INTREXON CORP
Form 10-K
March 31, 2014
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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

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

For the fiscal year ended December 31, 2013

OR

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

For the transition period from _____ to _____.

Commission File Number: 001-36042

INTREXON CORPORATION

(Exact name of registrant as specified in its charter)

Virginia	**26-0084895**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification Number)**
222 Lakeview Avenue, Suite 1400 West Palm Beach, Florida	**33401**
(Address of principal executive offices)	**(Zip Code)**

Registrant s telephone number, including area code (561) 410-7000

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

Title of each class	**Name of each exchange on which registered**
Intrexon Corporation Common Stock, No Par Value	**New York Stock Exchange**

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

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

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

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 x No ¨

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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 (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes x No ¨

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

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 definition of large accelerated filer, accelerated filer and smaller reporting company in Rule 12b-2 of the Exchange Act.

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

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

As of June 30, 2013, the last business day of the registrant s most recently completed second fiscal quarter, there was no established public market for the registrant s common stock and, therefore, the registrant cannot calculate the aggregate market value of its common stock held by non-affiliates as of such date. At December 31, 2013, the aggregate market value of the registrant s common stock held by non-affiliates based upon the closing price of such shares on the New York Stock Exchange on such date was approximately $814.4 million. Shares of common stock held by each executive officer, director and by each person who owns 5% or more of the outstanding common stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of March 20, 2014, there were issued and outstanding 97,794,655 shares of common stock.

Documents incorporated by reference: Portions of the registrant s Proxy Statement for its 2014 Annual Meeting of stockholders are incorporated by reference in Part III of this Annual Report on Form 10-K where indicated. Such proxy statement will be filed with the Securities and Exchange Commission within 120 days of the registrant s fiscal year ended December 31, 2013.

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* Portions of Item 10, and Items 11-14, are incorporated by reference from the Registrant s 2014 Proxy Statement.

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Special Note Regarding Forward-Looking Statements

This Annual Report on Form 10-K contains forward-looking statements within the meaning of the federal securities laws, which statements involve substantial risks and uncertainties. All statements, other than statements of historical facts, included in this Annual Report on Form 10-K regarding our strategy, future events, future operations, future financial position, future revenue, projected costs, prospects, plans, objectives of management and expected market growth are forward-looking statements. The words anticipate, believe, estimate, expect, intend, may, plan, project, would and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. These forward-looking statements include, among other things, statements about:

- our current and future exclusive channel collaborations (ECCs);
- developments concerning our collaborators;
- our ability to successfully enter new markets or develop additional products, whether with our collaborators or independently;
- competition from existing technologies and products or new technologies and products that may emerge;
- actual or anticipated variations in our operating results;
- actual or anticipated fluctuations in our competitors or our collaborators operating results or changes in their respective growth rates;
- our cash position;
- market conditions in our industry;
- our ability, and the ability of our collaborators, to protect our intellectual property and other proprietary rights and technologies;
- our ability, and the ability of our collaborators, to adapt to changes in laws or regulations and policies;

- the ability of our collaborators to secure any necessary regulatory approvals to commercialize any products developed under the ECCs;
- the rate and degree of market acceptance of any products developed by a collaborator under an ECC;
- our ability to retain and recruit key personnel;
- our expectations related to the use of proceeds from our initial public offering; and
- our estimates regarding expenses, future revenue, capital requirements and needs for additional financing.

Forward-looking statements may also concern our expectations relating to AquaBounty Technologies, Inc. We caution you that the foregoing list may not contain all of the forward-looking statements made in this Annual Report on Form 10-K.

We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. We have included important factors in the cautionary statements included in this Annual Report on Form 10-K, particularly in Item 1A, Risk Factors, that could cause actual results or events to differ materially from the forward-looking statements that we make. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments that we may make.

You should read this Annual Report on Form 10-K, the documents that we reference in this Annual Report on Form 10-K, the audited consolidated financial statements and related notes thereto included in this Annual Report on Form 10-K and the documents that we have filed as exhibits completely and with the understanding that our actual future results may be materially different from what we expect. We do not assume any obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

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PART I

Item 1. Business

At present rates of global industrialization and population growth, food and energy supplies and environmental and healthcare resources are becoming more scarce and/or costly. We believe it is not a viable option for mankind to continue on this path new solutions will be necessary to preserve and globally expand a high quality of life. We believe that synthetic biology is a solution.

We believe Intrexon is a leader in the field of synthetic biology, an emerging and rapidly evolving discipline that applies engineering principles to biological systems. Using our suite of proprietary and complementary technologies, we design, build and regulate gene programs, which are DNA sequences that consist of key genetic components. A single gene program or a complex, multi-genic program is fabricated and stored within a DNA vector. Vectors are segments of DNA used as a vehicle to transmit genetic information. DNA vectors can, in turn, be introduced into cells in order to generate a simple or complex cellular system, which are the basic and complex cellular activities that take place within a cell and the interaction of those systems in the greater cellular environment. It is these genetically modified cell systems that can be used to produce proteins, produce small molecules, or serve as cell-based products, which enable the development of new and improved products and manufacturing processes across a variety of end markets, including healthcare, food, energy and environmental sciences. Our synthetic biology capabilities include the ability to precisely control the amount, location and modification of biological molecules to control the function and output of living cells and optimize for desired results at an industrial scale.

Working with our collaborators, we seek to create more effective, less costly and more sustainable solutions than can be provided through current industry practices. We believe our approach to synthetic biology can enable new and improved biotherapeutics, increase the productivity and quality of food crops and livestock, create sustainable alternative energy sources and chemical feed stocks and provide for enhanced environmental remediation. Our business model is to commercialize our technologies through exclusive channel collaborations, or ECCs, with collaborators that have industry expertise, development resources and sales and marketing capabilities to bring new and improved products and processes to market.

Our technologies combine the principles of precision engineering, statistical modeling, automation and production at an industrial scale. We efficiently engineer precise and complex gene programs across many cell types. We apply the engineering principle of a ***design-build-test-learn*** continuum, through which we accumulate knowledge about the characteristics and performance of gene programs and cell lines. This process of continuous learning allows us to enhance our ability to design and build improved and more complex gene programs and cellular systems.

We believe our technologies are broadly applicable across many diverse end markets, including some end markets that have failed to recognize the applicability of synthetic biology or failed to efficiently utilize biologically based processes to produce products. We have devised our business model to bring many different commercial products to market through the formation of ECCs with collaborators that have expertise within specific industry segments, but, to date, no commercial products have been enabled by our technologies. In our ECCs, we provide expertise in the engineering, fabrication and modification of gene programs and cellular systems, and our collaborators are responsible for providing market and product development expertise, as well as regulatory, sales and marketing capabilities. Generally, our collaborators compensate us through technology access fees, royalties, milestones and reimbursements of certain costs. This business model allows us to leverage our capabilities and capital across a broader landscape of product opportunities and end markets than we would be capable of addressing on our own.

In certain strategic circumstances, we may enter into a joint venture with an ECC collaborator. In that event, we will enter into an ECC with a joint venture entity and may contribute access to our technology, cash or both into the joint venture which we will jointly control with our ECC collaborator. Pursuant to a joint venture agreement, we may be required to contribute additional capital to the joint venture, and we may be able to receive a higher financial return than we would normally receive from an ECC to the extent that we and our ECC collaborator are successful in developing one or more products. We recently executed the first three such joint venture agreements: one with a subsidiary of Sun Pharmaceutical Industries Ltd., an international specialty pharmaceutical company focused on chronic diseases, one with OvaScience, Inc., a life sciences company focused on the discovery, development and commercialization of new treatments for infertility, and one with Intrexon Energy Partners, LLC, a joint venture with a select group of external investors, to optimize and scale-up our gas-to-liquid bioconversion platform for the production of fuels and lubricants. Alternatively, where a collaborator wishes to work with us to develop an early-stage program, we may execute a research collaboration pursuant to which we receive reimbursement for our development costs but the exclusive license rights, and related access fees, are deferred until completion of an initial research program.

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In 2011, we entered into our first collaboration and have added new collaborations since then, either by entering into new agreements or expanding or adding fields to existing ECCs. To date, we have entered into 23 such agreements and expansions with 19 different counterparties, of which 21 remain active. We have 20 active ECCs, including three expansions, and one research collaboration that we anticipate could, if successful, become an ECC. Under the ECCs, we are developing products in the fields of healthcare and food. In healthcare, our ECCs include programs in oncology, anti-infectives, antibiotics and tissue repair. In food, we are working to increase the productivity and nutritional value of salmon and other fish. We are also working to establish ECCs in the areas of energy and environmental sciences.

While the field of synthetic biology is still emerging, the addressable markets that may benefit from this approach are large and well-established. In healthcare, synthetic biology may provide new approaches to treating diseases, as well as improvements to the manufacture of existing products. It is estimated that the global human pharmaceuticals market is over $900 billion and that biological therapeutics represent approximately $150 billion of this market. While genetically modified salmon or trout may be considered new products, the global market for aquaculture was valued at approximately $110 billion in 2011. Genetically modified agricultural plants are already grown on more than 170 million hectares around the world and are worth an estimated $65 billion. In energy, we are working to create novel, highly engineered organisms that use specific feed stocks to create commercially valuable end products, such as isobutanol, which already has a variety of technical and industrial applications and is also being investigated as a gasoline alternative.

What is synthetic biology?

History

Synthetic biology entails the application of engineering principles to biological systems for the purpose of designing and constructing new biological systems or redesigning/modifying existing biological systems. Biological systems are governed by DNA, the building blocks of gene programs, which control cellular processes by coding for the production of proteins and other molecules that have a functional purpose and by regulating the activities of these molecules. This regulation occurs via complex biochemical and cellular reactions working through intricate cell signaling pathways, and control over these molecules modifies the output of biological systems.

In the early 1970s, scientists utilized basic tools and procedures for transferring DNA from one organism to another. Foundational tools included: gene programs contained in vectors; enzymes that could cut DNA at specific sites; and enzymes that could glue two complementary segments of DNA together. Developments between 1980 and the end of the 20th century advanced the field of genetic engineering, including automated DNA sequencing, DNA amplification via PCR and the creation of genetically modified organisms. However, the simplistic cut-and-paste nature of the available tools, and the absence of genomic sequence information, significantly restricted the scope of early synthetic biology efforts.

More recently, synthetic biology has been enabled by the application of information technology and advanced statistical analysis, also known as bioinformatics, to genetic engineering, as well as by improvements in DNA synthesis. Synthetic biology aims to engineer gene-based programs or codes to modify cellular function to achieve a desired biological outcome. For example, applications may include the replacement of a defective protein with a functional protein to treat a broad range of human and animal disease states, or the production of multiple proteins through the regulation of several genes in a cell to produce petrochemicals.

Our approach

The essence of our approach is to apply synthetic biology by using an iterative process that is rapid, automated and highly reproducible, in which we:

Design genes of interest and gene programs utilizing knowledge of cellular pathways and protein function;

Build biological molecules, gene programs and their variants to optimize performance of the biological system;

Test gene programs by inserting them into cellular systems and comparing the result(s) to the intended effects; and

Learn by utilizing information gained in our iterative processes to create better DNA vectors and gene programs using a more informed and efficient process to achieve improved outcomes.

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As a result of our approach, we have developed extensive knowledge about many classes of DNA components and the rules governing their expression and activity. We have also assembled an inventory of these DNA components that we can use to rationally construct unique vectors rapidly and with predictable outcomes. The knowledge embedded in our DNA database allows us to create single gene and highly complex multigenic gene programs (an individual gene program containing multiple genes).

To support our approach, we have developed, on our own and through acquisitions, a unique suite of technologies, and we continue to expand upon their capabilities. These technologies include: our UltraVector gene design and fabrication platform, and its associated library of modular DNA components; Cell Systems Informatics; Laser-Enabled Analysis and Processing, or LEAP; and mAbLogix. These technologies are complementary in nature and share the following key characteristics:

Platform neutral outcome oriented. We can work across different cell types with the objective of achieving the intended biological outcome allowing for product development across a broad spectrum of end markets.

Knowledge driven. We use statistical modeling tools and computational analysis to continually acquire more knowledge about biological systems and their design to continually improve our ability to develop new and improved products and processes for our collaborators.

Rationally designed. Our knowledge of biological systems and components allows us to design, build and select gene programs and predict the probable outcome of these programs.

Capable of complexity. Our technologies enable the design and precise control of complex biological molecules and multigenic gene programs.

Industrial scale. We use engineering principles and automation to enable products based on synthetic biology that are commercially viable.

Our competitive strengths

We believe that our technologies and our approach to synthetic biology ***design-build-test-learn*** give us a competitive advantage over traditional industrial processes as well as current approaches to synthetic biology.

We believe that we have the following competitive strengths:

We have a suite of proprietary and complementary technologies

We have built a suite of proprietary and complementary technologies that provides us with a comprehensive ability to design, create, modify and regulate gene programs and cellular systems. By virtue of the complementary nature of our technologies, we are able to provide our collaborators with a diverse array of capabilities, representing a one stop shop to potentially develop and commercialize new and differentiated products enabled by synthetic biology.

Our design-build-test-learn continuum allows us to design and build improved and more complex gene programs

We have developed a core expertise and technologies to ***design***, ***build*** and ***test*** complex gene programs, as well as technologies to isolate cells that best express the desired biological output. We have also developed an extensive bioinformatic software platform that combines information technology with advanced statistical analysis for DNA design and genetic engineering, enabling us to continually ***learn*** and create optimal conditions for our gene programs. Our approach allows us to build improved and more complex gene programs.

We believe we are a leader in synthetic biology

We believe we are the first company focused exclusively on applying synthetic biology across a broad spectrum of end markets and have been working in the field since 1998. Over the last 16 years, we have accumulated extensive knowledge and experience in the design, modification and regulation of gene programs. We believe all of these factors, coupled with our suite of proprietary and complementary technologies, provide us with a first-mover advantage in synthetic biology.

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We serve large and diverse end markets with high built-in demand

A vast number of products consumed globally are or can be produced using biologically based processes. Natural resources are becoming more scarce as demand exceeds supply creating unmet needs for improvements in development and manufacturing. As a result, the need for complex biologically engineered molecules such as those enabled by our synthetic biology technologies is large and spans multiple industries, including healthcare, food, energy and environmental sciences. Each of these markets faces unique challenges, however all have unmet needs for improvements in product development and manufacturing that can result in savings of both cost and time as compared to traditional means of industrial design and production. Because synthetic biology has the potential to deliver against these unmet needs, we believe that significant demand already exists for improved products enabled by synthetic biology. Additionally, there are markets utilizing traditional industrial processes that have failed to recognize the significant improvement in performance that could be achieved using synthetic biology.

We have a scalable ECC business model that allows us to leverage the broad potential of synthetic biology

We believe our ECC business model is a capital efficient and rapid way for us to participate in a more diversified range of product opportunities and industrial end markets than would otherwise be possible, including healthcare food, energy and environmental sciences. Our collaborators are primarily responsible for providing market and product development expertise, as well as sales, marketing and regulatory capabilities. Generally, our collaborators compensate us through technology access fees, royalties, milestones and reimbursements of certain costs. Our ECC business model allows us to participate in the potential upside from products that are enabled by our technologies across an extensive range of industries, without the need for us to invest considerable resources in bringing individual programs to market. Moreover, we believe that we will increasingly engage in ECCs in new fields at an accelerating pace with well-recognized collaborators.

We have experienced management and employees

Our management team, including our Chief Executive Officer, Randal J. Kirk, and our Chief Operating Officer, Krish Krishnan, consists of executives with a track record of success in building and managing research and development-driven companies, including New River Pharmaceuticals Inc., which was sold in 2007 to Shire plc for $2.6 billion. Our Chief Science Officer, Thomas D. Reed, was responsible for the initial conception and creation of our UltraVector technology platform. As of December 31, 2013 we had 149 employees primarily engaged in research and development, 63 of whom hold advanced degrees in engineering and biology or other sciences, including either a Ph.D., M.D. or D.V.M.

Our suite of proprietary and complementary technologies

We apply the potential of synthetic biology through our suite of proprietary and complementary technologies that combine the principles of precision engineering, statistical modeling, automation and production at an industrial scale. This enables us to engineer precise and complex gene programs across many cell types rapidly and inexpensively. Our technologies include the following:

The UltraVector gene design and fabrication platform

Biological processes have the potential to be designed or redesigned for improved performance for a given application. One of the main challenges is to engineer and introduce the appropriate genetic parts that will yield a product with the desired outcome, such as enhanced biological function, decreased cost of goods or therapeutic effect. This has traditionally been done via a trial and error approach. However, in order to quickly optimize a product it is

often necessary to explore multiple variables simultaneously to efficiently sample a broad experimental space. Doing so requires several components, including a robust DNA construction platform capable of constructing large targeted libraries of DNA designs with the appropriate complexity and scale, a powerful set of statistical tools to guide efficient sampling of a large biological sample space, high-throughput screening capacity matched to library requirements, and a suite of statistical tools to enable recognition and then recombination of improved performers.

Our gene program design platform, which we refer to as UltraVector, is an integrated suite of tools comprising advanced DNA construction technology and components, cellular and protein engineering tools, computational models and statistical methods which facilitate the rapid ***design***, ***build*** and ***testing*** of complex systems. The UltraVector platform allows us to translate complex gene programs into standard components that can be designed, manufactured and tested in a robust, automated format. This technology enables us to engineer at the cellular level from biological sources.

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UltraVector DNA ***design*** is computer-automated and utilizes a proprietary set of defined construction rules to rapidly assemble components that are stored in our DNA library. These rules are derived from UltraVector s object-oriented DNA programming language that enables the hierarchical assembly of DNA parts, which can be a single base pair or thousands of base pairs in length. This allows us to rapidly assemble gene programs from defined and controlled DNA components imparting a desired biological outcome.

Following the design of the DNA vector, the UltraVector-driven ***build*** phase is performed via a proprietary modular assembly platform. Importantly, the underlying algorithm is designed to determine the best approach to efficiently assemble DNA, regardless of complexity or scale. By accommodating multigenic complexity and industrial scale production, we provide our collaborators with multiple options for efficiently optimizing DNA-based functions.

In addition to the growing number of gene components in our UltraVector library, we are continually designing and creating enzymatic and regulatory components that provide more precise control over genome integration and gene regulation. For example, our RheoSwitch Therapeutic System is a three-component transcriptional regulator that provides inducible gene expression. The RheoSwitch Therapeutic System provides the ability to not only express proteins/enzymes of interest, but also the ability to control the level and timing of expression to achieve a biological outcome. Both *in vivo*, which means within a whole living organism, and *ex vivo*, which means in a test tube or petri dish, applications have demonstrated highly controllable expression when the RheoSwitch Therapeutic System is incorporated into UltraVector-designed vectors. Other ongoing programs include our AttSite recombinases, which mediate predictable gene exchange into host cells thereby eliminating many of the difficulties seen with traditional gene insertion. Many traditional gene insertion techniques are difficult to perform because of a low and/or random insertion of the desired genetic code due to the lack of specificity for the recognition site related to the gene insertion enzyme resulting in unpredictable outcomes, such as, but not limited to, poor expression, loss of viability of the host organism or no expression of the desired molecule. AttSite recombinases provide specific attachment sites for insertion of the desired genetic code through highly specific recognition regions and corresponding enzymes permitting many specific gene transfers in a reliable and repeatable fashion.

Cell systems informatics

Cell systems informatics permits faster ***design*** as well as efficient ***testing*** and ***learning*** about new gene targets or product pathways. Our proprietary bioinformatics software and database systems for mapping cellular pathways when combined with our genome-scale modeling and experimental data, including, for example, gene expression profiling and protein engineering, enable us to optimize selection and development of gene programs and cellular systems for our collaborators.

