Years Ended December 31,		Change	
	2014	2013	$	%
	(dollars in thousands)			
Collaborative arrangements revenue	$ 76,436	$ 22,881	$ 53,555	234.1%

Collaborative Arrangements Revenue. The increase in revenue from collaborative arrangements of approximately $53.6 million for the year ended December 31, 2014 compared to the year ended December 31, 2013 was primarily related to an approximately $44.7 million increase in our share of the net profits from the sale of LINZESS in the U.S., an approximately $10.2 million increase in revenue recognized in connection with the achievement of a development milestone under our Astellas license agreement in the fourth quarter of 2014, an approximately $2.6 million increase in license revenue related to our collaboration agreement with AstraZeneca recognized in connection with a modification to the initial development plan and development budget in August 2014, which was deemed to be a material modification, an approximately $0.5 million increase in royalty revenue based on sales of CONSTELLA in the European territory, and an approximately $0.4 million increase in the amortization of deferred revenue associated with the Astellas license agreement due to a change in estimate in the development period in March 2013. The increases were partially offset by an approximately $4.7 million decrease in revenue from the shipments of linaclotide API to our licensing partners.

Cost and Expenses

	Years Ended December 31,		Change	
	2014	2013	$	%
	(dollars in thousands)			
Cost and expenses:				
Cost of revenue	$ 25,583	$ 7,203	$ 18,380	255.2%
Research and development	101,890	102,378	(488)	(0.5)%
Selling, general and administrative	118,333	123,228	(4,895)	(4.0)%
Collaboration expense		42,074	(42,074)	(100.0)%
Total cost and expenses	$ 245,806	$ 274,883	$ (29,077)	(10.6)%

Cost of Revenue. The increase in cost of revenue of approximately $18.4 million for the year ended December 31, 2014 compared to the year ended December 31, 2013 was primarily related to a write-down of approximately $20.3 million in inventory to an estimated net realizable value of approximately $5.0 million. We perform quarterly reviews of our inventory for potential excess or obsolescence and rely on data from several sources to estimate its net realizable value, including partner forecasts of projected inventory purchases, our internal forecasts and related process, historical sales by geographic region, and the status of and progress toward commercialization of linaclotide in partnered territories. Leading up to and early in the launch of CONSTELLA throughout Europe, we expanded our supply chain for API in order to reduce our reliance on any single supplier in this component of the supply chain. As a result, in connection with this expansion of the supply chain and to avoid shortages of API and possible patient impact, we agreed to purchase certain volumes based on higher potential demand levels projected with our European partner, Almirall. During the second quarter of 2014, Almirall reduced its inventory demand forecast, mainly due to the suspension of the commercialization of CONSTELLA in Germany, which led us to write down approximately $8.9 million

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of inventory to net realizable value. During the fourth quarter of 2014, Almirall lowered its inventory demand forecast due to increased commercial challenges throughout Europe, including Germany. Due to this further forecast reduction, and the fact that we have better insight into the launch trajectories outside of the U.S. than we did at launch, in the fourth quarter of 2014, we began placing additional emphasis on historical sales and our internal long range forecasts to evaluate inventory for potential excess or obsolescence, rather than on other data points such as Almirall's inventory demand forecasts, which were used in prior periods. This change in emphasis, in combination with Almirall lowering its inventory demand forecast during the quarter ended December 31, 2014, resulted in a write-down of approximately $11.4 million of inventory to an estimated net realizable value of approximately $5.0 million. The increase in cost of revenue due to the write-down of inventory during the year ended December 31, 2014 was partially offset by $1.9 million attributable to lower sales of linaclotide API to our licensing partners outside of the U.S. in the year ended December 31, 2014 compared to the year ended December 31, 2013.

Research and Development Expense. The decrease in research and development expense of approximately $0.5 million for the year ended December 31, 2014 compared to the year ended December 31, 2013 was primarily related to a decrease of approximately $5.5 million in compensation, benefits and other employee-related expenses primarily associated with decreased average headcount, a decrease of approximately $5.0 million related to the development of manufacturing processes and costs associated with linaclotide API prior to meeting our inventory capitalization policy, a decrease of approximately $3.6 million in costs related to the collaboration with Actavis, and a decrease of approximately $1.0 million in research costs related to our early stage pipeline candidates. The decreases were partially offset by an increase of approximately $8.0 million in external costs related to the development of linaclotide, an increase of approximately $3.2 million in operating costs, including information technology infrastructure costs and facility costs such as rent and amortization of leasehold improvements allocated to research and development, an increase in costs of approximately $3.0 million related to our January 2014 workforce reduction, and an increase of approximately $0.4 million in costs related to the collaboration with AstraZeneca.

Selling, General and Administrative Expense. Selling, general and administrative expenses decreased approximately $4.9 million for the year ended December 31, 2014 compared to the year ended December 31, 2013 primarily as a result of an approximately $6.5 million decrease in external consulting and other service costs primarily associated with developing and maintaining the infrastructure to support linaclotide, an approximately $3.6 million decrease in costs associated with selling expenses and marketing programs, an approximately $1.5 million decrease in compensation, benefits and other employee-related expenses associated with decreased average headcount, and an approximately $0.4 million decrease in selling, general and administrative expenses related to facilities and information technology infrastructure costs associated with operating our Cambridge, Massachusetts facility, including rent and amortization of leasehold improvements. The decreases were partially offset by an approximately $5.9 million increase in share-based compensation costs, of which approximately $2.3 million is related to the departure of an executive officer, and an increase in costs of approximately $1.2 million related to our January 2014 workforce reduction.

Collaboration Expense. Collaboration expense decreased approximately $42.1 million for the year ended December 31, 2014 compared to the year ended December 31, 2013, primarily as a result of our share of higher LINZESS net sales in the U.S., which generated a payment from Actavis to us rather than a payment to Actavis.

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Other (Expense) Income, Net

	Years Ended December 31,		Change	
	2014	2013	$	%
	(dollars in thousands)			
Other (expense) income:				
Interest expense	$ (21,166)	$ (21,002)	$ (164)	0.8%
Interest and investment income	257	192	65	33.9%
Other income	661		661	100%
Total other (expense) income, net	$ (20,248)	$ (20,810)	$ 562	(2.7)%

Interest Expense. Interest expense increased approximately $0.2 million for the year ended December 31, 2014 compared to the year ended December 31, 2013, mainly due to interest associated with capital leases for the automobiles for our field-based sales force and medical science liaisons.

Other Income. The increase in other income of approximately $0.7 million for the year ended December 31, 2014 compared to the year ended December 31, 2013 was primarily related to timing of the recognition of tax incentive awards that were previously received. In the year ended December 31, 2012, we were awarded an approximately $1.7 million tax incentive, associated with the Life Sciences Tax Incentive Program from the Massachusetts Life Sciences Center. During the year ended December 31, 2014, we recognized approximately $0.7 million as other income in the consolidated statement of operations, as we believe we have satisfied our job creation commitments related to this award for 2012 and 2013.

Year Ended December 31, 2013 Compared to Year Ended December 31, 2012

Revenue

	Years Ended December 31,		Change	
	2013	2012	$	%
	(dollars in thousands)			
Collaborative arrangements revenue	$ 22,881	$ 150,245	$ (127,364)	(85)%

Collaborative Arrangements Revenue. The decrease in collaborative arrangements revenue of approximately $127.4 million for the year ended December 31, 2013 compared to the year ended December 31, 2012 was primarily related to an approximately $85.0 million decrease in revenue related to the achievement of milestones under the Actavis collaboration agreement related to the approval of the linaclotide NDAs for both IBS-C and CIC in August 2012, an approximately $33.2 million decrease in the amortization of deferred revenue associated with the development phase of the arrangements with Actavis and Almirall as the performance periods ended in the third quarter of 2012, and an approximately $23.7 million decrease in revenue recognized under the AstraZeneca collaboration agreement primarily associated with revenue recognized upon delivery of the license in 2012. These decreases were partially offset by an approximately $8.0 million increase in revenue from shipments of linaclotide API, primarily to Almirall, an approximately $2.9 million increase in our share of the net profits and net losses from the sale of LINZESS in the U.S., an approximately $1.9 million increase in revenue related to the achievement of certain commercial launch milestones in our arrangement with Almirall (net of foreign tax withholdings), an approximately $1.5 million increase in revenue related to the amortization of deferred revenue associated with the Astellas license agreement due to a change in estimate in the development period, and an approximately $0.2 million increase in royalty revenue based on sales of CONSTELLA in the European territory.

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Cost and Expenses

	Years Ended December 31,		Change	
	2013	2012	$	%
	(dollars in thousands)			
Cost and expenses:				
Cost of revenue	$ 7,203	$ 965	$ 6,238	646%
Research and development	102,378	113,474	(11,096)	(10)%
Selling, general and administrative	123,228	92,538	30,690	33%
Collaboration expense	42,074	16,030	26,044	162%
Total cost and expenses	$ 274,883	$ 223,007	$ 51,876	23%

Cost of Revenue. The increase in cost of revenue of approximately $6.2 million for the year ended December 31, 2013 compared to the year ended December 31, 2012 was primarily related to the cost of linaclotide API sold to our licensing partners. We expensed most of the manufacturing costs of linaclotide API as research and development expenses in the periods prior to July 1, 2012. In the third quarter of 2012, we began capitalizing inventory costs for linaclotide API manufactured in preparation for our planned launch in the U.S. and Europe based on our evaluation of, among other factors, the status of linaclotide NDAs in the U.S., the CHMP positive recommendation to grant marketing approval for CONSTELLA in Europe, and the ability of our third-party suppliers to successfully manufacture commercial quantities of linaclotide API, which provided us with reasonable assurance that the net realizable value of the inventory would be recoverable. As of December 31, 2012, the previously expensed commercial API inventory was substantially utilized.