Our computational modeling and simulation platform enables the development of predictive computer models of organisms, from microbes to humans. This platform ***builds*** virtual cells from their basic molecular components, and can simulate the activity of the cell s complete reaction network, serving as an advanced biological knowledge management system with proven predictive capabilities. Reconstructed models can be used as the basis for computer simulations of the biological systems providing a mechanism for high-throughput ***testing***. The capabilities of these systems can be used to predict the outcomes of adaptive evolution, identify undiscovered pathways or reactions in the network based on necessary biomass components, test the effect of adding and/or eliminating genes or reactions to the network, design metabolic networks to support and optimize the production of a specific metabolite or protein and examine conditions consistent with disease and healthy states. Our computational modeling infrastructure allows scientists to rapidly examine a large experimental space *in silico*, which means performed via computer simulation, and then focus on the most promising conditions to be validated experimentally. Furthermore, this platform allows us to bridge experimental and computational research efforts by enabling models to be refined and improved as more data for an organism becomes available, thereby creating a highly effective method of rapid ***learning*** from the results

of our research and development efforts.

Our bioinformatics platform is also central to our protein engineering expertise, which focuses on designing proteins with enhanced stability, solubility and post-translational modifications. We are also working to develop novel enzyme inhibitors and fusion proteins for a variety of applications in human and animal therapeutics. Our protein engineering may utilize one or more of the following aspects of our technologies to obtain novel catalysis activities our proprietary component library, the generation of component variants sequence, evolutionary analysis and

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structure-based sequence alignment, computer-aided drug discovery, *de novo*, or newly synthesized or generated, and comparative protein modeling, molecular dynamics simulation and free energy analysis, antibody design and humanization, antigenicity prediction, protein pharmacokinetics optimization, and/or *in silico* support of enzyme engineering and quantitative structure-function relationships with machine learning algorithms to optimize, facilitate and prioritize protein variant libraries for the advancement of our collaborators.

LEAP cell identification and selection

Our proprietary Laser-Enabled Analysis and Processing technology, or LEAP, is an instrument that merges semiconductor manufacturing technologies for cell processing applications to provide high levels of control and scale to cell purification and stem cell culture management. Capable of operating at the single cell level by utilizing a wide range of image-based assays to characterize cell populations, the LEAP platform can identify and purify cells of interest from large libraries of cells created by our UltraVector and bioinformatics technologies using a laser-based purification process, thereby providing a mechanism of ***testing*** the degree of protein expression in genetically modified cells as well as rapid means to ***learn*** from the genetic building process. Combining the flexibility of image-based selection with the precision of laser purification, LEAP provides a platform to identify and purify high value cells.

Coupled with our UltraVector platform capability to rapidly generate large libraries of vector variants, the LEAP instrument provides a platform to identify and ***test*** the individual UltraVector-transfected cell expressing the protein of interest at optimal levels. The rapid cycle time of the linked processes enables the creation of complex, synthetic biology solutions in an iterative, variation/selection fashion, applying an evolutionary approach, but at a much accelerated time scale, thereby significantly enhancing our ability to ***learn*** about the genetic vectors we create. Applied to cell line generation, a core step in the generation of biomanufacturing cell lines for the production of therapeutic proteins such as antibodies, LEAP generates more highly purified cell lines of higher expressing cells, with greater productivity and in less time than conventional approaches can provide. This leads to cost and time savings both at the research and development stage and for cost of goods of manufactured products.

A unique feature of the LEAP platform is its ability to purify cells while they remain attached to the plate surface where they are grown. Many cell types, including many stem cells, do not maintain cell health and viability when processed with conventional, flow-based purification instrumentation. LEAP allows these cells to be efficiently processed and purified, while maintaining high viability. Applied to stem cells, LEAP enables the scale up and automation of stem cell processing that has historically been largely manual, providing a solution for scale-up.

mAbLogix antibody discovery

Our proprietary mAbLogix antibody discovery platform, or mAbLogix platform, enables production of B-cell libraries for discovery of antibodies. An antibody, also known as an immunoglobulin, is a protein produced in response to and counteracting a specific antigen, or marker, on cells and infectious agents, such as virus and bacteria, that identify them as foreign or non-self. Monoclonal antibodies, or mAbs, have become an important therapeutic that can be used in a number of ways including anti-infectives and oncology indications. The mAbLogix platform permits antigen targeting using fully human monoclonal and polyclonal antibodies.

Our mAbLogix antibody discovery process is comprised of two major activities: the ***build*** of human B-cell libraries expressing a large number of unique antibodies; and the ***testing*** of these libraries based on an analysis of B-cells that positively express antibodies in response to a specifically chosen antigen. Our proprietary discovery process is differentiated by the large size of human B-cell libraries generated and by the rapid, cell-based screening process. Together these capabilities allow us to quickly explore the entire human antibody repertoire and generate fully human

mAbs against diverse antigens.

Utilization of complementary synthetic biology technologies to facilitate the creation of unique biological products

In order to create a highly functional biological system, we recognize the complexity of cellular processes and the necessity to create an optimized gene program in conditions reflective of the natural environment to allow for the creation of the optimal biological product. This requires a rigorous understanding of cell signaling pathways as well as the interactions that influence the expression of protein. This knowledge is captured in our advanced bioinformatics systems, which uses statistical modeling and other analytic frameworks to determine the most efficient pathways for an intended biochemical result. Our bioinformatics platform also plays a critical role in our research and development as this library of information allows us to explore new targets of potential interest to our current or future collaborators.

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In addition to creating the optimized gene program via the most efficient cell signaling pathway and in the relevant cellular environments, we have a growing library of DNA components that facilitate quantitative dose-proportionate control over the amount and timing of the target protein generated, thereby providing another mechanism to closely control activity of the newly constructed gene program.

Our LEAP technology facilitates the automated identification of an individual cell with the highest levels of expression, quality and potency from a population of over 100,000 cells.

Traditional cloning techniques are manual and only allow the generation of a few hundred clones while still being subject to human error. Following LEAP s identification of the cell of interest, we clone the cell, thereby generating millions of cells that produce high concentrations of the biological molecule of interest.

Our mAbLogix platform complements UltraVector with a library of human antibodies that exceeds 500 million. By immortalizing human tonsils which are comprised of lymphatic tissue containing B-cells, our mAbLogix platform creates a B-cell library that can generate antibodies against an almost infinite number of new antigens.

Antigens of interest could include cancer cells, bacteria/infective organisms or proteins that require inhibition, such as oncogenes. Following exposure of the antigen to the immortalized B-cell library, we are able to identify the B-cell that contains the reactive antibody. This antibody can then be isolated via LEAP, sequenced, manipulated, regulated and reconstructed using the UltraVector system.

Our markets

Synthetic biology has applicability across many diverse end markets. Our goal is to be a leader in the application of synthetic biology for products currently utilizing biologically based processes, and a leader in the replacement of conventional processes and products with biologically based substitutes. Through the application of our suite of proprietary and complementary technologies, we believe we can create optimized biological processes and create substitutes for traditional industrial techniques, leading to improved products that are developed and manufactured faster and more cost-effectively.

Health

It is estimated that the global human pharmaceuticals market is approximately $900 billion and that biological therapeutics represent approximately $150 billion of this market. Additionally, the market for animal health therapeutics is currently estimated to be valued at more than $20 billion globally. The aging population in developed markets, and the population growth and increasing middle class in emerging markets, suggest that there will be a steadily increasing utilization of therapeutics. However, the global biopharmaceutical industry continues to face challenges in cost-effectively developing and producing new therapeutics. These demographic trends, as well as food production resource constraints, suggest similar trends in the animal health medicines and vaccines market. In this market, we are focused on:

Therapeutics. Both in human health and animal health, synthetic biology has the potential to enable the development of highly complex biological molecules as well as the ability to regulate complex biological processes, with advantages as compared to traditional therapeutics, both *in vivo* and *ex vivo*. It may be possible, for example, to create highly targeted precision therapeutics with few off-target or adverse effects.

Bioproduction. Synthetic biology allows new biologically based manufacturing techniques that have the potential to significantly lower the cost of goods for highly complex biological molecules, including both existing and novel biopharmaceuticals as well as small molecules.

Diagnostics. By utilizing the sensing and reporting capabilities of cells and specific cellular mechanisms, it may be possible to create highly sensitive diagnostics, to report on a patient s health and provide advance warning of changes in the state of the patient s health.

Food

The Food and Agriculture Organization of the United Nations, or the FAO, predicts that by 2050 the world s population will reach 9.1 billion, 2 billion more than today. To feed a larger, more urban and wealthier population, food production must increase by 70 percent. Annual cereal production will need to rise to about 3 billion tons from 2.1 billion today and annual meat production will need to rise to 470 million tons from today s 270 million tons.

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In this market, we are focused on:

Food animals. Within the United States, beef, pork and chicken sales are in excess of $125 billion per year. Dairy sales provide an additional $28 billion in annual sales of animal byproduct. The global market for meat is approximately 5 times larger than the US market, and the global dairy market is 10 times the size of the US market. Traditional methods of genetic selection in animals are an inefficient and slow process, requiring many generations in order to evolve and select for desired traits. However, selective breeding techniques have resulted in increased size of cattle and hogs, increased milk production in cows and other valuable attributes. By applying our suite of technologies, we believe we can more rapidly develop livestock with commercially valuable attributes such as enhanced nutritional content, resistance to disease and increased growth efficiency.

Agriculture. The FAO estimates that 90 percent of the production increases necessary to feed the future population will come from increases in crop yield and cropping intensity through enhanced traits. Current methods of crop yield and productivity enhancement are no longer keeping pace with demand. Genetically modified agricultural plants are already grown on more than 170 million hectares around the world and are worth an estimated $65 billion. We believe we have the potential to create improved crops by simultaneously incorporating multigenic traits into plants that are designed to enhance the efficiency of water, carbon and nitrogen utilization. We also believe that we can use our gene expression and gene regulation technologies to provide highly complex traits related to enhanced nutritional content, product quality and disease resistance.

Energy and chemicals

A significant challenge of industrial markets, such as the energy and the petrochemical industries, is their large scale, which can require hundreds of millions and even billions of pounds per year of production, and corresponding price sensitivity. For these industries, the production of any product must allow for scalability and end-to-end economic viability. It has long been recognized that biology offers promising alternatives to energy production as well as alternatives to resource intensive synthetic chemistry. For more than a decade, efforts have been made to produce fuels from bacteria, yeast and other organisms with little success. We believe that the many and complex changes to any organism s DNA that must be made to result in significant energy production cannot be effected without the use of an engineered approach to synthetic biology.

Our UltraVector platform, by enabling high through-put gene program design and construction, allows us to identify the relevant pathways within an organism for the production of complex biological molecules, design a variety of alternative solutions to their expression, and rapidly build and evaluate solution sets to select the most promising alternatives. We believe our novel biological solutions can increase yield and productivity, which are critical in the development of alternative energy and the production of chemicals.

In this market, we are focused on:

Energy. The development of engineered microbes for biological conversion of natural gas to alcohols as drop-in fuels can be accomplished with synthetic biology. We have already achieved as proof of concept the conversion by engineered bacteria of methane to isobutanol, which is an alternative alcohol-based fuel.

Chemicals. The chemical industry is highly dependent on crude petroleum as a feedstock. Increased demand for petroleum and continued declines in new reserves, as well as declines in the productivity of existing and proven reserves, has led to increased costs for consumers and reduced margins for many manufacturers. Economically viable alternatives to carbon feed stocks are critical to the future and sustainability of the chemical industry.

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Environment

This sector embodies a diverse set of applications that we believe can be enhanced and expanded with the use of our suite of proprietary and complementary technologies. With the goal of entering into ECCs, we plan to focus our development activities on platform tailoring and selective third party enabling technology collaboration in the following areas:

Biosensors. The biosensor global market is forecasted to exceed $12 billion by 2016 and opportunities exist to capture a portion of this market through design and construction of unique biosensors that leverage our suite of proprietary and complementary technologies.

Bioremediation. The global market for microbial and associated bioremediation products is forecasted to reach over $1 billion by 2016. Industrial sources of soil and groundwater contamination present major environmental, policy and health issues because of the adverse effects of contaminants on humans and ecosystems. Bioremediation, which we believe our technologies have the potential to enable, can provide an environmentally friendly, socially acceptable, effective and economically viable solution.

Specialty Processes. We believe our suite of proprietary and complementary technologies has the potential to be used to introduce effective solutions for applications such as activated microbial filtration, waterborne pathogen elimination, and de-nitrification of waste and surface water.

Consumer

In its Consumer Wealth and Spending Study, global consulting firm A.T. Kearney determined that growth in consumer spending will increase by $12 trillion in the next 10 years. While spending on food will account for approximately 10 percent of this growth, spending on durable goods, personal care items, transportation, healthcare, hotels, and leisure activities will account for a larger percentage of overall growth. The United States is expected to account for 33 percent, or $4 trillion, of this spending increase. Despite its size, synthetic biology has had a rather limited impact in the consumer market relative to industries like healthcare and agriculture, Intrexon believes that through our synthetic biology capabilities to predictably scale multigenic and complex metabolic engineering, we have the potential to offer novel biologically based solutions for consumer markets.

In the consumer sector, we are initially focused on:

Personal Care Products. In 2011, the U.S. Bureau of Labor Statistics reported that the average American consumer unit spent $634 on personal care products and services, an increase of 7.3 percent from the previous year. These expenditures continued to increase in 2012 and 2013 as consumer confidence in the U.S. improved following the economic recession. While consumers have increased their spending, they have also narrowed their focus, from personal care products useful only for aesthetics, to products that possess a more holistic approach to beauty maximizing overall good health as a foundation to healthy looks. By applying our suite of technologies, we believe we can more rapidly develop personal care products that appeal to both requirements of the new approach to beauty an approach that harnesses the power of synthetic biology to effectively create safer personal care products that maximize health and beauty.

Decorative Arts. We are exploring the applications of synthetic biology in the decorative arts by utilizing next-generation supplies, including bioluminescent microorganisms, to develop groundbreaking art and household goods. We hope to advance these living arts creations by applying our technical expertise and proprietary technologies to expand the artist palette with biological materials.

Our business model

We believe that because synthetic biology has applicability across many diverse end markets, we cannot take full advantage of synthetic biology with internal development programs alone. To address this, we have devised our business model to allow us to focus on our core expertise in synthetic biology while bringing many different commercial products to market via collaborations in a broad range of industries or end markets, thus minimizing and leveraging the use of our own capital.

Our business model is built around the formation of ECCs. An ECC is an agreement with a collaborator to develop products based on our technologies in a specifically defined field. We seek collaborators that have expertise within a specific industry segment and the commitment to provide resources for the development and commercialization of

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products within that industry segment. In our ECCs, we provide expertise in the engineering of gene programs and cellular systems, and our collaborators are responsible for providing market and product development expertise, as well as regulatory, sales and marketing capabilities.

This business model allows us to leverage our capabilities and capital across numerous product development programs and a broader landscape of end markets than we would be capable of addressing on our own. Our ECC business model also allows us to participate in the potential upside from products that are enabled by our technologies across an extensive range of industries, without the need for us to invest considerable resources in bringing individual products to market. Additionally, the flexibility of the business model allows us to collaborate with a range of counterparts, from small innovative companies to global multinational conglomerates.

In certain strategic circumstances, we may enter into a joint venture with an ECC collaborator. In that event, we will enter into an ECC with a joint venture entity and may contribute access to our technology, cash or both into the joint venture which we will jointly control with our ECC collaborator. Pursuant to a joint venture agreement, we may be required to contribute additional capital to the joint venture, and we may be able to receive a higher financial return than we would normally receive from an ECC to the extent that we and our ECC collaborator are successful in developing one or more products. We presently are party to three such joint venture agreements: one with a subsidiary of Sun Pharmaceutical Industries Ltd., an international specialty pharmaceutical company focused on chronic diseases, one with OvaScience, Inc., a life sciences company focused on the discovery, development and commercialization of new treatments for infertility, and one with Intrexon Energy Partners, LLC, a joint venture with a select group of external investors, to optimize and scale-up our gas-to-liquid bioconversion platform for the production of fuels and lubricants. Alternatively, where a collaborator wishes to work with us to develop an early-stage program, we may execute a research collaboration pursuant to which we receive reimbursement for our development costs but the exclusive license rights, and related access fees, are deferred until completion of an initial research program.

In 2011, we entered into our first collaboration and have steadily increased the number over the past three years, entering into new agreements and expanding existing ECCs. To date, we have entered into 23 such agreements and expansions with 19 different counterparties, of which 21 remain active. We have 20 active ECCs, including three expansions, and one research collaboration that we anticipate could, if successful, become an ECC. Under the ECCs, we are developing products in the fields of healthcare and food. In healthcare, our ECCs include programs in oncology, anti-infectives, antibiotics and tissue repair. In food, we are working to increase the productivity and nutritional value of salmon and other fish. We are also working to establish ECCs in the areas of energy and environmental sciences.

Our ECCs

Our ECCs typically share a number of key features. Each ECC is an agreement with a collaborator to develop products based on our technologies in one or more specifically defined fields. These fields may be narrowly defined (representing, for example, a specific therapeutic approach for a single indication) or may be broad (representing, for example, an entire class of related products). In each case, we and the collaborator precisely define the field based on factors such as the expertise of the collaborator, the relative markets for the prospective products, the collaborator s resources available to commit to the ECC and our expectations as to other prospective ECCs in related areas. Regardless of the size of the field, under each ECC we grant the collaborator exclusive rights to our services and our suite of technologies to develop and commercialize products within the field. So long as our collaboration continues, the parties agree that each will not, alone or with another party, develop and commercialize products within the field of the ECC. The licensed technologies include those that we control at the time of the execution of the ECC as well as any technologies that we develop or acquire throughout the duration of the ECC.

We realize three general categories of revenue under our ECCs. First, for providing access to our technologies, we generally receive technology access fees either in cash or as an equity interest in the collaborator. These payments may be upfront or upon the achievement of developmental milestones or both. Second, through the duration of the ECC, we receive reimbursements from our collaborator to cover a portion of our time and material costs expended performing our obligations under the ECC. Reimbursable expenses may be for the time of our own personnel, materials we produce at our facilities or pass-through costs for the time and materials of third-party contractors. Third, we share in the potential future revenues, through royalties or other similar arrangements, derived from the commercialization of the product(s) that are enabled by our technologies.

Generally, each of our ECCs is designed to continue in perpetuity unless terminated. Given the relatively long development cycle for many of the products that could be enabled by our technologies, as well as our belief that we can enable the continual improvement of product offerings, it is our expectation that our ECCs will continue for

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many years and result in the development of multiple products. Each of our collaborators, however, retains the right to terminate the ECC for any reason by providing us written notice a certain period of time prior to such termination, generally ninety days. The ECC is also terminable by either party upon the other party s breach of material provisions of the ECC. The failure of our collaborator to exercise diligent efforts to develop products within the field of the ECC constitutes such a breach.

In the event one of our ECCs terminates we are entitled to immediately pursue another collaboration within the field of the terminated ECC. Moreover, technologies and product candidates in a relatively early stage of development revert to us, along with data, materials and the rights to applicable regulatory filings related to the reverted products, enabling us to develop those products ourselves or incorporate them into a future collaboration. Product candidates that are at a more advanced stage of development, such as those already generating revenue or being considered for approval by the applicable regulatory body, for example, at the time of the ECC s termination are retained by the former collaborator. The collaborator has the right to develop and commercialize such retained products although we are entitled to the royalties or other compensation to which we would be entitled as if the ECC were still in effect. Upon termination, we retain any technology access fees or other payments to which we are entitled through the date of termination.

In our ECCs, we retain rights to our existing intellectual property and generally any intellectual property developed using, or otherwise incorporating, our technologies. In addition, we are generally responsible for controlling the prosecution and enforcement of this intellectual property with the exception of the enforcement of patents directed solely and specifically to products developed within the field of each ECC.

Each of our ECCs requires the collaborator to indemnify us for all liability related to products produced pursuant to the ECC and to obtain insurance coverage related to product liability.

ZIOPHARM Oncology

Effective January 6, 2011, we entered into an ECC with ZIOPHARM Oncology, Inc. (NASDAQ: ZIOP), or ZIOPHARM, a publicly traded small molecule late-stage oncology drug development company, to develop and commercialize therapeutics in the field of cancer treatment in humans. The lead product candidates of this ECC include Ad-IL-12 for the treatment of melanoma, breast cancer and glioblastoma, as well as a number of preclinical cellular-based gene modified oncology programs. DC-IL-12 has completed a Phase I human clinical trial to establish the drug s safety. Ad-IL-12 is currently in multiple Phase II human clinical studies. Both of these programs are focused on the regulatable expression of Interleukin-12 (IL-12).

Both of the IL-12 programs of this ECC deliver genetic vectors coding for the IL-12 gene directly to tumors. Once the vector is delivered intratumorally, it is controlled by Intrexon s proprietary biologic switch called the RheoSwitch Therapeutic System, or RTS. RTS maintains the gene program in an inactive state within a cell, until such a time as the patient takes a pill containing an orally available small molecule ligand. In the presence of the ligand, which is otherwise biologically inert, RTS is activated allowing expression of IL-12 at a specified therapeutic level and for a predetermined duration. RTS thereby regulates IL-12 expression to achieve a targeted clinically active level of IL-12 at the tumor.

This ECC is also investigating a number of cellular-based oncology therapies that are supported by the recent acquisition of Medistem, Inc., or Medistem. Each is based on our multigenic expression platform, where two or more therapeutic proteins are expressed from a single DNA vector under RTS control. Under the Ad-IL-12 programs, we are responsible for manufacturing the drug product and small molecule activator ligand. ZIOPHARM reimburses us for these manufacturing costs.

Pursuant to the ECC, ZIOPHARM received a license to our technologies within the field of cancer treatment in humans as defined more specifically in the ECC. We received 3,636,926 shares of ZIOPHARM s common stock valued at $17.5 million as an upfront technology access fee. On October 24, 2012 upon the dosing of the first patient of a Phase II clinical trial, we received 3,636,926 shares of ZIOPHARM s common stock valued at $18.3 million as milestone consideration, which is the sole milestone under this ECC. Subject to certain expense allocations, ZIOPHARM will pay us 50 percent of the quarterly net profits derived from the sale of products developed under the ECC.

Upon execution of this ECC, we purchased 2,426,235 shares of ZIOPHARM common stock with a value of $11.6 million, and we agreed to purchase up to $50.0 million of ZIOPHARM common stock in conjunction with securities offerings that may be conducted by ZIOPHARM in the future, subject to certain conditions and limitations. To date we have purchased approximately $31.0 million of ZIOPHARM common stock in such securities offerings, and our remaining obligation on this purchase commitment is approximately $19.0 million.

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Fibrocell

Effective October 5, 2012, we entered into an ECC with Fibrocell Science, Inc. (NYSE MKT: FCSC), or Fibrocell, a publicly traded biotechnology company commercializing fibroblasts for therapeutic applications. The lead therapeutic program of this ECC is currently in the research phase for the treatment of recessive dystrophic epidermolysis bullosa, or RDEB, a rare, genetically based blistering disorder. RDEB is an autosomal recessive disorder characterized by the loss of collagen type VII, an important protein component of the anchoring fibers that connect the dermis to the epidermis. Our proposed treatment for this disease will provide collagen VII produced by autologous, gene-modified fibroblasts.

We are also working with Fibrocell to improve the process efficiency and cost of goods related to the manufacture of LAVIV™, Fibrocell s autologous cellular product indicated for improvement of the appearance of moderate to severe nasolabial fold wrinkles in adults.

Pursuant to the ECC, Fibrocell received a license to our technologies to develop and commercialize genetically modified and non-genetically modified autologous fibroblasts and autologous dermal cells in the United States for both aesthetic and therapeutic indications. We received a technology access fee of 1,317,520 shares of Fibrocell s common stock valued at $7.6 million as upfront consideration. The number of shares received reflects a 1-for-25 reverse stock split of Fibrocell s common stock effective April 30, 2013. On a quarterly basis, Fibrocell will pay us royalties of 7 percent of net sales up to $25.0 million and 14 percent of net sales above $25.0 million on products developed from the ECC. If Fibrocell uses our technologies to improve the production of LAVIV or new Fibrocell products not developed under the ECC, Fibrocell will pay us a quarterly royalty equal to 33 percent of the cost of goods sold savings generated by the improvement.

Effective June 28, 2013, we entered into an amendment to our ECC with Fibrocell. The amendment expands the ECC to include potential treatments based on engineered autologous fibroblast cells for the localized treatment of autoimmune and inflammatory disorders including morphea (localized scleroderma), cutaneous eosinophilias and moderate to severe psoriasis. Under the terms of the amendment, we received shares of Fibrocell s common stock valued at $7.5 million as a supplemental technology access fee.

On October 1, 2013, we acquired an aggregate amount of $10.0 million of Fibrocell common stock at a price of $4.10 per share.

Effective January 10, 2014, we entered into a second amendment to our ECC with Fibrocell. The amendment expands the ECC to include potential treatments for Ehlers-Danlos syndrome hypermobility type (EDS-HT), a rare genetic disorder resulting in weakened connective tissue. Under the terms of the amendment, we received shares of Fibrocell s common stock valued at approximately $5.2 million as a supplemental technology access fee.

Oragenics

Effective June 5, 2012, we entered into an ECC with Oragenics, Inc. (NYSE MKT: OGEN), or Oragenics, a publicly traded company in the field of oral care probiotics and a developer of therapeutic products including novel antibiotics. The lead therapeutic program of this ECC is currently in the research phase. The objective of this ECC is to develop and commercialize lantibiotics, a novel class of broad-spectrum antibiotics, for the treatment of infectious diseases, including methicillin-resistant *Staphylococcus aureus*, vancomycin-resistant *Enterococcus faecalis*, *Clostridium difficile*, Mycobacterium tuberculosis and anthrax, in humans and companion animals.

Pursuant to the ECC, Oragenics received a license to our technologies within the field of lantibiotics for the treatment of infectious diseases in humans and companion animals. We received a technology access fee of 4,392,425 shares of Oragenics common stock valued at $6.6 million as upfront consideration. Upon the achievement of certain milestones, we are entitled to receive additional consideration equal, in aggregate, to 10 percent of Oragenics outstanding shares, excluding shares issuable upon the conversion of certain derivative securities. At Oragenics option, such consideration can be paid in stock or cash, in which case such payment shall be based on the fair market value of the shares otherwise issuable. Oragenics will pay us 25 percent of the quarterly profits derived from the sale of products developed from the ECC on a product-by-product basis.

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On September 30, 2013, we entered into a second ECC with Oragenics through which Oragenics may develop and commercialize probiotics, specifically the direct administration to humans of genetically modified probiotics for the treatment of diseases of the oral cavity, throat, sinus and esophagus, including, but not limited to, aphthous stomatitis and Behcet s disease. Pursuant to the ECC, Oragenics received an exclusive worldwide license to our suite of technologies to develop and commercialize genetically modified probiotics for the direct administration to humans for the treatment of diseases of the oral cavity, throat, sinus and esophagus. Oragenics will pay us 10% of the net sales derived from the sale of products developed from the ECC. We may receive up to $17.0 million in aggregate milestone payments upon the achievement of certain events. Contemporaneously with the entry into the ECC, we also entered into a Stock Purchase and Issuance Agreement and a First Amendment to the Stock Purchase and Issuance Agreement, together, the SPIA, with Oragenics. Pursuant to the SPIA, (i) Oragenics issued us 1,348,000 shares of Oragenics common stock valued at $3.5 million in consideration for the execution and delivery of the ECC and (ii) Oragenics sold us 1,300,000 shares of Oragenics common stock at a price per share of $3.00 for gross proceeds of $3.9 million. Oragenics also issued a Convertible Promissory Note to us in the principal amount of $1,956,000 which is payable, at Oragenics option, in cash or shares of Oragenics common stock and which matures on December 31, 2013. The Convertible Promissory Note was converted to 698,241 shares of Oragenics common stock on December 18, 2013. The 2,046,241 shares of Oragenics common stock constitute the payment of the $5.5 million technology access fee paid to us under the ECC. On November 20, 2013, we acquired an aggregate amount of $2.8 million of Oragenics common stock at a price of $2.50 per share.

Synthetic Biologics

Effective August 6, 2012, we entered into an ECC with Synthetic Biologics, Inc. (NYSE MKT: SYN), or Synthetic Biologics. The lead therapeutic program of this ECC is currently in preclinical development.

Pursuant to the ECC, Synthetic Biologics received a license to our technologies to develop and commercialize a series of monoclonal antibody therapies for the treatment of certain infectious diseases defined in the ECC. Upon shareholder approval on October 5, 2012, we received 3,552,210 shares of Synthetic Biologics common stock valued at $7.8 million as an upfront technology access fee. We are entitled to additional consideration payable either in cash or common stock at the option of Synthetic Biologics upon the achievement of certain regulatory milestones for each product candidate developed under the ECC. Upon the filing by Synthetic Biologics of an investigational new drug application with the U.S. Food and Drug Administration, or FDA, we will receive cash or common stock at the option of Synthetic Biologics valued at $2.0 million. Upon the first to occur of either the first commercial sale of a product developed under the ECC or the granting of marketing approval of a product developed under the ECC, we will receive cash or common stock at the option of Synthetic Biologics valued at $3.0 million. The ECC initially targets three infectious diseases, and Synthetic Biologics may elect to target up to five more infectious diseases by paying us a field expansion fee of $2.0 million in either cash or common stock for each additional infectious disease selected. The lead therapeutic programs of this ECC are currently in preclinical development. They include the development of monoclonal antibody therapies for the treatment of pertussis and Acinetobacter infections. The pertussis program is focused on the development of a monoclonal antibody to treat pertussis infections, more commonly known as whooping cough, by targeting and neutralizing the pertussis toxin, in order to reduce the mortality rate in infants and potentially shorten the duration of chronic cough in afflicted adults. According to the World Health Organization, each year, B. pertussis infection causes an estimated 300,000 deaths worldwide, primarily among young, unvaccinated infants. The ECC is also working to develop a mAb therapy for the treatment of Acinetobacter infections. Many strains of Acinetobacter are multidrug-resistant and pose an increasing global threat to hospitalized patients, wounded military personnel and those affected by natural disasters. Based on its public filings, Synthetic Biologics believes that a treatment for Acinetobacter infections represents a billion dollar market opportunity.

On a quarterly basis, Synthetic Biologics will pay us tiered royalties as a percentage in the upper-single to lower-double digits of net sales of products developed under the ECC.

On December 17, 2013, we acquired an aggregate amount of $2.0 million of Synthetic Biologics common stock at a price per share of $1.00 per share.

Previously, in November 2011, we entered into an ECC with Synthetic Biologics to develop and commercialize a gene therapeutic product using RTS for the treatment of pulmonary arterial hypertension. In April 2013, we terminated the ECC for lack of support by Synthetic Biologics.

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AquaBounty

AquaBounty Technologies, Inc. (AIM: ABTX), or AquaBounty, is a biotechnology company using biological sciences and molecular technology to enable the large-scale, efficient, and environmentally sustainable production of high quality finfish. Its lead product, AquAdvantage Salmon®, or AAS, is a new strain of salmon capable of reaching marketable size in around half the time of conventional salmon. By placing the salmon growth hormone under the control of an alternative promoter (gene switch) from the ocean pout, an edible arctic fish, AquaBounty is able to provide a consistent level of salmon growth hormone which speeds growth throughout the early stages of the salmon s development. Although these fish do not reach a larger final size than conventional salmon, by accelerating growth in the early stages, AAS can reach a marketable size in around half the time. In the case of salmon, this can reduce farming time from approximately 28 to 36 months to approximately 18 months, depending on the desired marketable weight of the fish. The AAS was developed by AquaBounty without using any of our technologies.

On November 16, 2012, we acquired 47.56 percent of AquaBounty s common stock from two shareholders. On March 15, 2013, we acquired additional shares from AquaBounty in a private placement increasing our ownership to 53.82 percent. Also, on February 14, 2013, three individuals designated by us, including one of our employees, were appointed to AquaBounty s board of directors and we have the right to appoint a fourth director at AquaBounty s next shareholder meeting. On March 20, 2014, we acquired additional shares from AquaBounty in a private placement increasing our ownership to 59.85 percent.

Effective February 14, 2013, we entered into an ECC with AquaBounty. The objective of this ECC, which is in the research phase, is to develop and commercialize genetically modified finfish for human consumption that are more nutritious, have increased muscle mass, and grow quickly to maturity. Pursuant to the ECC, we will receive 16.7 percent of quarterly gross profits for each product.

Genopaver

Effective March 29, 2013, we entered into an ECC with Genopaver, LLC, or Genopaver, a limited liability company formed by affiliates of Third Security, LLC. Genopaver was formed for the express purpose of entering into the ECC and developing and commercializing products in the field of the fermentative production of alkaloids through genetically modified cell-lines and substrate feeds for use as active pharmaceutical ingredients or as commercially sold intermediates in the manufacture of active pharmaceutical ingredients. The first program under this ECC involves the microbial production of an active pharmaceutical ingredient used primarily in the manufacture of several commonly used pain killers. The purpose of our ECC with Genopaver is to develop a source of this valuable component at a commercially competitive cost. The initial program under this ECC is in the research phase.

Pursuant to the ECC, we received a $3.0 million cash payment as an upfront technology access fee. We are entitled to a royalty as a percentage in the lower-double digits on the gross profits of product sales from a product developed under the ECC.

Sun Pharmaceutical Industries

On September 30, 2013, we entered into an ECC with S & I Ophthalmic, LLC, or Sun JV, a joint venture between us and Caraco Pharmaceutical Laboratories, Ltd., or Sun Pharmaceutical Subsidiary, an indirect subsidiary of Sun Pharmaceutical Industries Ltd., an international specialty pharmaceutical company focused on chronic diseases.

Pursuant to the ECC, Sun JV received an exclusive worldwide license to our suite of technologies to research, develop and commercialize in humans the treatment of diseases specifically relating to, and manifesting locally in, the eye as

well as certain systemic diseases having symptoms or complications that manifest in the eye via administration of genetically modified cells, DNA or viral vectors that, when delivered to humans, will cause *in-vivo* expression of one or more therapeutic proteins and/or bioactive RNA species. Subject to certain expense allocations, JV will pay us royalties with percentages ranging from mid-single digits and above of the net sales derived from the sale of products developed under the ECC.

Contemporaneously with the entry into the ECC, we also entered into a Limited Liability Company Agreement, or Sun LLC Agreement, with Sun Pharmaceutical Subsidiary and Sun JV which governs the affairs of Sun JV and the conduct of Sun JV s business. Pursuant to the Sun LLC Agreement, we, as well as Sun Pharmaceutical Subsidiary, made an initial capital contribution in exchange for a 50% membership interest in Sun JV. In cases in which the board of managers of Sun JV, or the Sun JV Board, determines that additional capital contributions are necessary in

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order for Sun JV to comply with its obligations under the ECC, we, as well as Sun Pharmaceutical Subsidiary, have committed to making additional capital contributions subject to certain limitations. Each has the right, but not the obligation, to make additional capital contributions above these limits when and if solicited by the Sun JV Board.

Beginning on the seventh anniversary of the effective date of the Sun LLC Agreement, and upon every second anniversary thereafter, we, as well as Sun Pharmaceutical Subsidiary, may make a cash offer to purchase all of the other s interest in Sun JV. Upon receipt of such an offer, the other party must either agree to tender its interests at the offered price or submit a counteroffer at a price higher than the original offer. Such offer and counteroffer may continue until one party agrees to the other s price.

Sun JV shall be governed by the Sun JV Board which shall have four members. We, as well as Sun Pharmaceutical Subsidiary, have the initial right to appoint two members to the Sun JV Board. For so long as Sun Pharmaceutical Subsidiary and/or any of its affiliates is a member of Sun JV and holds a percentage interest in Sun JV that is at least equal to the percentage interest in Sun JV held by us and/or our affiliates, Sun Pharmaceutical Subsidiary will have the sole authority to select and appoint on behalf of Sun JV each of the representatives of Sun JV on the ECC committees, and one such appointee will be an Empowered Representative of Sun JV under the terms of the ECC with final authority to resolve certain ECC committee disputes.

BioPop

On October 1, 2013, we entered into an ECC with Biological & Popular Culture, Inc., or BioPop, pursuant to which BioPop received a worldwide, exclusive license to our technologies to develop and commercialize artwork, children s toys and novelty goods that are derived from living organisms or are enabled by synthetic biology. We are entitled to royalties in the mid-single digits as a percentage of the net product sales of a product developed under the ECC.

Contemporaneously with the entry into the ECC, we entered into a Common Stock Purchase Agreement with BioPop pursuant to which we acquired 4,163,265 shares of BioPop common stock for an aggregate purchase price of $1.3 million, which represents 51% of BioPop s outstanding common stock. Pursuant to the Common Stock Purchase Agreement, the members of Yonder LLC, or Yonder, a California limited liability company, contributed all assets and properties of Yonder to BioPop, and BioPop assumed all Yonder obligations and liabilities.

OvaScience

On December 18, 2013, we entered into an ECC with OvaScience, Inc., a life sciences company focused on the discovery, development and commercialization of new treatments for infertility.

The ECC was formed to use our synthetic biology technology platform to develop methodologies to accelerate the development of OvaScience s OvaTure™ technology platform, a next-generation approach to in vitro fertilization. As partial payment for access to our technology, OvaScience issued 273,224 shares of its common stock to us on December 18, 2013. OvaScience will pay $2,500,000 of the technology access fee in cash on December 18, 2014.

Additionally, OvaScience and we formed a joint venture entity named OvaXon, LLC, a Delaware limited liability company (OvaXon). OvaScience and we entered into a limited liability company agreement for OvaXon (the LLC Agreement) which establishes our rights and those of OvaScience with respect to OvaXon and provides for the management of OvaXon and its business. In connection with the execution of the LLC Agreement, OvaXon entered into a worldwide Exclusive Channel Collaboration Agreement with us to create new applications for improving human and animal health. OvaScience also licensed certain technology relating to egg precursor cells to OvaXon pursuant to a separate license agreement.

Intrexon Energy Partners

On March 26, 2014, we entered into an ECC with Intrexon Energy Partners, a joint venture between Intrexon and certain investors, or the Investors.

The ECC was formed to use our synthetic biology technology platform to develop technology used in the microbial conversion of natural gas to the following classes of liquid fuels and lubricants, as well as certain components of such fuels and lubricants: motor gasoline; aviation turbine fuel for both commercial and military specifications; on and off-road diesel fuel; and Group I, Group II and Group III lubricant base oils. As partial payment for access to our technology, Intrexon Energy Partners paid us $25.0 million as an upfront technology access fee.

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Contemporaneously with the entry into the ECC, Intrexon, Intrexon Energy Partners and the Investors also entered into a Limited Liability Company Agreement, or the IEP LLC Agreement, which governs the affairs of Intrexon Energy Partners and the conduct of Intrexon Energy Partners business. Pursuant to the IEP LLC Agreement, we made an initial capital contribution of $25.0 million worth of technology in exchange for a 50% membership interest in Intrexon Energy Partners, and the Investors made initial capital contributions, totaling $25.0 million in the aggregate, in exchange for pro rata membership interests in Intrexon Energy Partners. In addition, we have committed to make additional capital contributions of up to $25.0 million, and the Investors, as a group and pro rata in accordance with their respective membership interests in Intrexon Energy Partners, have committed to make additional capital contributions of up to $25.0 million, at the request of Intrexon Energy Partners Board of Managers, or the IEP Board, and subject to certain limitations. We and the Investors have the right, but not the obligation, to make additional capital contributions above these limits when and if solicited by the IEP Board.

Intrexon Energy Partners is governed by the IEP Board which has five members. Two members of the IEP Board will be designated by Intrexon and three members of the IEP Board will be designated by a majority of the Investors. The Investors and Intrexon also have customary rights of first refusal, the Investors have customary tag-along rights and Intrexon has customary drag-along rights. Intrexon has a call right to purchase all of the interests in Intrexon Energy Partners owned by the Investors in the event of a change of control with respect to Intrexon.