Research and Development Expense. The decrease in research and development expense of approximately $11.1 million for the year ended December 31, 2013 compared to the year ended December 31, 2012 was primarily related to a decrease of approximately $7.9 million in research costs related to our early stage pipeline candidates, an approximately $4.8 million decrease in external costs related to the development of linaclotide, an approximately $2.4 million decrease in operating costs, including facility costs such as rent and amortization of leasehold improvements allocated to research and development, and an approximately $1.6 million decrease in costs related to the collaboration with Actavis. These decreases were partially offset by an increase of approximately $2.8 million in information technology and other operating costs allocated to research and development, an approximately $1.9 million increase in costs related to the collaboration with AstraZeneca, which was executed in October 2012, an approximately $0.6 million increase related to the development of manufacturing processes and costs associated with linaclotide API prior to meeting our inventory capitalization policy, an approximately $0.2 million increase in compensation, benefits, and employee related expenses primarily related to increased average headcount and increased healthcare costs, and an approximately $0.1 million increase in share-based compensation expense primarily related to our new hire grants and our annual stock option grant made in February 2013.

Selling, General and Administrative Expense. Selling, general and administrative expenses increased approximately $30.7 million for the year ended December 31, 2013 compared to the year ended December 31, 2012 primarily as a result of increases in our workforce expenses and infrastructure due to the launch and commercialization of LINZESS in the U.S. These increases include approximately $26.5 million in compensation, benefits and other employee related expenses associated with increased average headcount, primarily due to our field sales force, approximately $9.4 million in costs associated with selling expenses and marketing programs, approximately $4.0 million in selling, general and administrative expenses related to facilities and information technology infrastructure costs associated with operating our Cambridge, Massachusetts facility, including rent and amortization of leasehold improvements; and approximately $2.2 million in share-based compensation expense primarily related

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to increased average headcount and our annual stock option grant made in February 2013. These increases were partially offset by an approximately $11.4 million decrease in external consulting and other service costs primarily associated with developing and maintaining the infrastructure to support linaclotide.

Collaboration Expense. Collaboration expense increased approximately $26.0 million for the year ended December 31, 2013 compared to the year ended December 31, 2012, primarily as a result of higher selling, general and administrative expenses incurred by us and Actavis and higher cost of goods sold reported by Actavis under our collaboration agreement, partially offset by our share of higher LINZESS net sales in the U.S.

Other (Expense) Income, Net

	Years Ended December 31,		Change	
	2013	2012	$	%
	(dollars in thousands)			
Other (expense) income:				
Interest expense	$ (21,002)	$ (59)	$ (20,943)	35,497%
Interest and investment income	192	197	(5)	(3)%
Total other (expense) income, net	$ (20,810)	$ 138	$ (20,948)	(15,180)%

Interest Expense. Interest expense increased approximately $20.9 million for the year ended December 31, 2013 compared to the year ended December 31, 2012, primarily due to interest on our $175.0 million in aggregate principal amount notes issued in January 2013.

Liquidity and Capital Resources

We have incurred losses since our inception in 1998 and, as of December 31, 2014, we had an accumulated deficit of approximately $967.5 million. We have financed our operations to date primarily through both the private sale of our preferred stock and the public sale of our common stock, including approximately $203.2 million of net proceeds from our initial public offering, or IPO, in February 2010, and approximately $413.4 million of net proceeds from our follow-on public offerings; payments received under our strategic collaborative arrangements, including upfront and milestone payments as well as reimbursement of certain expenses; debt financings, including approximately $167.3 million of net proceeds from the private placement of our notes in January 2013; and the strategic sale of assets or businesses and interest earned on investments. At December 31, 2014, we had approximately $248.3 million of unrestricted cash, cash equivalents and available-for-sale securities. Our cash equivalents include amounts held in money market funds and U.S. government sponsored securities. Our available-for-sale securities include amounts held in U.S. Treasury securities and U.S. government sponsored securities. We invest cash in excess of immediate requirements in accordance with our investment policy, which limits the amounts we may invest in any one type of investment and requires all investments held by us to be at least A+ rated, with a remaining maturity when purchased of less than twelve months, so as to primarily achieve liquidity and capital preservation.

During the year ended December 31, 2014, our balances of cash, cash equivalents and available-for-sale securities increased approximately $50.7 million. This increase is primarily due to approximately $190.4 million in net proceeds from our follow-on public stock offering in February 2014 and approximately $22.7 million in proceeds from the exercise of stock options and the issuance of shares pursuant to our employee stock purchase plan. These sources of cash were partially offset by the cash used to operate our business, as we made payments related to, among other things, research and development and selling, general and administrative expenses as we continued to invest in our research pipeline and support the continued commercialization of LINZESS in the U.S. We also invested approximately $3.5 million in capital expenditures, made principal payments of approximately $1.2 million on outstanding debt and made payments of $1.0 million on capital lease obligations.

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Cash Flows From Operating Activities

Net cash used in operating activities totaled approximately $155.6 million for the year ended December 31, 2014. The primary uses of cash were our net loss of approximately $189.6 million and changes in assets and liabilities of approximately $30.1 million resulting primarily from an increase in related party accounts receivable principally due to higher amounts due from Actavis due to increased profits on the sale of LINZESS, an increase in purchases of linaclotide API, an increase in prepaid expenses and other assets, and an increase in deferred rent. These uses of cash were partially offset by non-cash items of approximately $64.2 million, including approximately $26.2 million in share-based compensation expense, approximately $20.3 million due to the write-down of inventory to net realizable value, approximately $12.3 million in depreciation and amortization expense of property and equipment, approximately $2.6 million in losses on facility subleases, approximately $1.6 million in non-cash interest expense and approximately $1.1 million in accretion of discounts and premiums on available-for-sale securities.

Net cash used in operating activities totaled approximately $273.4 million for the year ended December 31, 2013. The primary uses of cash were our net loss of approximately $272.8 million and changes in assets and liabilities of approximately $35.7 million resulting primarily from a decrease in accounts payable and accrued expenses, including accrued research and development costs due to timing of payments, an increase in inventory for linaclotide API, a decrease in deferred revenue associated with the Astellas license agreement, a decrease in deferred rent and an increase accounts receivable. These uses of cash were partially offset by non-cash items of approximately $35.1 million, including approximately $19.8 million in share-based compensation expense, approximately $11.7 million in depreciation and amortization expense of property and equipment, approximately $1.7 million in non-cash interest expense, approximately $1.3 million in accretion of discounts and premiums on available-for-sale securities and approximately $0.6 million in losses on the disposal of property and equipment.

Net cash used in operating activities totaled approximately $69.6 million for the year ended December 31, 2012. The primary uses of cash were our net loss of approximately $72.6 million and changes in assets and liabilities of approximately $27.1 million resulting primarily from a decrease in deferred revenue associated mainly with the recognition of collaborative arrangements revenue from our Actavis and Almirall agreements, an increase in inventory for linaclotide API manufactured in preparation for its sales launch in the U.S. and Europe, an increase in prepaid expenses and other current assets due to timing of payments, offset by increases in accounts payable and accrued expenses. These uses of cash were partially offset by non-cash items of approximately $30.1 million, including approximately $11.3 million in depreciation and amortization expense of property and equipment, approximately $17.6 million in share-based compensation expense and approximately $1.2 million in accretion of discounts and premiums on available-for-sale securities.

Cash Flows From Investing Activities

Cash used in investing activities for the year ended December 31, 2014 totaled approximately $56.6 million and resulted primarily from the purchase of approximately $254.0 million of available-for-sale securities and the purchase of approximately $3.5 million of property and equipment, primarily manufacturing and laboratory equipment as well as software to improve our information technology infrastructure. This was partially offset by the maturity of approximately $200.9 million in available-for-sale securities.

Cash used in investing activities for the year ended December 31, 2013 totaled approximately $101.4 million and resulted primarily from the purchase of approximately $287.9 million of available-for-sale securities and the purchase of $9.6 million of property and equipment, primarily manufacturing and laboratory equipment as well as software to improve our information technology

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infrastructure. This was partially offset by the maturity of approximately $196.1 million in available-for-sale securities.

Cash provided by investing activities for the year ended December 31, 2012 totaled approximately $30.1 million and resulted primarily from the sale and maturity of approximately $140.8 million in available-for-sale securities. This was partially offset by the purchase of approximately $96.7 million of available-for-sale securities and the purchase of approximately $14.0 million of property and equipment, primarily leasehold improvements, associated with the expansion of our Cambridge, Massachusetts facility and software to improve our information technology infrastructure.

Cash Flows From Financing Activities

Cash provided by financing activities for the year ended December 31, 2014 totaled approximately $210.9 million and resulted primarily from approximately $190.4 million in net proceeds from our follow-on public stock offering in the first quarter of 2014 and approximately $22.7 million in cash provided by stock option exercises and the issuance of shares under our employee stock purchase plan, partially offset by approximately $1.2 million in cash used for principal payments on debt and approximately $1.0 million in cash used for payments on our capital leases.

Cash provided by financing activities for the year ended December 31, 2013 totaled approximately $313.6 million and resulted primarily from approximately $167.3 million in net proceeds from our debt financing in January 2013, approximately $137.8 million in net proceeds from our follow-on public stock offering in the second quarter of 2013 and approximately $9.3 million in cash provided by stock option exercises and the issuance of shares under our employee stock purchase plan, partially offset by approximately $0.8 million in cash used for payments on our capital leases.

Cash provided by financing activities for the year ended December 31, 2012 totaled approximately $89.0 million and resulted primarily from approximately $85.2 million in net proceeds from our follow-on public stock offering in February 2012, approximately $4.0 million in cash provided by stock option exercises and the purchase of shares under the employee stock purchase plan, partially offset by approximately $0.3 million in cash used for payments on our capital leases.

Funding Requirements

In August 2012, we received regulatory approval for LINZESS in the U.S. for the treatment of IBS-C or CIC in adults and, in December 2012, commenced our commercial launch with our collaboration partner, Actavis. While we began commercializing LINZESS in the fourth quarter of 2012, our company has not achieved profitability. In November 2012, our European partner, Almirall, received approval for CONSTELLA for the treatment of IBS-C in adults, which is currently being commercialized in certain European countries by Almirall. In December 2013 and February 2014, linaclotide was approved in Canada and Mexico, respectively, as a treatment for adult women and men suffering from IBS-C or CIC. Actavis has exclusive rights to commercialize linaclotide in Canada as CONSTELLA and, through a sublicense from Actavis, Almirall has exclusive rights to commercialize linaclotide in Mexico as LINZESS. In May 2014, Actavis began commercializing CONSTELLA in Canada and in June 2014, Almirall began commercializing LINZESS in Mexico. Our partnership with Actavis requires total net sales of LINZESS in the U.S. to be reduced by commercial costs incurred by each party, and such resulting net profit or net loss attributable to LINZESS is shared equally between us and Actavis. Additionally, we receive royalties based on sales of linaclotide in the European territory, Canada, and Mexico from our partners. We cannot anticipate when, if ever, proceeds generated from sales of LINZESS and CONSTELLA will enable us to become cash flow positive. We anticipate that we will continue to incur substantial expenses for the next several years as we further develop and commercialize linaclotide in the U.S., China and other markets, and continue to invest in our pipeline and potentially other external opportunities. In addition, we are generally required to