Contemporaneously with the formation of the joint venture and entry into the ECC, we entered into securities purchase agreements with the Investors for the private placement of 972,004 shares of our common stock at a price per share of $25.72 for gross proceeds of $25.0 million.

Mergers and acquisitions

We completed several acquisitions in 2011 in order to enhance our capabilities and service offerings. On January 26, 2011, we acquired Agarigen, Inc., or Agarigen, a North Carolina-based company that allowed us to expand our capabilities in the agricultural sector. On August 31, 2011, we acquired the LEAP platform technology from Cyntellect, Inc., or Cyntellect. On October 5, 2011, we acquired the cell systems informatics technology from GT Life Sciences, Inc., or GT Life. On October 21, 2011, we acquired the mAbLogix antibody platform from Immunologix, Inc. or Immunologix. See the footnotes to our audited consolidated financial statements found in Item 8 for additional information with respect to the material business combinations.

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On November 16, 2012, we acquired 48,631,444 shares of common stock of AquaBounty Technologies, Inc., or AquaBounty, representing 47.56 percent of the then outstanding shares of AquaBounty, through a definitive purchase agreement with an existing AquaBounty shareholder and its affiliate. We originally accounted for our investment in AquaBounty using the equity method. On March 15, 2013, we acquired 18,714,814 additional shares of AquaBounty common stock increasing our aggregate ownership in AquaBounty to 53.82 percent, resulting in us gaining control over AquaBounty. AquaBounty was consolidated on our results of operations and financial position beginning on March 15, 2013. On March 20, 2014, we acquired 19,040,366 additional shares of AquaBounty common stock increasing our aggregate ownership in AquaBounty to 59.85 percent.

On October 1, 2013, we acquired 4,163,265 shares of common stock of Biological & Popular Culture, Inc., or BioPop, representing 51.00 percent of the outstanding shares of BioPop, resulting in us gaining control over BioPop. BioPop was consolidated on our results of operations and financial position beginning on October 1, 2013.

On March 6, 2014, we acquired California-based Medistem, a pioneer in the development of Endometrial Regenerative Cells, or ERCs, universal donor adult stem cells that stimulate new blood vessel formation and are capable of generating different tissues included heart, brain, pancreas, liver, bone, cartilage and lung. We intend to employ our synthetic biology platforms to engineer a diverse array of cell-based therapeutic candidates using Medistem s multipotent ERCs. We will consolidate Medistem s results of operations and financial position effective March 6, 2014.

Competition

We believe that we are a leader in synthetic biology. We do not believe that we have any direct competitors who provide similar technologies which fully enable the commercialization of products developed using synthetic biology across a broad spectrum of biologically based industries. As a result, we believe our competition is more indirect and general in nature, and falls into three broad categories:

Synthetic biology service providers. There are companies that have competing technologies for individual pieces of our suite of complementary technologies. For example, there are companies that can synthesize DNA, and there are companies that can develop monoclonal antibodies. One portion of our proprietary technology related to DNA synthesis and assembly includes the ability to *de novo* synthesize DNA. We believe the following companies engage in the manufacture of DNA componentry: DNA 2.0, Inc., Blue Heron Biotech, LLC and Life Technologies Corporation, now part of Thermo Fisher Scientific Inc. Another portion of our proprietary technology includes development of fully human monoclonal antibodies. Our technology utilizes advanced methods of stimulating antibody production in naïve human B-cells *in vitro* and specifically selecting those cells which produce antibodies that can bind a desired target, such as human toxins, tumor cells or microbial pathogens. We believe the following companies engage in the manufacture of human or human-like monoclonal antibodies: AbD SeroTec (a Bio-Rad Laboratories, Inc. company), Alexion Pharmaceuticals, Inc., XOMA Corporation, Genmab US, Inc., MorphoSys AG, NovImmune SA, Société Des Systèmes Biologiques, or BIOTEM, Adimab, LLC, ProMab Biotechnologies, Inc., Abpro, Inc., AIIM Therapeutics and Open Monoclonal Technology, Inc.

Industrial companies who may develop their own approach to synthetic biology. Rather than becoming a collaborator with us, potential collaborators may decide to invest time and capital to internally develop their own synthetic biology capabilities. For example, large biopharmaceutical companies, energy companies, and ag-bio

companies may pursue a proprietary synthetic biology strategy.

Industrial companies who may develop competing products using other technologies. Products enabled by our synthetic biology will face competition in the market, including from products which have been developed using other industrial technologies. For example, large biopharmaceutical companies pursue other technologies for drug development, and large ag-bio companies pursue other technologies for the development of genetically modified crops.

Intellectual property

As we advance technologies across multiple platforms and synthetic biology areas, correspondingly, we apply a multilayered approach for protecting intellectual property relating to the inventions we have developed internally as well as those we have acquired from third parties, such as by assignment or by in-license. We seek patent protection in the United States and in other countries for our inventions and discoveries, and we develop and protect our key know-how and trade secrets relating to our platform technologies as well as to the products we are developing with our collaborators.

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We seek patent protection for our platform technologies, including but not limited to our (i) switch technology, (ii) activator ligands for our switch technology and (iii) cell identification and selection platform. In addition, we seek patents covering specific collaborator s products. With respect to a particular collaborator s product, we may seek patent protection on some or all of the following: the compound itself, its commercial composition, its production and its methods of use.

Through the use of our various platform technologies we seek to design and build proprietary compounds, vectors, methods and processes across a variety of end markets. In particular, we focus our intellectual property on synthetic biology technologies that provide platforms for the design and creation of cells, vectors and components for our collaborators. In addition, we may pursue intermediate and product-specific patents associated with our collaborators lead programs.

Our success depends, in part, upon our ability to obtain patents and maintain adequate protection for our intellectual property relating to our technologies and products and potential products. We have adopted a strategy of seeking patent protection in the United States and in other jurisdictions globally we deem appropriate under the circumstances, with respect to certain of the technologies used in or relating to our products and processes. As of December 31, 2013, we owned at least 55 issued U.S. patents and 55 pending U.S. patent applications relating to certain aspects of our technologies, and we have pursued counterpart patents and patent applications in other jurisdictions around the world, as we have deemed appropriate. We continue to actively develop our portfolio through the filing of new patent applications, provisional and continuations relating to our technologies, methods and products as we and our collaborators deem appropriate.

We have strategic positioning with respect to our key technologies including patent portfolios directed to: our switch technology covering aspects of our gene switches, such as our RheoSwitch Therapeutic System, and gene modulation systems, vectors, cells and organisms containing these switches, and their use; our activator ligand technology covering aspects of our activator ligands and their use; and our cell identification and selection technology covering aspects of our cell identification and selection platform, including our cell purification, isolation, characterization and manipulation technologies. In these portfolios, the issued U.S. patents and applications, if granted, are scheduled to expire from 2017 to 2034. We have also filed counterpart patents and patent applications in other countries, when appropriate, including Australia, Argentina, Brazil, Canada, China, Europe, Hong Kong, India, Indonesia, Israel, Japan, Korea, Mexico, New Zealand, Philippines, Russia, Singapore, South Africa and Taiwan. In the future we may file in these or additional jurisdictions as deemed appropriate for the protection of our technologies. In these jurisdictions, the issued patents and patent applications, if granted, are scheduled to expire from 2018 to 2032.

Additionally, we complement our intellectual property portfolio with exclusive and non-exclusive patent licenses and options for licenses to third party technologies.

A principal component of our strategy is maximizing the value of our ECCs through our intellectual property that covers our technologies, which is accentuated by intermediate and program-specific intellectual property protections. In addition to owned and in-licensed patents, we solidify our intellectual property protection through a combination of trade secrets, know-how, confidentiality, nondisclosure and other contractual provisions, and security measures to protect our confidential and proprietary information related to each platform and collaborator program. We regularly assess and review the risks and benefits of protecting our developments through each aspect of intellectual property available to us.

Because we rely on trade secrets, know-how and continuing technological advances to protect various aspects of our core technology, we require our employees, consultants and scientific collaborators to execute confidentiality and invention assignment agreements with us to maintain the confidentiality of our trade secrets and proprietary

information. Our confidentiality agreements generally provide that the employee, consultant or scientific collaborator will not disclose our confidential information to third parties. These agreements also provide that inventions conceived by the employee, consultant or scientific collaborator in the course of working for us will be our exclusive property. Additionally, our employees agree to take certain steps to facilitate our assertion of ownership over such intellectual property. These measures may not adequately protect our trade secrets or other proprietary information. If they do not adequately protect our rights, third parties could use our technologies, and we could lose any competitive advantage we may have. In addition, others may independently develop similar proprietary information or techniques or otherwise gain access to our trade secrets, which could impair any competitive advantage we may have.

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Regulatory environment

Regulations affecting Intrexon

Our ongoing research and development relies on evaluations in animals, which may become subject to bans or additional regulations, and, as described below, our research operations are subject to various environmental regulations. However, most of the laws and regulations concerning synthetic biology relate to the end products produced using synthetic biology, but that may change. For example, the Presidential Commission for the Study of Bioethical Issues in December 2010 recommended that the federal government oversee, but not regulate, synthetic biology research. The Presidential Commission also recommended that the federal government lead an ongoing review of developments in the synthetic biology field and that the federal government conduct a reasonable risk assessment before the field release of synthetic organisms. As discussed below, the products our collaborators produce are subject to extensive regulation. Refer to Risk factors The markets in which our collaborators are developing products using our technologies are subject to extensive regulation, and we rely on our collaborators to comply with all applicable laws and regulations for more discussion of regulatory risks.

Environmental regulations affecting both Intrexon and our collaborators

Our collaborators and we are subject to various federal, state and local environmental laws, rules and regulations, including those relating to the discharge of materials into the air, water and ground, the generation, storage, handling, use, transportation and disposal of hazardous materials and the health and safety of employees with respect to laboratory activities required for the development of products and technologies. These laws and regulations require us and our collaborators to obtain environmental permits and comply with numerous environmental restrictions. These laws and regulations also may require expensive pollution control equipment or operation changes to limit actual or potential impacts to the environment.

Our laboratory activities and those of our collaborators inherently involve the use of potentially hazardous materials, which are subject to health, safety and environmental regulations. We design our infrastructure, procedures and equipment to meet our obligations under these regulations. We perform recurring internal and third-party audits and provide employees ongoing training and support, as required. All of our employees must comply with safety instructions and procedures, which are codified in our employment policies. Federal and state laws and regulations impose requirements on the production, importation, use and disposal of chemicals and genetically modified microorganisms, which impact us and our collaborators. Our collaborators processes may contain genetically engineered organisms which, when used in an industrial processes, are considered new chemicals under the Toxic Substances Control Act program of the U.S. Environmental Protection Agency, or EPA. These laws and regulations would require our collaborators to obtain and comply with the EPA s Microbial Commercial Activity Notice process to operate. In the European Union, our collaborators may be subject to a chemical regulatory program known as REACH (Registration, Evaluation, Authorization and Restriction of Chemical Substances). Under REACH, our collaborators are required to register their products with the European Commission, and the registration process could result in significant costs or delay the manufacture or sale of our collaborators products in the European Union.

Regulations affecting our collaborators

Human therapeutics regulation

As discussed above in Risk factors Risks related to our dependence on third parties, the products produced by our collaborators enabled by our technology platforms are subject to extensive regulation. We rely on our collaborators compliance with laws and regulations applicable to the products they produce. We do not independently monitor

whether our collaborators comply with applicable laws and regulations. Please see the risk factor entitled The markets in which our collaborations are developing products using our technologies are subject to extensive regulation, and we rely on our collaborations to comply with all applicable laws and regulations.

Government authorities in the United States, at the federal, state and local level, and in other countries extensively regulate, among other things, the research, development, testing, manufacture, including any manufacturing changes, packaging, storage, recordkeeping, labeling, advertising, promotion, distribution, marketing, import and

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export of pharmaceutical products such as those being developed by our collaborators. The processes for obtaining regulatory approvals in the United States and in foreign countries, along with subsequent compliance with applicable statutes and regulations, require the expenditure of substantial time and financial resources.

In addition to regulations in the United States, our collaborators will be subject to a variety of foreign regulations governing clinical trials and commercial sales and distribution of the products enabled by our technologies. Whether or not our collaborators obtain FDA approval for a product, they must obtain approval by the comparable regulatory authorities of foreign countries or economic areas, such as the European Union, before they may commence clinical trials or market products in those countries or areas. The approval process and requirements governing the conduct of clinical trials, product licensing, pricing and reimbursement vary greatly from place to place, and the time may be longer or shorter than that required for FDA approval.

Animal health regulation

The sale of animal health products is governed by the laws and regulations specific to each country. In the majority of our target markets, the relevant health authority is separate from those governing human medicinal products. In the United States, the FDA regulates animal health pharmaceuticals, the United States Department of Agriculture, or USDA, regulates veterinary vaccines, and EPA regulates veterinary pesticides. Each U.S. agency has its own rules and regulations with which our collaborators must comply. In Europe, the European Medicines Agency, or EMA, is responsible for the scientific evaluation of medicines, including animal health products being developed by our collaborators with our technology platforms. Most other countries regulatory agencies will generally refer to the FDA, USDA, European Union and other international animal health entities.

Food product regulation

The manufacturing, marketing and certain areas of research related to some of the potential food products developed by our collaborators are subject to regulation by federal and state governmental authorities in the United States, including the FDA, the USDA, and the EPA. Comparable authorities are involved in other countries, including the EMA. The FDA regulates genetically engineered animals under new animal drug provisions of the law, and the agency must approve them before they are allowed on the market. Following marketing approval, the FDA continues to regulate drug and biological products extensively.

Energy and chemical regulation

Regulation by governmental authorities in the United States and other countries is a significant factor in the development, manufacture and marketing of biofuels. The biofuels developed by our collaborators with our technology platforms may require regulatory approval by governmental agencies prior to commercialization. In the United States, various federal, and, in some cases, state statutes and regulations also govern or impact the manufacturing, safety, storage and use of biofuels. The environmental regulations discussed above also govern the development, manufacture and marketing of energy and chemical products.

Regulations affecting AquaBounty

On December 26, 2012, the FDA published its environmental assessment, or EA, for AAS, along with its Finding of No Significant Impact, or FONSI, in the Federal Register, confirming that an approval of the pending New Animal Drug Application would not have an adverse effect on the environment and opened up a 60 day period for public comment. On February 13, 2013 the FDA extended the period for public comment by an additional 60 days, which expired April 26, 2013.

Prior to the publication of the EA and FONSI, in September 2010, the FDA had held a public meeting of its Veterinary Medicine Advisory Committee to review its findings regarding AAS.

The conclusion of its panel of experts was that AAS is indistinguishable from other farmed Atlantic salmon, is safe to eat and does not pose a threat to the environment under its conditions of use. Subsequently, the FDA initiated an EA in compliance with its obligations under the U.S. National Environmental Policy Act, which requires that all federal agencies consider the possible environmental impacts of any action that they authorize.

While we do not expect any further requirements prior to FDA approval for sale to the public and the public comment period on the EA and FONSI have closed as re-scheduled, the FDA has not provided AquaBounty with an indication of the process or associated timing that will occur subsequent to the conclusion of the re-scheduled period for public comment.

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Research and development

As of December 31, 2013, we had 149 employees dedicated to research and development. Of these employees, 63 hold advanced degrees in engineering and biology or other sciences, including either a Ph.D., M.D. or D.V.M. We incurred expenses of $48.5 million in 2013, $64.2 million in 2012 and $70.4 million in 2011 on research and development activities. We anticipate that our research and development expenditures will increase substantially as we investigate other applications for our synthetic biotechnologies. Our primary research and development operations are located in leased laboratory facilities in San Diego, California, San Carlos, California, Germantown, Maryland, Durham, North Carolina and Blacksburg, Virginia.

As of December 31, 2013, AquaBounty had eight employees dedicated to research and development. We anticipate that AquaBounty s research and development expenditures will increase as it focuses on bringing AAS to market. AquaBounty s research and development operations are located in laboratory facilities in Massachusetts and Canada.

Financial Information

Collaboration revenues and other revenues and operating income for each of the last three fiscal years, along with assets at December 31, 2013, 2012, and 2011, are set forth in Note 2 to the consolidated financial statements, which are included in Item 8 of this Annual Report. Financial information about geographic areas is also set forth in Note 2 to the consolidated financial statements.

Manufacturing

In general, we produce small quantities of our compounds in our laboratory facilities for investigational purposes and testing.

AquaBounty has a production facility in Canada. This facility is currently used for the purpose of producing AAS. AquaBounty leases a further growth facility in the Republic of Panama.

Sales and marketing

We do not currently have a sales and marketing force related to the end products that are being developed by our collaborators with our technologies, as those efforts must generally be undertaken by the collaborators, nor do we intend to develop such a sale and marketing force in the future. However, we are actively seeking new ECCs and marketing our technological capabilities.

AquaBounty has one employee who works in sales and marketing.

Employees

As of December 31, 2013, we had 208 employees, 149 of whom were primarily engaged in research and development activities. Our workforce includes 73 employees with either a Ph.D., M.D. or D.V.M. and an additional 105 employees with Bachelors or Masters Degrees. None of our employees is represented by a labor union and we consider our employee relations to be good.

As of December 31, 2013, AquaBounty had 15 employees, 8 of whom were primarily engaged in research and development activities.

Corporate information

We are a Virginia corporation and our principal executive offices are located at 222 Lakeview Avenue, Suite 1400, West Palm Beach, Florida 33401, and our telephone number is (561) 410-7000.

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Additional Information

Our website is *www.dna.com*. We post regulatory filings on this website as soon as reasonably practicable after they are electronically filed with or furnished to the SEC. These filings include annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, Section 16 reports on Forms 3, 4, and 5, and any amendments to those reports filed with or furnished to the SEC. Access to these filings on our website is available free of charge. Copies are also available, without charge, from Intrexon Corporation Investor Relations, 20374 Seneca Meadows Parkway, Germantown, Maryland 20876. Reports filed with the SEC may be viewed at *www.sec.gov* or obtained at the SEC Public Reference Room at 100 F Street, NE, Washington, D.C. 20549. Information regarding the operation of the Public Reference Room may be obtained by calling the SEC at 1-800-SEC-0330. We also post our press releases on our website. Information on our website is not deemed to be incorporated by reference into this Annual Report.

In addition, our Corporate Governance Guidelines, Code of Business Conduct and Ethics, and charters for the Audit Committee, the Compensation Committee and the Nominating and Corporate Governance Committee are available free of charge to shareholders and the public through the Corporate Governance section of our website. Printed copies of the foregoing are available to any shareholder upon written request to our Treasurer at the address set forth on the cover of this Annual Report or may be requested through our website, *www.dna.com*.

Item 1A. Risk Factors

Investing in our common stock involves a high degree of risk. You should carefully consider the risks described below, together with the other information contained in this Annual Report, including our consolidated financial statements and the related notes appearing at the end of this Annual Report, before making your decision to invest in shares of our common stock. We cannot assure you that any of the events discussed in the risk factors below will not occur. These risks could have a material and adverse impact on our business, results of operations, financial condition or prospects. If that were to happen, the trading price of our common stock could decline, and you could lose all or part of your investment.

This Annual Report also contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including the risks faced by us described below and elsewhere in this Annual Report. See Special note regarding forward-looking statements for information relating to these forward-looking statements.

Risks related to our financial position, operating results and need for additional capital

We have a history of net losses, and we may not achieve or maintain profitability.