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make cash expenditures to manufacture linaclotide API in advance of selling it to our collaboration partners and collecting payments for such inventory sales, which may result in significant periodic uses of cash. We believe that our cash on hand as of December 31, 2014 will be sufficient to meet our projected operating needs at least through the next twelve months.

Our forecast of the period of time through which our financial resources will be adequate to support our operations, including the underlying estimates regarding the costs to obtain regulatory approval and the costs to commercialize linaclotide in the U.S., China and other markets, is a forward-looking statement that involves risks and uncertainties, and actual results could vary materially and negatively as a result of a number of factors, including the factors discussed in the "Risk Factors" section of this Annual Report on Form 10-K. We have based our estimates on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we currently expect.

Due to the numerous risks and uncertainties associated with the development and commercialization of our product candidates, we are unable to estimate precisely the amounts of capital outlays and operating expenditures necessary to complete the development of, and to obtain regulatory approval for, linaclotide (other than in the countries where it is already approved) and our other product candidates, or to commercialize linaclotide and our other product candidates, in each case, for all of the markets, indications, populations and formulations for which we believe each product candidate is suited. Our funding requirements will depend on many factors, including, but not limited to, the following:

- the rate of progress and cost of our commercialization activities;
- the expenses we incur in marketing and selling LINZESS and any other products;
- the revenue generated by sales of LINZESS, CONSTELLA and any other products;
- the success of our third-party manufacturing activities;
- the time and costs involved in developing, and obtaining regulatory approvals for, our product candidates;
- the success of our research and development efforts;
- the emergence of competing or complementary developments;
- the costs of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights;
- the terms and timing of any additional collaborative, licensing or other arrangements that we may establish; and
- the acquisition of businesses, products and technologies.

Financing Strategy

We may, from time to time, consider additional funding through a combination of new collaborative arrangements, strategic alliances, and additional equity and debt financings or from other sources. We will continue to manage our capital structure and to consider all financing opportunities, whenever they may occur, that could strengthen our long-term liquidity profile. Any such capital transactions may or may not be similar to transactions in which we have engaged in the past. There can be no assurance that any such financing opportunities will also be available on acceptable terms, if at all.

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Contractual Commitments and Obligations

Lease and Commercial Supply Obligations

The following table summarizes our lease and commercial supply obligations at December 31, 2014 (excluding interest):

	Payments Due by Period				
	Total	Less Than 1 Year	1 3 Years	3 5 Years	More Than 5 Years
	(in thousands)				
Commercial supply obligations[1]	$ 26,580	$ 5,010	$ 13,980	$ 5,060	$ 2,530
Capital lease obligations[2]	4,182	1,434	2,663	85	
Operating lease obligations[3]	46,764	14,342	31,787	635	
Total contractual obligations	$ 77,526	$ 20,786	$ 48,430	$ 5,780	$ 2,530

(1) We have multiple commercial supply agreements with contract manufacturing organizations for the purchase of linaclotide finished drug product and API. The table above reflects our minimum purchase requirements under these commercial supply agreements, as well as any outstanding non-cancellable purchase orders, related to the supply contracts associated with the territories not covered by our collaboration with Actavis. In addition, we and Actavis are jointly obligated to make minimum purchases of linaclotide API for the territories covered by our collaboration with Actavis. Currently, Actavis fulfills all such minimum purchase commitments and, as a result, they are excluded from the table above.

(2) Our commitment for capital lease obligations principally relates to leased automobiles for our field-based sales force and medical science liaisons, and computer and office equipment.

(3) Our commitments for operating leases relate to our lease of office and laboratory space in Cambridge, Massachusetts and our data storage space in Boston, Massachusetts. In the third quarter of 2014, we entered into two arrangements, with the landlord's consent, to sublease a portion of our Cambridge, Massachusetts corporate headquarters. The future minimum lease payments included in this table do not reflect the $1.6 million of sublease rental income that we are entitled to receive through 2016 under the first sublease or the $14.6 million of sublease rental income that we are entitled to receive through 2018 under the second sublease.

Notes Payable

On January 4, 2013, we closed a private placement of $175.0 million in aggregate principal amount of notes due on or before June 15, 2024. The notes bear an annual interest rate of 11%, with interest payable March 15, June 15, September 15 and December 15 of each year (each a "Payment Date") beginning June 15, 2013. On March 15, 2014, we began making quarterly payments on the notes equal to the greater of (i) 7.5% of net sales of LINZESS in the U.S. for the preceding quarter (the "Synthetic Royalty Amount") and (ii) accrued and unpaid interest on the notes (the "Required Interest Amount"). Principal on the notes will be repaid in an amount equal to the Synthetic Royalty Amount minus the Required Interest Amount, when this is a positive number, until the principal has been paid in full. Given the principal payments on the notes are based on the net sales of LINZESS in the U.S., which will vary from quarter to quarter, the notes may be repaid prior to June 15, 2024, the final legal maturity date. We made principal payments of $1.2 million through December 31, 2014. Since we are unable to reliably estimate the exact timing and amounts of the principal payments, as discussed under "Risk Factors" in Item 1A of this Annual Report on Form 10-K, the notes-related commitments are not included in the table above.

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Commitments Related to Our Collaboration and License Agreements

Under our collaborative agreements with Actavis and AstraZeneca, we share with Actavis and AstraZeneca all development and commercialization costs related to linaclotide in the U.S. and China, respectively. The actual amounts that we pay our partners or that partners pay to us will depend on numerous factors outside of our control, including the success of our clinical development efforts with respect to linaclotide, the content and timing of decisions made by the regulators, the reimbursement and competitive landscape around linaclotide and our other product candidates, and other factors described under "Risk Factors" in Item 1A of this Annual Report on Form 10-K.

In addition, we have commitments to make potential future milestone payments under one of our license and collaboration arrangements totaling $23.0 million, which includes $5.0 million for development milestones and $18.0 million for regulatory milestones. We are also committed to make potential future milestone payments of up to $114.5 million per product to one of our collaboration partners, including $21.5 million for development milestones, $58.0 million for regulatory milestones and $35.0 million for sales-based milestones. These milestones primarily include the commencement and results of clinical trials, obtaining regulatory approval in various jurisdictions and the future commercial success of development programs, the outcome and timing of which are difficult to predict and subject to significant uncertainty. In addition to the milestones discussed above, we are obligated to pay royalties on future sales, which are contingent on generating levels of sales of future products that have not been achieved and may never be achieved. Since we are unable to reliably estimate the timing and amounts of such milestone and royalty payments, or whether they will occur at all, these contingent payments have been excluded from the table above. See Note 4, "Collaboration and License Agreements," in the accompanying notes to consolidated financial statements for additional information regarding our license and collaboration arrangements.

Other Funding Commitments

As of December 31, 2014, we have several on-going studies in various clinical trial stages. Our most significant clinical trial expenditures are to CROs. The contracts with CROs generally are cancellable, with notice, at our option and do not have any significant cancellation penalties. These items are not included in the table above.

Off-Balance Sheet Arrangements

We do not have any relationships with unconsolidated entities or financial partnerships, such as entities often referred to as structured finance or special purpose entities, that would have been established for the purpose of facilitating off-balance sheet arrangements (as that term is defined in Item 303(a)(4)(ii) of Regulation S-K) or other contractually narrow or limited purposes. As such, we are not exposed to any financing, liquidity, market or credit risk that could arise if we had engaged in those types of relationships. We enter into guarantees in the ordinary course of business related to the guarantee of our own performance and the performance of our subsidiaries.

New Accounting Pronouncements

For a discussion of new accounting pronouncements please refer to Note 2, "Summary of Significant Accounting Policies", to our consolidated financial statements included in this report.

Item 7A. ***Quantitative and Qualitative Disclosures about Market Risk***

Interest Rate Risk

We are exposed to market risk related to changes in interest rates. We invest our cash in a variety of financial instruments, principally securities issued by the U.S. government and its agencies and

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money market instruments. The goals of our investment policy are preservation of capital, fulfillment of liquidity needs and fiduciary control of cash and investments. We also seek to maximize income from our investments without assuming significant risk.

Our primary exposure to market risk is interest income sensitivity, which is affected by changes in the general level of interest rates, particularly because our investments are in short-term marketable securities. Due to the short-term duration of our investment portfolio and the low risk profile of our investments, an immediate 1% change in interest rates would not have a material effect on the fair market value of our portfolio. Accordingly, we would not expect our operating results or cash flows to be affected to any significant degree by the effect of a sudden change in market interest rates on our investment portfolio.

We do not believe our cash, cash equivalents and available-for-sale securities have significant risk of default or illiquidity. While we believe our cash, cash equivalents and available-for-sale securities do not contain excessive risk, we cannot provide absolute assurance that in the future our investments will not be subject to adverse changes in market value. In addition, we maintain significant amounts of cash, cash equivalents and available-for-sale securities at one or more financial institutions that are in excess of federally insured limits. Given the potential instability of financial institutions, we cannot provide assurance that we will not experience losses on these deposits.

Our capital lease and debt obligations bear interest at a fixed rate and therefore have minimal exposure to changes in interest rates; however, because these interest rates are fixed, we may be paying a higher interest rate, relative to market, in the future if our credit rating improves or other circumstances change.

Foreign Currency Risk

We have no significant operations outside the U.S. and we do not expect to be impacted significantly by foreign currency fluctuations.

Effects of Inflation

We do not believe that inflation and changing prices over the years ended December 31, 2014, 2013 and 2012 had a significant impact on our results of operations.