We have incurred net losses attributable to Intrexon since our inception, including losses attributable to Intrexon of $39.0 million, $81.9 million and $85.3 million in 2013, 2012 and 2011, respectively. As of December 31, 2013, we had an accumulated deficit of $376.4 million. We may incur losses and negative cash flow from operating activities for the foreseeable future. To date, we have derived a substantial portion of our revenues from exclusive channel collaborations, or ECCs, and expect to derive a substantial portion of our revenues from these and additional ECCs for the foreseeable future. If our existing collaborators terminate their ECCs with us or we are unable to enter into new ECCs, our revenues could be adversely affected. In addition, certain of our ECCs provide for milestone payments, future royalties and other forms of contingent consideration, the payment of which are uncertain as they are dependent on our collaborators abilities and willingness to successfully develop and commercialize products. We expect a significant period of time will pass before the achievement of contractual milestones and the realization of royalties on

products commercialized under our ECCs. As a result, we expect that our expenses will exceed revenues for the foreseeable future, and we may not achieve profitability. If we fail to achieve profitability, or if the time required to achieve profitability is longer than we anticipate, we may not be able to continue our business. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis.

We may need substantial additional capital in the future in order to fund our business.

We expect our future capital requirements will be substantial, particularly as we continue to develop our business and expand our synthetic biology technology platform. Although we believe that our existing cash and cash equivalents and short-term and long-term investments and cash expected to be received from our current collaborators will enable us to fund our operating expenses and capital expenditure requirements for at least the next 12 months, we may need additional capital if our current plans and assumptions change. Our need for additional capital will depend on many factors, including:

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the commercial success of our ECCs;

whether we are successful in obtaining payments from our collaborators;

whether we can enter into additional ECCs;

the progress and scope of the collaborative and independent research and development projects performed by us and our collaborators;

whether an existing obligation under our ECC with ZIOPHARM Oncology, Inc., or ZIOPHARM, is triggered that could require us to make a further investment in their securities of up to $19 million, the timing of which is not within our control;

the effect of any acquisitions of other businesses or technologies that we may make in the future;

whether we decide to develop internal development or manufacturing capabilities;

the costs associated with being a public company; and

the filing, prosecution and enforcement of our intellectual property.

If our capital resources are insufficient to meet our capital requirements, and we are unable to enter into or maintain ECCs with collaborators that are able or willing to fund development efforts or commercialize products enabled by our technologies, we will have to raise additional funds to continue the development of our technologies and complete the commercialization of products, if any, resulting from our technologies. If future financings involve the issuance of equity securities, our existing shareholders would suffer dilution. If we raise debt financing, we may be subject to restrictive covenants that limit our ability to conduct our business. We may not be able to raise sufficient additional funds on terms that are favorable to us, if at all. If we fail to raise sufficient funds and continue to incur losses, our ability to fund our operations, take advantage of strategic opportunities, develop products or technologies, or otherwise respond to competitive pressures could be significantly limited. If this happens, we may be forced to delay or terminate research or development programs or the commercialization of products resulting from our technologies, curtail or cease operations or obtain funds through ECCs or other collaborative and licensing arrangements that may require us to relinquish commercial rights, or grant licenses on terms that are not favorable to us. If adequate funds are not available, we will not be able to successfully execute our business plan or continue our business.

Our quarterly and annual operating results may fluctuate in the future. As a result, we may fail to meet or exceed the expectations of research analysts or investors, which could cause our stock price to decline.

Our financial condition and operating results have varied significantly in the past and may continue to fluctuate from quarter to quarter and year to year in the future due to a variety of factors, many of which are beyond our control. Factors relating to our business that may contribute to these fluctuations include the following factors, as well as other

factors described elsewhere in this Annual Report:

- our ability to achieve or maintain profitability;
- our relationships, and the associated exclusivity terms, with collaborators in our target end markets;
- our ability to develop and maintain technologies that our collaborators continue to use and that new collaborators are seeking;
- our ability to enter into ECCs;
- the feasibility of producing and commercializing products enabled by our technologies;
- obligations to provide resources to our collaborators or to the collaborations themselves pursuant to the terms of the relevant ECC;
- our ability to manage our growth;
- the outcomes of research programs, clinical trials, or other product development and approval processes conducted by our collaborators;
- the ability of our collaborators to develop and successfully commercialize products enabled by our technologies;

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risks associated with the international aspects of our business;

our ability to integrate any businesses or technologies we may acquire with our business;

potential issues related to our ability to accurately report our financial results in a timely manner;

our dependence on, and the need to attract and retain, key management and other personnel;

our ability to obtain, protect and enforce our intellectual property rights;

our ability to prevent the theft or misappropriation of our intellectual property, know-how or technologies;

potential advantages that our competitors and potential competitors may have in securing funding or developing competing technologies or products;

our ability to obtain additional capital that may be necessary to expand our business;

our collaborators ability to obtain additional capital that may be necessary to develop and commercialize products under our ECCs;

our exposure to the volatility associated with recording the fair value of securities of our collaborators held by us;

business interruptions such as power outages and other natural disasters;

public concerns about the ethical, legal and social ramifications of genetically engineered products and processes;

our ability to use our net operating loss carryforwards to offset future taxable income; and

the results of our consolidated subsidiaries.

Due to the various factors mentioned above, and others, the results of any prior quarterly or annual periods should not be relied upon as indications of our future operating performance.

We have a limited operating history, which may make it difficult to evaluate our current business and predict our future performance.

We have been in existence since 1998. From 1998 until 2010, our operations focused primarily on organizing and staffing our company and developing our technologies. Our current business model has not been tested. In January 2011, we recognized our first revenues from our first ECC. Because our revenue growth has occurred in recent periods, our limited operating history may make it difficult to evaluate our current business and predict our future performance. Any assessments of our current business and predictions made about our future success or viability may not be as accurate as they could be if we had a longer operating history. We have encountered and will continue to encounter risks and difficulties frequently experienced by growing companies in rapidly changing industries. If we do not address these risks successfully, our business will be harmed. If we engage in any acquisitions, we will incur a variety of costs and may potentially face numerous risks that could adversely affect our business and operations.

We may pursue strategic acquisitions and investments which could have an adverse impact on our business if they are unsuccessful.

We have made acquisitions in the past and, if appropriate opportunities become available, we may acquire additional businesses, assets, technologies or products to enhance our business in the future. In connection with any future acquisitions, we could:

issue additional equity securities, which would dilute our current shareholders;

incur substantial debt to fund the acquisitions; or

assume significant liabilities.

Although we conduct due diligence reviews of our acquisition targets, such processes may fail to reveal significant liabilities. Acquisitions involve numerous risks, including:

problems integrating the purchased operations, facilities, technologies or products;

unanticipated costs and other liabilities;

diversion of management s attention from our core businesses;

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adverse effects on existing business relationships with current and/or prospective collaborators, customers and/or suppliers;

risks associated with entering markets in which we have no or limited prior experience; and

potential loss of key employees.

Acquisitions also may require us to record goodwill and non-amortizable intangible assets that will be subject to impairment testing on a regular basis and potential periodic impairment charges, incur amortization expenses related to certain intangible assets, and incur large and immediate write-offs and restructuring and other related expenses, all of which could harm our operating results and financial condition. In addition, we may acquire companies that have insufficient internal financial controls, which could impair our ability to integrate the acquired company and adversely impact our financial reporting. If we fail in our integration efforts with respect to any of our acquisitions and are unable to efficiently operate as a combined organization, our business and financial condition may be adversely affected.

We own equity interests in several of our collaborators and have exposure to the volatility and liquidity risks inherent in holding their common stock.

In connection with our ECCs, we generally receive technology access fees. Because several of our collaborators are private companies or public corporations with limited capital, we allow them to pay our access fee in stock. As a result, we own equity interests in several of our collaborators. We may continue to provide this alternative to our collaborators. Owning equity in our collaborators further increases our exposure to the risks of our collaborators businesses beyond our dependence on these collaborators to provide market and product development expertise, as well as sales, marketing and regulatory capabilities. Our equity ownership in our collaborators exposes us to volatility and the potential for negative returns. We may have restrictions on resale and/or limited markets to sell our equity ownership. In many cases, our equity position is a minority position which exposes us to further risk as we are not able to exert control over the companies in which we hold securities.

We select collaborators based on a variety of factors such as their capabilities, capacity and expertise in a defined field. As described above, we may allow the collaborator to pay our access fee in cash or equity securities. As a result, the process by which we obtain equity interests in our collaborators and the factors we consider in deciding whether to acquire, hold or dispose of these equity positions may differ significantly from those that an independent investor would consider when purchasing equity interests in the collaborator. One significant factor would include our own expectation as to the success of our efforts to assist the collaborator in developing products enabled by our technologies.

We own common stock of several publicly traded companies and the values of those equity interests are subject to market price volatility. For each collaborator where we own equity securities, we make an accounting policy election to present them at either the fair value at the end of each reporting period or using the cost or equity method depending on our level of influence. We have adopted the fair value method of accounting for certain of these securities, and therefore, have recorded them at fair value at the end of each reporting period with the unrealized gain or loss recorded as a separate component of other income or expense, net for the period. As of December 31, 2013 and 2012, the aggregate original cost basis of these securities was $140.0 million and $92.1 million, respectively, and the market value was $141.5 million and $83.1 million, respectively. The fair value of these securities is subject to fluctuation in the future due to the volatility of the stock market, changes in general economic conditions and changes in the financial conditions of one or more collaborators.

The common stock of our collaborators may not be publicly traded, and if it is traded publicly, the trading market could be limited or have low trading volume. In some cases, we could hold unregistered shares and we may not have demand registration rights with respect to those shares. We evaluate whether any discounts for trading restrictions or other basis for lack of marketability should be applied to the fair value of the securities at inception of the ECC. In the event we conclude that a discount should be applied, the fair value of the securities is adjusted at inception of the ECC and re-evaluated at each reporting period thereafter. In all of these instances, we have substantial liquidity risk related to these holdings, and we may not be able to sell, or sell quickly, all or part of these equity interests.

In connection with future ECCs, we may, from time to time, receive from collaborators, both public and private, warrants, rights and/or options, all of which involve special risks. To the extent we receive warrants or options in connection with future ECCs, we would be exposed to risks involving pricing differences between the market value of underlying securities and our exercise price for the warrants or options, a possible lack of liquidity and the related inability to close a warrant or options position, all of which could ultimately have an adverse effect.

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We rely on our collaborators and other third parties to deliver timely and accurate information in order to accurately report our financial results in the time frame and manner required by law.

We need to receive timely, accurate and complete information from a number of third parties in order to accurately report our financial results on a timely basis. We rely on our collaborators to provide us with complete and accurate information regarding revenues, expenses and payments owed to or by us on a timely basis. In addition, we intend to rely on current and future collaborators under our ECCs to provide us with product sales and cost saving information in connection with royalties, if any, owed to us. If the information that we receive is not accurate, our consolidated financial statements may be materially incorrect and may require restatement, and we may not receive the full amount of consideration to which we are entitled under our ECCs. Although we have audit rights with these parties, performing such an audit could be expensive and time consuming and may not be adequate to reveal any discrepancies in a timeframe consistent with our reporting requirements. We own a significant equity position in several of our ECC collaborators, including a majority position in two of our ECC collaborators, AquaBounty Technologies, Inc., or AquaBounty, and Biological & Popular Culture, Inc., or BioPop. In 2013, we began to consolidate the financial statements of AquaBounty and BioPop into our consolidated financial statements. In the future, we may need to consolidate the financial statements of one or more other collaborators into our consolidated financial statements. Although we have contractual rights to receive information and certifications allowing us to do this, such provisions may not ensure that we receive information that is accurate or timely. As a result, we may have difficulty completing accurate and timely financial disclosures, which could have an adverse effect on our business.

Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.

As of December 31, 2013 and 2012, we had net operating loss carryforwards of approximately $242.3 million and $207.0 million, respectively, for U.S. federal income tax purposes available to offset future taxable income and U.S. federal and state research and development tax credits of $7.0 million and $5.8 million, respectively, prior to consideration of annual limitations that may be imposed under Section 382 of the Internal Revenue Code of 1986, as amended, or Section 382. These carryforwards begin to expire in 2022. Our past issuances of stock and mergers and acquisitions have resulted in ownership changes within the meaning of Section 382. As a result, the utilization of portions of our net operating losses may be subject to annual limitations. As of each of December 31, 2013 and 2012, approximately $16.4 million of our net operating losses generated prior to 2008 are limited by Section 382 to annual usage limits of approximately $1.5 million. As of each of December 31, 2013 and 2012, approximately $14.8 million of net operating losses were inherited via acquisition and are limited based on the value of the target at the time of the transaction. Future changes in stock ownership may also trigger an ownership change and, consequently, a Section 382 limitation.

Risks related to our technologies and business operations

Ethical, legal and social concerns about synthetic biologically engineered products and processes could limit or prevent the use of products or processes using our technologies and limit our revenues.

Our technologies involve the use of synthetic biologically engineered products or synthetic biological technologies. Public perception about the safety and environmental hazards of, and ethical concerns over, genetically engineered products and processes could influence public acceptance of our technologies, products and processes. If we and our collaborators are not able to overcome the ethical, legal and social concerns relating to synthetic biological engineering, products and processes using our technologies may not be accepted. These concerns could result in increased expenses, regulatory scrutiny, delays or other impediments to our programs or the public acceptance and commercialization of products and processes dependent on our technologies or inventions. The ability of our collaborators to develop and commercialize products, or processes using our technologies could be limited by public

attitudes and governmental regulation.

The subject of genetically modified organisms has received negative publicity, which has aroused public debate. This adverse publicity could lead to greater regulation and trade restrictions on imports of genetically altered products. Further, there is a risk that products produced using our technologies could cause adverse health effects or other adverse events, which could also lead to negative publicity.

The synthetic biological technologies that we develop may have significantly enhanced characteristics compared to those found in naturally occurring organisms, enzymes or microbes. While we produce our synthetic biological

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technologies only for use in a controlled laboratory and industrial environment, the release of such synthetic biological technologies into uncontrolled environments could have unintended consequences. Any adverse effect resulting from such a release could have a material adverse effect on our business and financial condition, and we may have exposure to liability for any resulting harm.

We may become subject to increasing regulation in the future.

Our ongoing research and development relies on evaluations in animals, which may become subject to bans or additional regulations, and, as described above, our research operations are subject to various environmental regulations. However, most of the laws and regulations concerning synthetic biology relate to the end products produced using synthetic biology, but that may change. For example, the Presidential Commission for the Study of Bioethical Issues in December 2010 recommended that the federal government oversee, but not regulate, synthetic biology research. The Presidential Commission also recommended that the government lead an ongoing review of developments in the synthetic biology field and that the government conduct a reasonable risk assessment before the field release of synthetic organisms. Synthetic biology may become subject to additional government regulations as a result of the recommendations, which could require us to incur significant additional capital and operating expenditures and other costs in complying with these laws and regulations.

To date, no commercial products have been enabled by our technologies and even if our technologies prove to be effective, they still may not lead to commercially viable products.

To date, none of our collaborators has received marketing approval or has commercialized any products enabled by our technologies. There is no guarantee that we or our collaborators will be successful in creating products enabled by our technologies. Even if our collaborators are successful in using our technologies, they may not be able to commercialize the resulting products or may decide to use other methods competitive with our technologies that do not utilize synthetic biology.

The FDA has not yet approved any gene therapies for use in humans or animals.

The U.S. Food and Drug Administration, or FDA, has not yet approved any gene therapies for use in humans or animals. The field of gene therapies is experimental and has not yet proven successful in many clinical trials. Clinical trials with gene therapies have encountered a multitude of significant technical problems in the past, including unintended integration with host DNA leading to serious adverse events, poor levels of protein expression, transient protein expression, viral overload, immune reactions to either viral capsids utilized to deliver DNA, DNA itself, proteins expressed or cells transfected with DNA. There can be no assurance that our development efforts or those of our collaborators will be successful, that we or they will receive the regulatory approvals necessary to initiate clinical trials, where applicable, or that we will ever be able to successfully commercialize a product enabled by our technologies. To the extent that we or our collaborators utilize viral constructs or other systems to deliver gene therapies and the same or similar delivery systems demonstrate unanticipated and/or unacceptable side effects in preclinical or clinical trials conducted by ourselves or others we may be forced to, or elect to, discontinue development of such products.

If we lose key personnel, including key management personnel, or are unable to attract and retain additional personnel, it could delay our product development programs, harm our research and development efforts, and we may be unable to pursue collaborations or develop our own products.

Our business involves complex operations across a variety of markets and requires a management team and employee workforce that is knowledgeable in the many areas in which we operate. The loss of any key members of our

management, including our Chief Executive Officer, Randal J. Kirk, our Chief Operating Officer, Krish S. Krishnan, or our Chief Science Officer, Thomas D. Reed, or the failure to attract or retain other key employees who possess the requisite expertise for the conduct of our business, could prevent us from developing and commercializing our products for our target markets and entering into collaborations or licensing arrangements to execute on our business strategy. We currently maintain key man insurance on Dr. Reed in the amount of $25.0 million; however, that coverage would likely be inadequate to compensate for the loss of his services. In addition, the loss of any key scientific staff, or the failure to attract or retain other key scientific employees, could prevent us from developing our technologies for our target markets and entering into collaborations or licensing arrangements to execute on our business strategy. We may not be able to attract or retain qualified employees in the future due to the intense competition for qualified personnel among biotechnology, synthetic biology and other technology-based businesses, or due to the unavailability of personnel with the qualifications or experience necessary for our business. If we are not able to attract and retain the necessary personnel to accomplish our business objectives, we may

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experience staffing constraints that will adversely affect our ability to meet the demands of our collaborators and customers in a timely fashion or to support our internal research and development programs. In particular, our product and process development programs are dependent on our ability to attract and retain highly skilled scientists. Competition for experienced scientists and other technical personnel from numerous companies and academic and other research institutions may limit our ability to attract and retain such personnel on acceptable terms. All of our employees are at-will employees, which means that either the employee or we may terminate their employment at any time.

Our planned activities will require additional expertise in specific industries and areas applicable to the products and processes developed through our technologies or acquired through strategic or other transactions, especially in the end markets that we seek to penetrate. These activities will require the addition of new personnel, and the development of additional expertise by existing personnel. The inability to attract personnel with appropriate skills or to develop the necessary expertise could impair our ability to grow our business.

We may encounter difficulties managing our growth, which could adversely affect our business.

Currently, we are working simultaneously on multiple projects targeting several market sectors, including activities in human therapeutics, protein production, animal sciences, agricultural biotechnology and industrial products. These diversified operations place increased demands on our limited resources and require us to substantially expand the capabilities of our administrative and operational resources and to attract, train, manage and retain qualified management, technicians, scientists and other personnel. As our operations expand domestically and internationally, we will need to continue to manage multiple locations and additional relationships with various customers, collaborators, suppliers and other third parties. Our ability to manage our operations, growth and various projects effectively will require us to make additional investments in our infrastructure to continue to improve our operational, financial and management controls and our reporting systems and procedures and to attract and retain sufficient numbers of talented employees, which we may be unable to do effectively. As a result, we may be unable to manage our expenses in the future, which may negatively impact our gross margins or operating margins in any particular quarter. In addition, we may not be able to successfully improve our management information and control systems, including our internal control over financial reporting, to a level necessary to manage our growth.

Competitors and potential competitors may develop products and technologies that make ours obsolete or garner greater market share than ours.

We do not believe that we have any direct competitors who provide comparable technologies of similar depth and breadth which to the same extent enable the commercialization of products developed using synthetic biology across a broad spectrum of biologically based industries. However, there are companies that have competing technologies for individual pieces of our proprietary suite of complementary technologies. One portion of our proprietary technology related to DNA synthesis and assembly includes the ability to synthesize new DNA. We believe the following companies engage in the manufacture of DNA components: DNA 2.0, Inc., Blue Heron Biotech, LLC and Life Technologies Corporation, now part of Thermo Fisher Scientific Inc. Another portion of our proprietary technology includes development of fully human monoclonal antibodies. Our technology utilizes advanced methods of stimulating antibody production in naïve human B-cells *in vitro*, or in a test tube, and specifically selecting those cells which produce antibodies that can bind a desired target, such as human toxins, tumor cells and microbial pathogens. We believe the following companies engage in the manufacture of human or human-like monoclonal antibodies: AbD SeroTec (a Bio-Rad Laboratories, Inc. company), Alexion Pharmaceuticals, Inc., XOMA Corporation, Genmab US, Inc., MorphoSys AG, NovImmune SA, Société Des Systèmes Biologiques, or BIOTEM, Adimab, LLC, ProMab Biotechnologies, Inc., Abpro, Inc., AIIM Therapeutics, Inc. and Open Monoclonal Technology, Inc.

The synthetic biologics industry and each of the commercial sectors we have targeted are characterized by rapid technological change and extensive competition. Our future success will depend on our ability to maintain a competitive position with respect to technological advances. Academic institutions also are working in this field. Technological development by others may result in our technologies, as well as products developed by our collaborators using our technologies, becoming obsolete.

Our ability to compete successfully will depend on our ability to develop proprietary technologies that can be used by our collaborators to produce products that reach the market in a timely manner and are technologically superior to and/or are less expensive than other products on the market. Certain of our competitors may benefit from local government subsidies and other incentives that are not available to us or our collaborators. As a result, our

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competitors may be able to develop competing and/or superior technologies and processes, and compete more aggressively and sustain that competition over a longer period of time than we or our collaborators can. As more companies develop new intellectual property in our markets, a competitor could acquire patent or other rights that may limit products using our technologies, which could lead to litigation.

We may be sued for product liability.

Each of our ECCs requires the collaborator to indemnify us for liability related to products produced pursuant to the ECC and to obtain insurance coverage related to product liability in amounts considered standard for the industry. We believe that these industry-standard coverage amounts range from $15.0 million to $40.0 million in the aggregate. Even so, we may be named in product liability suits relating to products that are produced by our collaborators using our technologies. These claims could be brought by various parties, including other companies who purchase products from our collaborators or by the end users of the products. We cannot guarantee that our collaborators will not breach the indemnity and insurance coverage provisions of the ECCs. Further, insurance coverage is expensive and may be difficult to obtain, and may not be available to us or to our collaborators in the future on acceptable terms, or at all. We cannot assure you that our collaborators will have adequate insurance coverage against potential claims. In addition, although we currently maintain product liability insurance for our technologies in amounts we believe to be commercially reasonable, if the coverage limits of these insurance policies are not adequate, a claim brought against us, whether covered by insurance or not, could have a material adverse effect on our business, results of operations, financial condition and cash flows. This insurance may not provide adequate coverage against potential losses, and if claims or losses exceed our liability insurance coverage, we may go out of business. If we cannot successfully defend ourselves against product liability claims, we may incur substantial liabilities or be required to limit commercialization of our product candidates. Regardless of the merits or eventual outcome, liability claims may result in:

- reduced resources of our management to pursue our business strategy;
- decreased demand for products enabled by our technologies;
- injury to our or our collaborators reputation and significant negative media attention;
- withdrawal of clinical trial participants;
- initiation of investigations by regulators;
- product recalls, withdrawals or labeling, marketing or promotional restrictions;
- significant costs to defend resulting litigation;

substantial monetary awards to trial participants or patients;

loss of revenue; and

the inability to commercialize any products using our technologies.

We depend on sophisticated information technology and infrastructure.

We rely on various information systems to manage our operations. These systems are complex and include software that is internally developed, software licensed from third parties and hardware purchased from third parties. These products may contain internal errors or defects, particularly when first introduced or when new versions or enhancements are released. Failure of these systems could have an adverse effect on our business, which in turn may materially adversely affect our operating results and financial condition.

We may incur significant costs complying with environmental, health and safety laws and regulations, and failure to comply with these laws and regulations could expose us to significant liabilities.

We use hazardous chemicals and radioactive and biological materials in our business and are subject to a variety of federal, state, local and international laws and regulations governing, among other matters, the use, generation, manufacture, transportation, storage, handling, disposal of, and human exposure to these materials both in the United States and overseas, including regulation by governmental regulatory agencies, such as the Occupational Safety and Health Administration and the U.S. Environmental Protection Agency. We have incurred, and will continue to incur, capital and operating expenditures and other costs in the ordinary course of our business in complying with these laws and regulations.

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We have international operations and assets, and may have additional international operations and assets in the future. Our international operations and assets may be subject to various economic, social and governmental risks.

Our international operations and any future international operations may expose us to risks that could negatively impact our future results. Our operations may not develop in the same way or at the same rate as might be expected in a country with an economy similar to the United States. The additional risks that we may be exposed to in these cases include, but are not limited to:

- tariffs and trade barriers;
- currency fluctuations, which could decrease our revenues or increase our costs in U.S. dollars;
- regulations related to customs and import/export matters;
- tax issues, such as tax law changes and variations in tax laws;
- limited access to qualified staff;
- inadequate infrastructure;
- cultural and language differences;
- inadequate banking systems;
- different and/or more stringent environmental laws and regulations;
- restrictions on the repatriation of profits or payment of dividends;
- crime, strikes, riots, civil disturbances, terrorist attacks or wars;
- nationalization or expropriation of property;
- law enforcement authorities and courts that are weak or inexperienced in commercial matters; and

deterioration of political relations among countries.

Risks associated with our ECC business model

If we fail to maintain and successfully manage our existing, or enter into new, ECCs, we may not be able to develop and commercialize our technologies and achieve or sustain profitability.

Our ability to enter into, maintain and manage collaborations in our target markets is fundamental to the success of our business. We currently rely, and intend to rely for the foreseeable future, on our collaborators to develop products enabled by our technologies and then to manufacture, market, distribute and sell these products. We intend to enter into other strategic ECCs to produce, market and sell products enabled by the technologies that we have developed and will continue to develop. However, we may not be successful in entering into ECCs with future strategic collaborators. Any failure to enter into ECCs in our target market sectors on favorable terms could delay or hinder our ability to develop and commercialize our technologies and could increase our costs of development and commercialization.

We have entered into ECCs with strategic collaborators to develop products enabled by our technologies. There can be no guarantee that we can successfully manage these ECCs. Under the ECCs, we must use diligent efforts to carry out development activities under the ECC. The exclusivity provisions of the ECCs restrict our ability to commercialize our technologies in the designated field covered by the ECC. In most cases, the collaborator may terminate the ECC with us for any reason upon 90 days notice. In all cases, the ECC may be terminated if we fail to exercise diligent efforts or breach, and fail to cure, other provisions of the ECC. In addition, since our efforts to date have focused on a small number of collaborators in certain targeted sectors, our business would be adversely affected if one or more of these collaborators terminate their ECCs, fail to use our technologies or fail to develop commercially viable products enabled by our technologies.

Dependence on ECCs also will subject us to other risks, including:

- we have relinquished important rights regarding the commercialization, marketing and distribution of products and we may disagree with our collaborators plans in these areas;

- although we retain broad rights with respect to intellectual property developed under the ECCs, our collaborators have the right, under certain circumstances, to take control of the enforcement of such intellectual property;

- we may have lower revenues than if we were to develop, manufacture, market and distribute products enabled by our technologies ourselves;

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a collaborator could, without the use of our synthetic biology technologies, develop and market a competing product either independently or in collaboration with others, including our competitors;

our collaborators could be undercapitalized or fail to secure sufficient resources to fund the development and/or commercialization of the products enabled by our technologies in accordance with the ECC;

our collaborators could become unable or less willing to expend their resources on research and development or commercialization efforts with respect to our technologies due to general market conditions, their financial condition or other circumstances beyond our control;

we may be unable to manage multiple simultaneous ECCs or fulfill our obligations with respect thereto;

disagreements with a collaborator could develop and any conflict with a collaborator could reduce our ability to enter into future ECCs and negatively impact our relationships with one or more existing collaborators;

our collaborators could terminate our ECC with them, in which case, our collaborators may retain rights related to certain products, we may not be able to find another collaborator to develop different products in the field and we may not be able to develop different products in the field ourselves;

our business could be negatively impacted if any of our collaborators undergo a change of control to a third party who is not willing to work with us on the same terms or commit the same resources as our current collaborator; and

our collaborators may operate in countries where their operations could be adversely affected by changes in the local regulatory environment or by political unrest.

If any of these events occur, or if we fail to maintain our ECCs with our collaborators, we may not be able to commercialize our existing and potential technologies, grow our business or generate sufficient revenues to support our operations.

Many of collaborators, including some businesses over which we have significant influence, will need additional capital.

In order for many of our collaborators to execute on their business plans, these collaborators will have future capital requirements, and we may be asked to invest additional funds in these collaborators. If we fail to invest additional funds in a collaborator, the collaborator may not have sufficient capital to continue operations.

We rely on our collaborators to develop, commercialize and market products, and they may not be successful.

We depend on our collaborators to commercialize the products enabled by our technologies. If our collaborators are not able to successfully develop the products enabled by our technologies, none of our enabled products will become commercially available and we will receive no back-end payments under our ECCs. Because we do not currently and

may never possess the resources necessary to independently develop and commercialize all of the potential products that may result from our technologies, our ability to succeed in markets we have currently targeted depends on our ability to enter into ECCs to develop and commercialize potential products. Some of our existing collaborators do not themselves have the resources necessary to commercialize products and they in turn will need to rely on additional sources of financing or third party collaborations. In addition, pursuant to our current ECCs and similar ECCs that we may enter into in the future, we have limited or no control over the amount or timing of resources that any collaborator is able or willing to devote to developing products or collaborative efforts. Any of our collaborators may fail to perform its obligations under the ECC. Our collaborators may breach or terminate their ECCs with us or otherwise fail to conduct their collaborative activities successfully and in a timely manner. If any of these events were to occur, our revenues, financial condition and results of operations could be adversely affected.

The sales process for our ECCs may be lengthy and unpredictable, and we may expend substantial funds and management effort with no assurance of successfully entering into new collaborations to commercialize our technologies.

The sales process for our ECCs may be lengthy and unpredictable. Our sales and licensing efforts may require the effective demonstration of the benefits, value, differentiation, validation of our technologies and services and significant education and training of multiple personnel and departments within the potential collaborator s organization. Though we have made efforts to standardize our ECCs, we may be required to negotiate ECCs containing terms unique to each collaborator, which would lengthen the sales cycle. We may expend substantial funds and management effort with no assurance that we will execute an ECC or otherwise sell our technologies or services. In addition, this lengthy sales cycle makes it more difficult for us to accurately forecast revenue in future periods and may cause revenues and operating results to vary significantly in such periods.

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We have entered into a limited number of ECCs to date, and we require collaborators to successfully commercialize the products enabled by our technologies.

Our success depends upon entering into ECCs with a number of collaborators across a broad spectrum of industries. There is a risk that we may not be able to demonstrate the value proposition of our technologies with enough collaborators across enough industries for us to be successful. We intend to pursue additional ECCs, but may be unable to do so on terms satisfactory to us, or at all. Our current ECCs and any new ECCs we are able to enter into in one or more of the markets we have targeted may not be successful. Moreover, because we have limited financial and managerial resources, we will be required to prioritize our application of resources to particular development efforts. Any resources we expend on one or more of these efforts could be at the expense of other potentially profitable opportunities. If we focus our efforts and resources on one or more of these markets and they do not lead to commercially viable products, our revenues, financial condition and results of operations could be adversely affected.

Many of our current collaborators have no experience producing products at the commercial scale needed for the development of their business, and they will not succeed if they cannot effectively commercialize their products.

In addition to developing products using our technologies, our collaborators must demonstrate the ability to utilize our technologies to produce desired products at the commercial scale and on an economically viable basis or they must collaborate with others to do so. The products and processes developed using our technologies may not perform as expected when applied at commercial scale, or our collaborators may encounter operational challenges for which we and they are unable to devise a workable solution. For example, contamination in the production process could decrease process efficiency, create delays and increase our collaborators costs. Moreover, under the terms of our ECCs, we limit the ability of our collaborators to partner their programs with third parties. We and our collaborators may not be able to scale up our production in a timely manner, if at all, even if our collaborators successfully complete product development in their laboratories and pilot and demonstration facilities. If this occurs, the ability of our collaborators to commercialize products and processes using our technologies will be adversely affected, and, with respect to any products that are brought to market, our collaborators may not be able to lower the cost of production, which would adversely affect our ability to increase the future profitability of our business.

The markets in which our collaborators are developing products using our technologies are subject to extensive regulation, and we rely on our collaborators to comply with all applicable laws and regulations.

Our technologies are used in products that are subject to extensive regulation by governmental authorities. We depend on our collaborators to comply with these laws and regulations with respect to products they produce using our technologies and we do not independently monitor whether our collaborators comply with applicable laws and regulations. If our collaborators fail to comply with applicable laws and regulations, we are subject to substantial financial and operating risks because we depend on our collaborators to produce the end products enabled by our technologies for sale, and because in many cases we have a substantial equity interest in our collaborators. These regulatory risks are extensive and include the following:

- complying with these regulations, including seeking approvals, the uncertainty of the scope of future regulations, and the costs of continuing compliance with regulations could affect the sales and profitability of our collaborators and materially impact our operating results;

our business could be adversely affected if the processes used by our collaborators to manufacture their final products fail to be approved by the applicable regulatory authorities;

where products are subject to regulatory approval, the regulatory approval process can be lengthy, costly, time consuming and inherently unpredictable, and if our collaborators are ultimately unable to obtain regulatory approval for products using our technologies, our business will be substantially harmed;

even if our collaborators are able to commercialize products using our technologies, the product may become subject to post-approval regulatory requirements, unfavorable pricing regulations, third-party payor reimbursement practices or regulatory reform initiatives that could harm our business;

we and our collaborators conduct on-going research and development that relies on evaluations in animals, which may become subject to bans or additional regulations;

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compliance with existing or future environmental laws and regulations could have a material adverse impact on the development and commercialization of products using our technologies; and

to the extent products produced using our technologies are commercialized outside the United States, they will be subject to additional laws and regulations under the jurisdictions in which such products are commercialized.

The markets in which our collaborators are developing products using our technologies are highly competitive.

The markets in which our collaborators are developing products are, and will continue to be, highly competitive, and there can be no assurance that we or our collaborators will be able to compete effectively. There are numerous companies presently in these markets that are developing products that may compete with, and could adversely affect the prices for, any products developed by our collaborators using our technologies. Many of these competitors and potential competitors are well-established companies with significant resources and experience, along with well-developed distribution systems and networks for their products, valuable historical relationships with potential customers and extensive sales and marketing programs for their products. Some of these competitors may use these resources and their market influence to impede the development and/or acceptance of the products developed by our collaborators using our technologies.

We do not believe that we have any direct competitors who provide similar technologies which fully enable the commercialization of products developed using synthetic biology across a broad spectrum of biologically based industries. However, there are companies that have competing technologies for individual pieces of our proprietary suite of complementary technologies. One portion of our proprietary technology related to DNA synthesis and assembly includes the ability to de novo synthesize DNA. The following companies are examples of companies which we believe engage in the manufacture of DNA componentry: DNA 2.0, Inc., Blue Heron Biotech, LLC and Life Technologies Corporation, now part of Thermo Fisher Scientific Inc. Another portion of our proprietary technology includes development of fully human monoclonal antibodies. Our technology utilizes advanced methods of stimulating antibody production in naïve human B-cells *in vitro* (*i.e.,* in a test tube) and specifically selecting those cells which produce antibodies that can bind a desired target (*e.g.,* human toxins, tumor cells, microbial pathogens). The following companies are examples of companies which we believe engage in the manufacture of human or human-like monoclonal antibodies: AbD SeroTec (a Bio-Rad Laboratories, Inc. company), Alexion Pharmaceuticals, Inc., XOMA Corporation, Genmab US, Inc., MorphoSys AG, NovImmune SA, Société Des Systèmes Biologiques, or BIOTEM, Adimab, LLC, ProMab Biotechnologies, Inc., Abpro Labs, AIIM Therapeutics and OmniAb.

To the extent that any of our collaborators competitors are more successful with respect to any key competitive factor or our collaborators are forced to reduce, or are unable to raise, the price of any products enabled by our technologies in order to remain competitive, our operating results and financial condition could be materially adversely affected. Competitive pressure could arise from, among other things, safety and efficacy concerns, limited demand or a significant number of additional competitive products being introduced into a particular market, price reductions by competitors, the ability of competitors to capitalize on their economies of scale, the ability of competitors to produce or otherwise procure products similar or equivalent to those of our collaborators at lower costs and the ability of competitors to access more or newer technology than our collaborators can access (including our own).

Our right to terminate our ECCs is limited.

Generally, we do not have the right to terminate an ECC except in limited circumstances such as the collaborator s failure to exercise diligent efforts in performing its obligations under the ECC, including its development of products enabled by our technologies, or its breach of a term of the ECC that remains uncured for a specified period of time.

Moreover, each of our collaborators receives an exclusive license to use all of our technologies in a designated field, potentially in perpetuity. The collaborators we choose in particular fields may not be in the best position to maximize the value of our technologies in that field, if they are capable of commercializing any products at all. In addition, the scope of the field for a particular ECC may prove to be too broad and result in the failure to maximize the value of our technologies in that field.

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Risks related to our intellectual property

Our ability to compete may decline if we do not adequately protect our proprietary technologies or if we lose some of our intellectual property rights through costly litigation or administrative proceedings.

Our success depends in part on our ability to obtain patents and maintain adequate protection of our intellectual property in the United States and abroad for our suite of technologies and resultant products and potential products. We have adopted a strategy of seeking patent protection in the United States and abroad with respect to certain of the technologies used in or relating to our products and processes. We have also in-licensed rights to additional patents and pending patent applications in the United States and abroad. However, some of these in-licensed patents will expire as early as 2014, and some of our own patents will expire as early as 2017. We intend to continue to apply for patents relating to our technologies, methods and products as we deem appropriate.

We have strategic positioning with respect to our key technologies including patent portfolios directed to: our switch technology covering aspects of our gene switches, such as our RheoSwitch Therapeutic System, and gene modulation systems, vectors, cells and organisms containing these switches, and their use; our activator ligand technology covering aspects of our activator ligands and their use; and our cell identification and selection technology covering aspects of our cell identification and selection platform, including our cell purification, isolation, characterization and manipulation technologies. In these portfolios, the issued U.S. patents and applications, if granted, are scheduled to expire from 2017 to 2034. We have also filed counterpart patents and patent applications in other countries, including Australia, Argentina, Brazil, Canada, China, Europe, Hong Kong, India, Indonesia, Israel, Japan, Korea, Mexico, New Zealand, Philippines, Russia, Singapore, South Africa and Taiwan. In the future we may file in these or additional jurisdictions as deemed appropriate for the protection of our technologies. In these jurisdictions, the issued patents and patent applications, if granted, are scheduled to expire from 2018 to 2032.

The enforceability of patents involves complex legal and factual questions and, therefore, the extent of enforceability cannot be guaranteed. Issued patents and patents issuing from pending applications may be challenged, invalidated or circumvented. Moreover, the United States Leahy-Smith America Invents Act, enacted in September 2011, brought significant changes to the U.S. patent system, which include a change to a first to file system from a first to invent system and changes to the procedures for challenging issued patents and disputing patent applications during the examination process, among other things. The effects of these changes on our patent portfolio and business have yet to be determined, as the final substantive provisions of the America Invents Act took effect on March 16, 2013. The United States Patent and Trademark Office, or the USPTO, only recently finalized the rules relating to these changes and the courts have yet to address the new provisions. These changes could increase the costs and uncertainties surrounding the prosecution of our patent applications and the enforcement or defense of our patent rights. Additional uncertainty may result from legal precedent handed down by the United States Court of Appeals for the Federal Circuit and United States Supreme Court as they determine legal issues concerning the scope and construction of patent claims and inconsistent interpretation of patent laws by the lower courts. Accordingly, we cannot ensure that any of our pending patent applications will result in issued patents, or even if issued, predict the breadth of the claims upheld in our and other companies patents. Given that the degree of future protection for our proprietary rights is uncertain, we cannot ensure that we were the first to invent the inventions covered by our pending patent applications, we were the first to file patent applications for these inventions, the patents we have obtained, particularly certain patents claiming nucleic acids, proteins, or methods, are valid and enforceable, and the proprietary technologies we develop will be patentable.