Item 8. ***Consolidated Financial Statements and Supplementary Data***

Our consolidated financial statements, together with the independent registered public accounting firm report thereon, appear at pages F-1 through F-51, of this Annual Report on Form 10-K.

Item 9. ***Changes in and Disagreements with Accountants on Accounting and Financial Disclosure***

None.

Item 9A. ***Controls and Procedures***

Evaluation of Disclosure Controls and Procedures

As required by Rule 13a-15(b) of the Exchange Act, our management, including our principal executive officer and our principal financial officer, conducted an evaluation as of the end of the period covered by this Annual Report on Form 10-K of the effectiveness of the design and operation of our disclosure controls and procedures. Based on that evaluation, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures are effective at the reasonable assurance level in ensuring that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within

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the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by us in the reports we file under the Exchange Act is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over our financial reporting. Internal control over financial reporting is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act as the process designed by, or under the supervision of, our Chief Executive Officer and Chief Financial Officer, and effected by our board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of our financial statements for external purposes in accordance with generally accepted accounting principles, and 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 assets;

(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 are being made only in accordance with the authorizations of management and directors; and

(3) provide reasonable assurance regarding the prevention or timely detection of unauthorized acquisition, use or disposition of assets that could have a material effect on our financial statements.

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework provided in *Internal Control Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework). Based on this evaluation, our management concluded that our internal control over financial reporting was effective as of December 31, 2014.

The effectiveness of our internal control over financial reporting as of December 31, 2014 has been audited by Ernst and Young LLP, an independent registered public accounting firm, as stated in their report, which is included herein.

Changes in Internal Control

As required by Rule 13a-15(d) of the Exchange Act, our management, including our principal executive officer and our principal financial officer, conducted an evaluation of the internal control over financial reporting to determine whether any changes occurred during the quarter ended December 31, 2014 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. Based on that evaluation, our principal executive officer and principal financial officer concluded no such changes during the quarter ended December 31, 2014 materially affected, or were reasonably likely to materially affect, our internal control over financial reporting.

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Report of Independent Registered Public Accounting Firm

The Board of Directors and Shareholders of Ironwood Pharmaceuticals, Inc.

We have audited Ironwood Pharmaceuticals, Inc.'s internal control over financial reporting as of December 31, 2014, based on criteria established in Internal Control Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). Ironwood Pharmaceuticals, Inc.'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, Ironwood Pharmaceuticals, Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2014, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Ironwood Pharmaceuticals, Inc. as of December 31, 2014 and 2013, and the related consolidated statements of operations, comprehensive loss, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2014 of Ironwood Pharmaceuticals, Inc. and our report dated February 18, 2015 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Boston, Massachusetts
February 18, 2015

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Item 9B. ***Other Information***

On February 13, 2015, in connection with its ongoing evaluation of our compensation practices, the Compensation and HR Committee of our Board of Directors, or the Committee, increased the individual bonus target for each of our executive officers from 30% to 50% of his or her base salary, commencing with bonuses payable in 2016 for 2015 performance. Consistent with our current practice, actual bonus achievement will be based upon the percent achievement of our corporate goals for the year and the individual performance of each executive officer, as determined by the Committee.

In addition, on such date, the Committee approved our entry into severance arrangements with each of our executive officers, or the Arrangements. Under the Arrangements, our executive officers are eligible to receive the following benefits in the event of an involuntary termination without Cause or a Constructive Termination (each as defined below), provided the executive officer has complied with all of our rules and policies, executed a separation agreement that includes a release of claims and complies with his or her post-employment obligations of non-disclosure, non-competition and non-solicitation:

- an amount equal to 12 months of his or her current base salary, a pro rata amount of his or her target annual cash incentive award for the current year (pro-rated based on the percentage of the year worked prior to the triggering event), an amount equal to his or her full target annual cash incentive award for the current year, and an amount equal to his or her actual annual cash incentive award for the prior year if such amount has not already been paid to him or her; and

- benefit continuation under the Consolidated Omnibus Budget Reconciliation Act, or COBRA, with Ironwood contributing to the cost of such coverage in the same amount as if the executive officer was actively employed, plus COBRA administrative fees, for 12 months following the triggering event. The executive officers are also eligible to receive outplacement assistance consistent with industry standards.

If the triggering event occurs in connection with a change of control of Ironwood, the Arrangements provide that the executive officer will be entitled to receive the greater of the benefits under his or her Arrangement and the benefits under the change of control severance benefit plan in effect at the time of such termination, on a payment-by-payment and benefit-by-benefit basis. The Arrangements further provide that if, in connection with the sale of all or substantially all of the assets of Ironwood, we will cause the acquirer of such assets to assume the Arrangements.