In addition, unauthorized parties may attempt to copy or otherwise obtain and use our products or technology. Monitoring unauthorized use of our intellectual property is difficult, and we cannot be certain that the steps we have taken will prevent unauthorized use of our technologies, particularly in certain foreign countries where the local laws

may not protect our proprietary rights as fully as in the United States. Moreover, third parties could practice our inventions in territories where we do not have patent protection. Such third parties may then try to import into the United States or other territories products, or information leading to potentially competing products, made using our inventions in countries where we do not have patent protection for those inventions. If competitors are able to use our technologies, our ability to compete effectively could be harmed. Moreover, others may independently develop and obtain patents for technologies that are similar to or superior to our technologies. If that happens, we may need to license these technologies, and we may not be able to obtain licenses on reasonable terms, if at all, which could harm our business.

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We also rely on trade secrets to protect our technologies, especially in cases when we believe patent protection is not appropriate or obtainable. However, trade secrets are difficult to protect. While we require our employees, academic collaborators, collaborators, consultants and other contractors to enter into confidentiality agreements, we may not be able to adequately protect our trade secrets or other proprietary or licensed information. If we cannot maintain the confidentiality of our proprietary and licensed technologies and other confidential information, our ability and that of our licensor to receive patent protection and our ability to protect valuable information owned or licensed by us may be imperiled. Enforcing a claim that a third-party entity illegally obtained and is using any of our trade secrets is expensive and time consuming, and the outcome is unpredictable. Moreover, our competitors may independently develop equivalent knowledge, methods and know-how.

Litigation or other proceedings or third-party claims of intellectual property infringement could require us to spend significant time and money and could prevent us from commercializing our technologies or impact our stock price.

Our commercial success also depends in part on not infringing patents and proprietary rights of third parties, and not breaching any licenses or other agreements that we have entered into with regard to our technologies, products and business. We cannot ensure that patents have not been issued to third parties that could block our or our collaborators ability to obtain patents or to operate as we would like. There may be patents in some countries that, if valid, may block our ability to make, use or sell our products in those countries, or import our products into those countries, if we are unsuccessful in circumventing or acquiring the rights to these patents. There also may be claims in patent applications filed in some countries that, if granted and valid, also may block our ability to commercialize products or processes in these countries if we are unable to circumvent or license them.

The biotechnology industry is characterized by frequent and extensive litigation regarding patents and other intellectual property rights. Many companies have employed intellectual property litigation as a way to gain a competitive advantage. Our involvement in litigation, interferences, opposition proceedings or other intellectual property proceedings inside and outside of the United States, to defend our intellectual property rights or as a result of alleged infringement of the rights of others, may divert management time from focusing on business operations and could cause us to spend significant amounts of money. Some of our competitors may have significantly greater resources and, therefore, they are likely to be better able to sustain the cost of complex patent or intellectual property litigation than we could. The uncertainties associated with litigation could have a material adverse effect on our ability to raise the funds necessary to continue our business or to enter into additional collaborations with others. Furthermore, any potential intellectual property litigation also could force us or our collaborators to do one or more of the following:

- stop selling, incorporating or using products that use the intellectual property at issue;
- obtain from the third party asserting its intellectual property rights a license to sell or use the relevant technology, which license may not be available on reasonable terms, if at all; or
- redesign those products or processes that use any allegedly infringing technology, or relocate the operations relating to the allegedly infringing technology to another jurisdiction, which may result in significant cost or delay to us, or which could be technically infeasible.

The patent landscape in the field of synthetic biology is particularly complex. We are aware of U.S. and foreign patents and pending patent applications of third parties that cover various aspects of synthetic biology including

patents that some may view as covering aspects of our technologies. In addition, there may be patents and patent applications in the field of which we are not aware. In many cases, the technologies we develop are early-stage technologies and we are and our collaborators are just beginning the process of designing and developing products using these technologies. Although we will seek to avoid pursuing the development of products that may infringe any patent claims that we believe to be valid and enforceable, we and our collaborators may fail to do so. Moreover, given the breadth and number of claims in patents and pending patent applications in the field of synthetic biology and the complexities and uncertainties associated with them, third parties may allege that we or our collaborators are infringing upon patent claims even if we do not believe such claims to be valid and enforceable.

Although no third party has asserted a claim of infringement against us, others may hold proprietary rights that could prevent products using our technologies from being marketed. Any patent-related legal action against persons who license our technologies, our collaborators or us claiming damages and seeking to enjoin commercial activities relating to products using our technologies or our processes could subject us to potential liability for damages and require our licensor or us to obtain a license to continue to manufacture or market such products or any future

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product candidates that use our technologies. We cannot predict whether we or our licensor would prevail in any such actions or that any license required under any of these patents would be made available on commercially acceptable terms, if at all. In addition, we cannot be sure that any such products or any future product candidates or processes could be redesigned to avoid infringement, if necessary. Accordingly, an adverse determination in a judicial or administrative proceeding, or the failure to obtain necessary licenses, could prevent our collaborators from developing and commercializing products using our technologies, which could harm our business, financial condition and operating results.

If any of our competitors have filed patent applications or obtained patents that claim inventions also claimed by us, we may have to participate in interference proceedings declared by the USPTO to determine priority of invention and, thus, the right to the patents for these inventions in the United States. These proceedings could result in substantial cost to us even if the outcome is favorable. Even if successful, an interference may result in loss of certain of our important claims.

Any litigation or proceedings could divert our management s time and efforts. Even unsuccessful claims could result in significant legal fees and other expenses, diversion of management time, and disruption in our business. Uncertainties resulting from initiation and continuation of any patent or related litigation could harm our ability to compete.

Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other provisions during the patent process. Given the size of our intellectual property portfolio, compliance with these provisions involves significant time and expense. There are situations in which noncompliance can result in abandonment or lapse of a patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, competitors might be able to enter the market earlier than would otherwise have been the case.

If we do not obtain additional protection under the Hatch-Waxman Amendments and similar foreign legislation by extending the patent terms and obtaining data exclusivity for our technologies, our business may be materially harmed.

Depending upon the timing, duration and specifics of FDA marketing approval of products using our technologies, one or more of the U.S. patents we own or license may be eligible for limited patent term restoration under the Drug Price Competition and Patent Term Restoration Act of 1984, referred to as the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent restoration term of up to five years as compensation for patent term lost during product development and the FDA regulatory review process. However, we may not be granted an extension because of, for example, failing to apply within applicable deadlines, failing to apply prior to expiration of relevant patents or otherwise failing to satisfy applicable requirements. Moreover, the applicable time period or the scope of patent protection afforded could be less than we request. If we are unable to obtain patent term extension or restoration or the term of any such extension is less than we request, our competitors may obtain approval of competing products following our patent expiration, and our ability to generate revenues could be materially adversely affected.

Enforcing our intellectual property rights may be difficult and unpredictable.

If we were to initiate legal proceedings against a third party to enforce a patent claiming one of our technologies, the defendant could counterclaim that our patent is invalid and/or unenforceable or assert that the patent does not cover its

manufacturing processes, manufacturing components or products. Proving patent infringement may be difficult, especially where it is possible to manufacture a product by multiple processes. Furthermore, in patent litigation in the United States, defendant counterclaims alleging both invalidity and unenforceability are commonplace. Although we believe that we have conducted our patent prosecution in accordance with the duty of candor and in good faith, the outcome following legal assertions of invalidity and unenforceability during patent litigation is unpredictable. With respect to the validity of our patent rights, we cannot be certain, for example, that there is no invalidating prior art, of which we and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would not be able to exclude others from practicing the inventions claimed therein. Such a loss of patent protection could have a material adverse impact on

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our business. Even if our patent rights are found to be valid and enforceable, patent claims that survive litigation may not cover commercially valuable products or prevent competitors from importing or marketing products similar to our own, or using manufacturing processes or manufacturing components similar to those used to produce the products using our technologies.

Although we believe we have obtained assignments of patent rights from all inventors, if an inventor did not adequately assign their patent rights to us, a third party could obtain a license to the patent from such inventor. This could preclude us from enforcing the patent against such third party.

We may not be able to enforce our intellectual property rights throughout the world.

The laws of some foreign countries do not protect intellectual property rights to the same extent as the laws of the United States. Many companies have encountered significant problems in protecting and defending intellectual property rights in certain foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents and other intellectual property protection, particularly those relating to synthetic biology. This could make it difficult for us to stop the infringement of our patents or misappropriation of our other intellectual property rights. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business. Accordingly, our efforts to protect our intellectual property rights in such countries may be inadequate.

If our technologies or products using our technologies are stolen, misappropriated or reverse engineered, others could use the technologies to produce competing technologies or products.

Third parties, including our collaborators, contract manufacturers, contractors and others involved in our business often have access to our technologies. If our technologies, or products using our technologies, were stolen, misappropriated or reverse engineered, they could be used by other parties that may be able to reproduce our technologies or products using our technologies for their own commercial gain. If this were to occur, it would be difficult for us to challenge this type of use, especially in countries with limited intellectual property protection.

Confidentiality agreements with employees and others may not adequately prevent disclosures of trade secrets and other proprietary information.

We have taken measures to protect our trade secrets and proprietary information, but these measures may not be effective. We require our new employees and consultants to execute confidentiality agreements upon the commencement of an employment or consulting arrangement with us. These agreements generally require that all confidential information developed by the individual or made known to the individual by us during the course of the individual s relationship with us be kept confidential and not disclosed to third parties. These agreements also generally provide that inventions conceived by the individual in the course of rendering services to us shall be our exclusive property. Nevertheless, our proprietary information may be disclosed, third parties could reverse engineer our technologies or products using our technologies and others may independently develop substantially equivalent proprietary information and techniques or otherwise gain access to our trade secrets. Costly and time-consuming litigation could be necessary to enforce and determine the scope of our proprietary rights, and failure to obtain or maintain trade secret protection could adversely affect our competitive business position.

Risks related to AquaBounty

Because we own a majority of the issued and outstanding shares of AquaBounty, the following risk factors that are applicable to AquaBounty s business also apply to us.

AquaBounty will need additional capital.

In order for AquaBounty to execute on its business plan as announced by its management, AquaBounty will have future capital requirements, and we may be asked to invest additional funds in AquaBounty. If we fail to invest these additional funds, we may not retain control over AquaBounty. We have been advised by the management of AquaBounty that as of December 31, 2013, AquaBounty held $1.9 million of cash and cash equivalents and had a working capital balance of $1.5 million and that these amounts will provide adequate funds for AquaBounty s ongoing operations into the first half of 2014. On March 20, 2014, we purchased additional shares of AquaBounty for $10.0 million in a private subscription offering. We have no contractual obligation to provide funds to AquaBounty and therefore we do not know whether, or to what extent, we will be required to invest additional funds in AquaBounty.

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There is significant uncertainty regarding regulatory approval for AquaBounty s AquAdvantage® Salmon.

As a genetically modified animal for human consumption, AquAdvantage Salmon, or AAS, will require approval from the FDA and regulatory bodies in other countries before it can be sold. To date, there have been significant delays in the regulatory process. There is no guarantee that any approvals granted, if granted, will not be subject to onerous obligations. Any change to AAS or the development of a new product, including pursuant to our ECC, will require AquaBounty to again obtain approval from the FDA and regulatory bodies in other countries.

The regulatory approval process for commercial introduction of AAS will be based on evidence that the AAS are safe to eat and can be grown under conditions that are environmentally sound. AquaBounty is seeking regulatory approval for AAS under a New Animal Drug Application, or NADA. NADA includes all the study components required for Import Tolerance, or tolerances for unapproved new animal drugs where edible portions of animals imported into the United States may contain residues of such drugs, plus an efficacy study, a target animal safety study and a non-target environmental safety study.

Regulatory approval, under the U.S. Food, Drug and Cosmetic Act, requires the submission of studies demonstrating human food safety and consistency in the manufacturing process. From 1995 to 2010 AquaBounty submitted the results of a number of studies on the safety and manufacturing of AAS. AquaBounty completed all major submissions for its NADA for AAS with the FDA in 2010.

In September 2010, the FDA held a public meeting of its Veterinary Medicine Advisory Committee to review its findings regarding AAS. The conclusion of the committee was that AAS is indistinguishable from other farmed Atlantic salmon, is safe to eat and does not pose a threat to the environment under its conditions of use. Subsequently, the FDA initiated an environmental assessment in compliance with its obligations under the U.S. National Environmental Policy Act, which requires that all federal agencies consider the possible environmental impacts of any action which they authorize.

On December 26, 2012, the FDA published its environmental assessment for AAS, along with a Finding of No Significant Impact, in the Federal Register, confirming that an approval of the pending NADA would not have an adverse effect on the environment and opened up a 60 day period for public comment. On February 13, 2013, the FDA extended the period for public comment by an additional 60 days and the period expired on April 26, 2013.

As of March 20, 2014, AquaBounty is awaiting a report of final action by the FDA on the pending NADA. We do not know when the FDA will issue this report.

The loss of AquaBounty broodstock would result in the loss of AquaBounty s commercial technology.

AquaBounty s AAS intellectual property resides in the breeding population of live fish, or broodstock, themselves; destruction of AAS broodstocks by whatever means would result in the loss of the commercial technology. Live animals are subject to disease that may, in some cases, prevent or cause delay in the export of fish or eggs to customers. Disease organisms may be present undetected and transferred inadvertently. Such events may cause loss of revenue.

AquaBounty is exposed to exchange rate fluctuation.

As a consequence of the international nature of its business, AquaBounty is exposed to risks associated with changes in foreign currency exchange rates. AquaBounty is based in the United States and presents its financial statements in U.S. dollars and the majority of AquaBounty s cash resources are held in U.S. dollars or in Canadian dollars. Some of

AquaBounty s future expenses and revenues are expected to be denominated in currencies other than in U.S. dollars. Therefore, movements in exchange rates to translate to foreign currencies may have an impact on AquaBounty s reported results of operations, financial position and cash flows.

Risks related to our common stock

We do not anticipate paying cash dividends, and accordingly, shareholders must rely on stock appreciation for any return on their investment.

We have never declared or paid cash dividends on our capital stock. We do not anticipate paying cash dividends in the future and intend to retain all of our future earnings, if any, to finance the operations, development and growth of our business. As a result, only appreciation of the price of our common stock, which may never occur, will provide a return to shareholders. Investors seeking cash dividends should not invest in our common stock.

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If securities or industry analysts do not publish research or reports, or publish inaccurate or unfavorable research or reports about our business, our share price and trading volume could decline.

The trading market for our shares of common stock depends, in part, on the research and reports that securities or industry analysts publish about us or our business. We do not have any control over these analysts. If securities or industry analysts do not continue to cover us, the trading price for our shares of common stock may be negatively impacted. If one or more of the analysts who covers us downgrades our shares of common stock, changes their opinion of our shares or publishes inaccurate or unfavorable research about our business, our share price would likely decline. If one or more of these analysts ceases coverage of us or fails to publish reports on us regularly, demand for our shares of common stock could decrease and we could lose visibility in the financial markets, which could cause our share price and trading volume to decline.

If our executive officers, directors and largest shareholders choose to act together, they may be able to control our management and operations, acting in their own best interests and not necessarily those of other shareholders.

As of December 31, 2013, our executive officers, directors and beneficial holders of five percent or more of our outstanding stock owned approximately 66 percent of our voting stock, including shares subject to outstanding options and warrants. As a result, these shareholders, acting together, would be able to significantly influence all matters requiring approval by our shareholders, including the election of directors and the approval of mergers or other business combination transactions, as well as our management and affairs. The interests of this group of shareholders may not always coincide with the interests of other shareholders, and they may act in a manner that advances their best interests and not necessarily those of other shareholders. This concentration of ownership control may:

- delay, defer or prevent a change in control;
- entrench our management and/or the board of directors; or
- impede a merger, consolidation, takeover or other business combination involving us that other shareholders may desire.

We have engaged in transactions with companies in which Randal J. Kirk, our Chief Executive Officer, and his affiliates have an interest.

We have engaged in a variety of transactions with companies in which Mr. Kirk and affiliates of Mr. Kirk have an interest. Among these transactions are our ECCs with Genopaver, LLC and Fibrocell Science, Inc. and our licensing arrangement with Halozyme Therapeutics, Inc. We believe that each of these transactions was on terms no less favorable to us than terms we could have obtained from unaffiliated third parties, and each of these transactions was approved by at least a majority of the disinterested members of our board of directors. In addition, subsequent to our consummation of the ECCs with ZIOPHARM, Oragenics, Inc., Synthetic Biologics, Inc., AmpliPhi Biosciences Corp., Soligenix, Inc. and Agilis Biotherapeutics LLC, Mr. Kirk and his affiliates invested in these companies. Furthermore, as we execute on these ECCs going forward, a conflict may arise between our interests and those of Mr. Kirk and his affiliates. It is our intention to ensure that all future transactions, if any, between us and our officers, directors, principal shareholders and their affiliates, are approved by the audit committee or a majority of the independent and disinterested members of the board of directors in accordance with our written related person transaction policy, and are on terms no less favorable to us than those that we could obtain from unaffiliated third

parties.

Randal J. Kirk controls approximately 64 percent of our common stock and is able to control or significantly influence corporate actions, which may result in Mr. Kirk taking actions contrary to the desires of our other shareholders.

We have historically been controlled, managed and principally funded by Randal J. Kirk, our Chief Executive Officer, and affiliates of Mr. Kirk. As of December 31, 2013, Mr. Kirk and shareholders affiliated with him beneficially owned approximately 64 percent of our voting stock. Mr. Kirk is able to control or significantly influence all matters requiring approval by our shareholders, including the election of directors and the approval of mergers or other business combination transactions. The interests of Mr. Kirk may not always coincide with the interests of other shareholders, and he may take actions that advance his personal interests and are contrary to the desires of our other shareholders.

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A significant portion of our total outstanding shares of common stock is restricted from immediate resale but may be sold into the market in the near future. This could cause the market price of our common stock to drop significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock in the public market could occur at any time. These sales, or the perception in the market that the holders of a large number of shares of common stock intend to sell shares, could reduce the market price of our common stock. If Mr. Kirk or any of his affiliates were to sell a substantial portion of the shares they hold, it could cause our stock price to decline.

In addition, as of March 20, 2014, there were 8,563,176 shares subject to outstanding options that will become eligible for sale in the public market to the extent permitted by any applicable vesting requirements, lock-up agreements and Rules 144 and 701 under the Securities Act of 1933, as amended. Moreover, as of December 31, 2013, holders of an aggregate of approximately 72 million shares of our common stock had rights, subject to some conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other shareholders.

We also have registered 7,000,000 shares of common stock that we may issue under our Intrexon Corporation 2013 Omnibus Incentive Plan, or the 2013 Plan, plus the shares of common stock reserved for future issuance upon exercise of outstanding stock options under our Intrexon Corporation 2008 Equity Incentive Plan that remain unissued. These shares can be freely sold in the public market upon issuance and once vested.

We are subject to anti-takeover provisions in our articles of incorporation and bylaws and under Virginia law that could delay or prevent an acquisition of our Company, even if the acquisition would be beneficial to our shareholders.

Certain provisions of Virginia law, the commonwealth in which we are incorporated, and our articles of incorporation and bylaws could hamper a third party s acquisition of us, or discourage a third party from attempting to acquire control of us. These provisions include:

a provision allowing our board of directors to issue preferred stock with rights senior to those of the common stock without any vote or action by the holders of our common stock. The issuance of preferred stock could adversely affect the rights and powers, including voting rights, of the holders of common stock;

establish advance notice requirements for nominations for election to the board of directors or for proposing matters that can be acted on at shareholder meetings;

the inability of shareholders to convene a shareholders meeting without the support of shareholders owning together 25 percent of our common stock;

the application of Virginia law prohibiting us from entering into a business combination with the beneficial owner of 10 percent or more of our outstanding voting stock for a period of three years after the 10 percent or greater owner first reached that level of stock ownership, unless we meet certain criteria;

allow the authorized number of our directors to be changed only by resolution of our board of directors;

limit the manner in which shareholders can remove directors from the board;

require that shareholder actions must be effected at a duly called shareholder meeting and prohibit actions by our shareholders by written consent; and

limit who may call a special meeting of shareholder meetings.