For purposes of the Arrangements, "Constructive Termination" means termination of employment by the executive officer for Good Reason (as defined below); provided that Constructive Termination shall not include any termination of employment (i) by Ironwood for Cause; (ii) by Ironwood as a result of the permanent disability of the executive officer; (iii) as a result of the death of the executive officer; or (iv) as a result of the voluntary termination of employment by the executive officer for any reason other than Good Reason. "Good Reason" means the occurrence of any of the following conditions: (a) a material diminution in the executive officer's authority, duties or responsibilities; (b) a material diminution in the executive officer's total target cash compensation unless such diminution is in connection with a proportional reduction in compensation for all or substantially all executive officers; or (c) the relocation of the executive officer's work place for Ironwood to a location more than 60 miles from the location of the work place prior to the Constructive Termination. The Arrangements provide that "Cause" has the same meaning as ascribed to the term in our Amended and Restated 2010 Employee, Director and Consultant Equity Incentive Plan, as most recently in effect prior to the time of termination, which such plan was previously filed as Exhibit 4.1 to the registration statement on Form S-8 filed with the Securities and Exchange Commission on October 12, 2012.

This description of the Arrangements does not purport to be complete and is subject to and qualified in its entirety by reference to the full text thereof. A copy of the form of Executive Severance Agreement to be entered into with each of our executive officers is filed as Exhibit 10.6 hereto and incorporated herein by reference.

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PART III

Item 10. ***Directors, Executive Officers and Corporate Governance***

We have adopted a code of business conduct and ethics applicable to our directors, executive officers and all other employees. A copy of that code is available on our corporate website at http://www.ironwoodpharma.com. Any amendments to the code of business conduct and ethics, and any waivers thereto involving our executive officers, also will be available on our corporate website. A printed copy of these documents will be made available upon request. The content on our website is not incorporated by reference into this Annual Report on Form 10-K.

Certain information regarding our executive officers is set forth at the end of Part I, Item 1 of this Form 10-K under the heading, "Executive Officers of the Registrant." The other information required by this item is incorporated by reference from our proxy statement for our 2015 Annual Meeting of Stockholders.

Item 11. ***Executive Compensation***

The information required by this item is incorporated by reference from our proxy statement for our 2015 Annual Meeting of Stockholders.

Item 12. ***Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters***

The information relating to security ownership of certain beneficial owners of our common stock and information relating to the security ownership of our management required by this item is incorporated by reference from our proxy statement for our 2015 Annual Meeting of Stockholders.

The table below sets forth information with regard to securities authorized for issuance under our equity compensation plans as of December 31, 2014. As of December 31, 2014, we had four active equity compensation plans, each of which was approved by our stockholders:

Our Amended and Restated 2002 Stock Incentive Plan;

Our Amended and Restated 2005 Stock Incentive Plan;

Our Amended and Restated 2010 Employee, Director and Consultant Equity Incentive Plan; and

Our Amended and Restated 2010 Employee Stock Purchase Plan.

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants, and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders	19,957,773	$ 10.07	10,811,998
Equity compensation plans not approved by security holders			
Total	19,957,773	$ 10.07	10,811,998

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Item 13. ***Certain Relationships and Related Transactions, and Director Independence***

The information required by this item is incorporated by reference from our proxy statement for our 2015 Annual Meeting of Stockholders.

Item 14. ***Principal Accountant Fees and Services***

The information required by this item is incorporated by reference from our proxy statement for our 2015 Annual Meeting of Stockholders.

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PART IV

Item 15. ***Exhibits and Financial Statement Schedules***

(a) List of documents filed as part of this report

(1)
Consolidated Financial Statements listed under Part II, Item 8 and included herein by reference.

(2)
Consolidated Financial Statement Schedules
No schedules are submitted because they are not applicable, not required or because the information is included in the Consolidated Financial Statements or Notes to Consolidated Financial Statements.

(3)
Exhibits

		Incorporated by reference herein	
Number	**Description**	**Form**	**Date**
3.1	Eleventh Amended and Restated Certificate of Incorporation	Annual Report on Form 10-K (File No. 001-34620)	March 30, 2010
3.2	Fifth Amended and Restated Bylaws	Annual Report on Form 10-K (File No. 001-34620)	March 30, 2010
4.1	Specimen Class A common stock certificate	Registration Statement on Form S-1, as amended (File No. 333-163275)	January 20, 2010
4.2	Eighth Amended and Restated Investors' Rights Agreement, dated as of September 1, 2009, by and among Ironwood Pharmaceuticals, Inc., the Founders and the Investors named therein	Registration Statement on Form S-1, as amended (File No. 333-163275)	November 20, 2009
4.3	Indenture, dated as of January 4, 2013, by and between Ironwood Pharmaceuticals, Inc., as issuer of the Notes, and U.S. Bank National Association, as initial trustee of the Notes and as Operating Bank	Form 8-K (File No. 001-34620)	January 8, 2013
10.1#	Amended and Restated 2002 Stock Incentive Plan and form agreements thereunder	Registration Statement on Form S-1, as amended (File No. 333-163275)	December 23, 2009
10.2#	Amended and Restated 2005 Stock Incentive Plan and form agreements thereunder	Registration Statement on Form S-1, as amended (File No. 333-163275)	January 29, 2010
10.3#	Amended and Restated 2010 Employee, Director and Consultant Equity Incentive Plan	Registration Statement on Form S-8, as amended (File No. 333-184396)	October 12, 2012

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Number	Description	Incorporated by reference herein Form	Date
10.3.1#*	Form of Stock Option Agreement under the Amended and Restated 2010 Employee, Director and Consultant Equity Incentive Plan		