These provisions also could limit the price that certain investors might be willing to pay in the future for shares of our common stock. In addition, these provisions make it more difficult for our shareholders, should they choose to do so, to remove our board of directors or management.

We are an emerging growth company, and we cannot be certain if the reduced reporting requirements applicable to emerging growth companies will make our shares of common stock less attractive to investors.

We are an emerging growth company, as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. For as long as we continue to be an emerging growth company, we may take advantage of exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies, including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive

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compensation, our periodic reports and proxy statements and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and shareholder approval of any golden parachute payments not previously approved. We could be an emerging growth company for up to five years, although circumstances could cause us to lose that status earlier, including if the market value of our shares of common stock held by non-affiliates exceeds $700.0 million as of any June 30 before that time or if we have total annual gross revenue of $1.0 billion or more during any fiscal year before that time, in which cases we would no longer be an emerging growth company as of the following December 31, or if we issue more than $1.0 billion in non-convertible debt during any three-year period before that time, in which case we would no longer be an emerging growth company immediately. We cannot predict if investors will find our shares of common stock less attractive because we may rely on these exemptions. If some investors find our shares of common stock less attractive as a result, there may be a less active trading market for our shares of common stock and our share price may be more volatile.

Under the JOBS Act, emerging growth companies also can delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards and, therefore, will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

If we fail to maintain an effective system of internal control over financial reporting, we may not be able to accurately report our financial results or prevent fraud. As a result, shareholders could lose confidence in our financial and other public reporting, which would harm our business and the trading price of our common stock.

Effective internal controls over financial reporting are necessary for us to provide reliable financial reports and, together with adequate disclosure controls and procedures, are designed to prevent fraud. Any failure to implement required new or improved controls, or difficulties encountered in their implementation could cause us to fail to meet our reporting obligations. In addition, any testing by us conducted in connection with Section 404 of the Sarbanes-Oxley Act, or any subsequent testing by our independent registered public accounting firm, may reveal deficiencies in our internal controls over financial reporting that are deemed to be material weaknesses or that may require prospective or retroactive changes to our financial statements or identify other areas for further attention or improvement. Inferior internal controls could also cause investors to lose confidence in our reported financial information, which could have a negative effect on the trading price of our common stock.

The financial reporting obligations of being a public company in the United States are expensive and time consuming, and may place significant additional demands on our management.

Prior to the consummation of our initial public offering in August 2013, we were not subject to public company reporting obligations in the United States. The additional obligations of being a public company in the United States require significant additional expenditures and place additional demands on our management, including costs resulting from public company reporting obligations under the Securities Exchange Act of 1934, as amended, and the rules and regulations regarding corporate governance practices, including those under the Sarbanes-Oxley Act, the Dodd-Frank Wall Street Reform and Consumer Protection Act, and the listing requirements of the New York Stock Exchange. Our management and other personnel devote a substantial amount of time to ensure that we comply with all of these requirements. Moreover, despite recent reforms made possible by the JOBS Act, the reporting requirements, rules and regulations increase our legal and financial compliance costs and will make some activities more time-consuming and costly, particularly after we are no longer an emerging growth company. Any changes that we make to comply with these obligations may not be sufficient to allow us to satisfy our obligations as a public company on a timely basis, or at all.

We also expect these rules and regulations to make it more difficult and more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. These factors also could make it more difficult for us to attract and retain qualified persons to serve on our board of directors, particularly to serve on our audit and compensation committees, or as executive officers.

Item 1B. Unresolved Staff Comments

Not applicable.

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Item 2. Properties

We lease approximately 187,000 square feet of laboratory or combined laboratory and office space which is used in our research and development efforts. We establish the geographic locations of our research and development operations based on proximity to the relevant market expertise and access to available talent pools. Our primary lab operations under lease include locations in San Diego, California, San Carlos, California, Germantown, Maryland, Durham, North Carolina and Blacksburg, Virginia. We lease an additional 37,000 square feet of administrative offices in Foster City, California, West Palm Beach, Florida, Germantown, Maryland, and Blacksburg, Virginia. The original terms of our leases range from one to five years. See also Management s Discussion and Analysis of Financial Condition and Results of Operations Contractual Obligations and Commitments. The following table shows information about our primary lab operations as of December 31, 2013:

Location	Square footage
Blacksburg, VA	35,456
Durham, NC	32,008
Germantown, MD	56,258
San Carlos, CA	37,076
San Diego, CA	23,409

AquaBounty s primary operations include locations in Massachusetts, Canada, and Panama. AquaBounty leases or owns 18,000 square feet of laboratory space.

Item 3. Legal Proceedings

We are involved in litigation or legal matters incidental to our business activities. While the outcome of these matters cannot be predicted with certainty, we are vigorously defending them and do not currently expect that any of them will have a material adverse effect on our business or financial position. However, should one or more of these matters be resolved in a manner adverse to our current expectation, the effect on our results of operations for a particular fiscal reporting period could be material.

In connection with the acquisition of Medistem, a number of purported class action lawsuits brought on behalf of all Medistem stockholders were filed. The complaints in the lawsuits are similar. Each complaint names Medistem, all of the members of Medistem s board of directors, Intrexon, and a wholly owned subsidiary of Intrexon created by Intrexon to facilitate the merger, as defendants. The plaintiffs sought relief that included an injunction prohibiting the consummation of the merger, damages, and payment of plaintiffs attorneys fees and costs. We believe that these allegations are without merit. On February 25, 2014, the plaintiffs and defendants entered into a memorandum of understanding providing for the release of all claims against the defendants related to the proposed acquisition. The plaintiffs may still apply to the relevant court for an award of fees and reimbursement of costs in connection with the lawsuits. We believe that any settlement or payment of such an award would likely entail a payment by Medistem s insurance provider. Nonetheless, should a court award fees and costs to the plaintiffs and their counsel, and should such an award exceed the coverage limits of the insurance policies of Medistem, we could be required to pay a portion of such award.

Item 4. Mine Safety Disclosures

Not applicable.

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Item 4A. Executive Officers of the Registrant

The following table sets forth certain information regarding our executive officers and directors as of March 20, 2014.

Name	Age	Position(s)
Executive Officers		
Randal J. Kirk	60	Chief Executive Officer and Chairman of the Board
Krish S. Krishnan	49	Chief Operating Officer
Thomas D. Reed, Ph.D.	48	Chief Science Officer and Director
Rick L. Sterling	50	Chief Financial Officer
Donald P. Lehr	39	Chief Legal Officer
Suma M. Krishnan	49	Senior Vice President Product Development
Darryl Webster	54	Senior Vice President Intellectual Property
Samuel Broder, M.D.	69	Executive Vice President Scientific and Public Affairs
Thomas R. Kasser, Ph.D.	59	Senior Vice President Food Sector
Robert F. Walsh, III	55	Senior Vice President Energy and Chemicals Sector
Nir Nimrodi	45	Senior Vice President Environment Sector
Gregory I. Frost, Ph.D.	42	Senior Vice President Health Sector
Kelly Huang, Ph.D.	45	Senior Vice President Consumer Sector

Executive officers

Randal J. Kirk, Chief Executive Officer and Chairman of the Board. Mr. Kirk has served as our Chief Executive Officer since April of 2009 and Chairman of the Board since February 2008. Mr. Kirk provides a wealth of strategic, operational and management experience. Mr. Kirk currently serves as the Senior Managing Director and Chief Executive Officer of Third Security, LLC, an investment management firm founded by Mr. Kirk in March 1999. Additionally, Mr. Kirk founded and became Chairman of the Board of New River Pharmaceuticals Inc. (previously traded on NASDAQ prior to its acquisition by Shire plc in 2007) in 1996, and was President and Chief Executive Officer between October 2001 and April 2007. Mr. Kirk currently serves in a number of additional capacities including as a member of the board of directors of Halozyme Therapeutics, Inc. (NASDAQ: HALO) since May 2007 and as a member of the board of directors of ZIOPHARM Oncology, Inc. (NASDAQ: ZIOP) since January 2011. Previously, Mr. Kirk served as a member of the board of directors of Scios, Inc. (previously traded on NASDAQ prior to its acquisition by Johnson & Johnson) between February 2000 and May 2002, and as a member of the board of directors of Clinical Data, Inc. (previously traded on NASDAQ prior to its acquisition by Forest Laboratories, Inc. in April 2011) from September 2002 to April 2011, and was Chairman of the board of directors from December 2004 to April 2011. Mr. Kirk served on the board of visitors of Radford University from July 2003 to June 2009, was Rector of the board of directors from September 2006 to September 2008, and served on the board of directors of the Radford University Foundation, Inc. from September 1998 to May 2011. He served on the board of visitors of the University of Virginia and Affiliated Schools from July 2009 to October 2012, on the Virginia Advisory Council on Revenue Estimates from July 2006 to October 2012 and on the Governor s Economic Development and Jobs Creation Commission from April 2010 to October 2012. Mr. Kirk received a B.A. in Business from Radford University and a J.D. from the University of Virginia. We believe that Mr. Kirk s business experience, including his extensive business experience as chief executive officer of multiple companies, his experience as an investor, his service on committees of academic institutions and other public company boards, combined with his business acumen and judgment, provide our board of directors with valuable strategic and operational expertise and leadership skills.

Krish S. Krishnan, M.S., M.B.A., Chief Operating Officer. Mr. Krishnan has served as our Chief Operating Officer since 2011. Mr. Krishnan brings many years of experience in the life sciences industry, having held key executive

roles at several companies including Chief Executive Officer of Pinnacle Pharmaceuticals, Inc. from 2009 to 2011 and, most notably, his tenure as Chief Financial Officer and Chief Operating Officer from April 2004 until April 2007,

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and a member of the board of directors from March 2003 until April 2007 of New River Pharmaceuticals, Inc. (previously traded on NASDAQ prior to its acquisition by Shire plc in 2007). Previously, he served as a Senior Managing Director of Third Security, LLC between 2001 and 2008 and as a board member of Biotie Therapies Oyj (BTH1V:Helsinki) between 2008 and 2009. Mr. Krishnan started his career as an engineer with E.I. Dupont de Nemours in Wilmington, Delaware. He received a B.S. in Mechanical Engineering from the Indian Institute of Technology, an M.S. in Engineering from the University of Toledo, and an M.B.A. in Finance from The Wharton School at the University of Pennsylvania.

Thomas D. Reed, Ph.D., Chief Science Officer and Director. Dr. Reed co-founded Intrexon in 1998 and has served as Chief Science Officer since then and has served on the board of directors since 1998. Dr. Reed is a molecular geneticist with over 20 years of experience in recombinant DNA technology. He has developed sophisticated transgenic model systems for studying the role of gene products in neuronal, cardiovascular, and cancer systems. Dr. Reed has published numerous peer-reviewed articles in the fields of subcellular modulation, gene regulation and cardiac function and is an inventor on numerous patents. Dr. Reed received his B.S. in Genetics from the University of California-Davis, an M.S. in Biological Science from Wright State University, and a Ph.D. in Molecular and Developmental Biology from the University of Cincinnati.

Rick L. Sterling, Chief Financial Officer. Mr. Sterling has served as our Chief Financial Officer since 2007. Prior to joining us, he was with KPMG where he worked in the audit practice for over 17 years, with a client base primarily in the healthcare, technology and manufacturing industries. Mr. Sterling s experience includes serving clients in both the private and public sector, including significant experience with SEC filings and Sarbanes-Oxley compliance. He received a B.S. in Accounting and Finance from Virginia Polytechnical Institute and State University and is a licensed Certified Public Accountant.

Donald P. Lehr, Chief Legal Officer. Mr. Lehr has served as our Chief Legal Officer since 2011. From 2009 to 2011 he served as our Associate General Counsel. Mr. Lehr has broad experience in the areas of corporate, securities, and general business law. Prior to joining us, he was at Hogan Lovells LLP (formerly Hogan & Hartson, LLP) in Baltimore, Maryland from 2002 to 2009. While at Hogan, his practice included the representation of privately and publicly held corporations across many industries, including biotechnology, pharmaceuticals, health care, software, technology, and manufacturing. Prior to his time at Hogan, Mr. Lehr served as a judicial clerk for the Honorable Irma S. Raker of the Court of Appeals of Maryland. Mr. Lehr received a B.A. from Swarthmore College and received a J.D. from the University of Maryland School of Law.

Suma M. Krishnan, Senior Vice President Product Development. Mrs. Krishnan has served as our Senior Vice President Product Development since 2012. From 2009 to 2011, Mrs. Krishnan served as Senior Vice President of Product Development at Pinnacle Pharmaceuticals, Inc. From 2007 to 2009, she served as Chief Financial Officer of Light Matters Foundation. Previously, Mrs. Krishnan was Vice President, Product Development at New River Pharmaceuticals Inc. from September 2002 until its acquisition by Shire plc in April 2007. Mrs. Krishnan has 22 years experience in drug development. Prior to serving at New River Pharmaceuticals Inc., Mrs. Krishnan served in the following capacities: Director, Regulatory Affairs at Shire Pharmaceuticals, Inc., a specialty pharmaceutical company; Senior Project Manager at Pfizer, Inc., a multi-national pharmaceutical company; and a consultant at the Weinberg Group, a pharmaceutical and environmental consulting firm. Mrs. Krishnan began her career as a discovery scientist for Janssen Pharmaceuticals, Inc., a subsidiary of Johnson & Johnson, a multi-national pharmaceutical company, in May 1991. Mrs. Krishnan received an M.S. in Organic Chemistry from Villanova University, an M.B.A. from Institute of Management and Research (India) and an undergraduate degree in Organic Chemistry from Ferguson University (India).

Darryl Webster, Senior Vice President, Intellectual Property. Mr. Webster has served as our Senior Vice President, Intellectual Property since 2010. Mr. Webster has over 25 years of legal experience. During his law firm experience and 20 plus years of corporate IP practice, he has worked in scientific areas that match each of the markets we are targeting. Prior to joining us, Mr. Webster was most recently Senior Patent Counsel at Wyeth Pharmaceuticals, Inc. (now Pfizer Inc.), where he worked from 1993 to 2010. During his sixteen years at Wyeth, he was the lead patent counsel for several key products and areas including a $6B biological, the Asia Pacific Region, and the Wyeth Nutrition business. Before his work at Wyeth, he worked for more than four years in the core chemical and biochemical areas at AlliedSignal Inc., now Honeywell International Inc. Mr. Webster received Bachelors degrees in Chemistry (Biological Specialization) and Economics from Duke University and a J.D. from the University of Maryland School of Law.

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Samuel Broder, M.D., Executive Vice President Scientific and Public Affairs. Dr. Broder was named as our Executive Vice President Scientific and Public Affairs in March 2014. Prior to that he served as our Chairman Health Sector from January 2014 and as our Senior Vice President Health Sector from 2012. Dr. Broder is an oncologist and medical researcher with particular expertise in the relationship between disorders of the immune system and cancer. Dr. Broder previously served as a science consultant for Intrexon from January 2012 to August 2012. Dr. Broder served as Executive Vice President for Medical Affairs and Chief Medical Officer of Celera Corporation (now a Division of Quest Diagnostics Incorporated) from 1998 to 2010. From 2010 to 2012, Dr. Broder was self-employed as an industry consultant. In the mid-1980s, Dr. Broder s laboratory played a significant role in developing the first three therapeutic agents approved by the U.S. Food and Drug Administration to treat the AIDS virus. In 1989, Dr. Broder received a Presidential appointment to serve as Director of the National Cancer Institute. Dr. Broder held this position for six years, during which time he oversaw the development of several anti-cancer therapeutic agents. Dr. Broder received both his undergraduate and medical degrees from the University of Michigan.

Thomas R. Kasser, Ph.D., Senior Vice President Food Sector. Dr. Kasser has served as Senior Vice President Food Sector since May 2013. Dr. Kasser served as President of Animal Sciences and Agricultural Biotechnology Divisions and Senior Vice President from April 2012 to May 2013 and, prior to that, as President of the Animal Sciences Division from March 2011. Dr. Kasser brings over 25 years of business management experience in the biotechnology and life sciences industries. He was most recently President and Chief Executive Officer of Angionics, Inc., an early-stage biotech company focused on novel anti-angiogenic technology directed at therapies for cancer and ocular diseases from June 2009 to March 2011. Prior to Angionics, he was a Covance Corporate Vice President and General Manager of Covance Research Products Inc. Dr. Kasser had over 20 years of experience at Monsanto Company both in commercial as well as scientific leadership roles, including tenures as General Manager of Monsanto Choice Genetics, Inc., directing new product development for the Nutrition and Consumer products business, and managing clinical safety and efficacy trials under the jurisdiction of the Food and Drug Administration s Center for Veterinary Medicine. Dr. Kasser was designated a Monsanto Fellow in recognition of his scientific and technical excellence. He currently serves on the board of directors for AquaBounty Technologies, Inc., an aquaculture biotechnology company. Dr. Kasser received an M.S. in Animal Nutrition from The Pennsylvania State University, an M.B.A. from Washington University St. Louis and a Ph.D. in Nutrition from the University of Georgia.

Robert F. Walsh, III, Senior Vice President Energy and Chemicals Sector. Mr. Walsh has served as our Senior Vice President Energy and Chemicals Sector since 2013. Mr. Walsh has over 30 years of experience in the petroleum and chemical industries. Mr. Walsh served as Chief Commercial Officer of ZeaChem Inc., a cellulosic biofuel and biochemical company, from 2011 to 2013. Prior to his time at ZeaChem, Mr. Walsh served as Chief Executive Officer of Aurora Algae, Inc., an algae production company, from 2008 to 2010, President of LS9, Inc., an industrial biotechnology company, from 2007 to 2008, Senior Vice President and Chief Operating Officer of Chemoil Corporation, from 2005 to 2006, and General Manager Supply, Europe for Shell Europe Oil Products, from 2001 to 2006. Mr. Walsh received a B.S. in Chemical Engineering from Purdue University.

Nir Nimrodi, Senior Vice President Environment Sector. Mr. Nimrodi joined Intrexon as Senior Vice President Environment Sector in March 2014. Mr. Nimrodi brings to Intrexon over 20 years of diverse international experience, in large global businesses in the life sciences, pharmaceutical, biotechnology, and diagnostics industries. Prior to joining Intrexon, Mr. Nimrodi was most recently the Vice President and General Manager of Life Technologies, Inc. Food Safety and Animal Health Business, now part of Thermo Fisher Scientific, and also served in numerous executive roles, including Chief Executive Officer and Board Member of Life Technologies Israel and Head of Protein Technologies. While at Life Technologies, he played a key part in its growth, culminating in its recent acquisition, which represents the largest transaction to-date for this space at $13.6 billion. Previously, Mr. Nimrodi held leadership positions as CEO of Proneuron Biotechnologies, Inc. and also Mindsense Biosystems, as well as Director of Finance of Teva Pharmaceutical Industries, Ltd. Before joining the life sciences industry, he served in the

Israeli Navy and worked for the Israeli Ministry of Defense. Mr. Nimrodi earned a B.A. in Economics and an M.B.A in Finance from Tel-Aviv University.

Gregory I. Frost, Ph.D., Senior Vice President Health Sector. Dr. Frost has served as Senior Vice President Health Sector, since January 2014. Dr. Frost brings to Intrexon more than 20 years of biotechnology industry and research experience in the areas of biochemistry, molecular pathology, pharmacology, and drug delivery. He was most recently Chief Executive Officer of Halozyme Therapeutics, Inc (NASDAQ: HALO), a company he co-founded in 1999, and has also served on the Board of Directors and in numerous operational roles, including Chief Scientific Officer. For more than 15 years, Dr. Frost led the research and development efforts at Halozyme from

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discovery through commercialization for a number of internal and partnered biotechnology products, as well as facilitating broad alliances with pharmaceutical companies such as Roche and Pfizer. Before co-founding Halozyme, Dr. Frost conducted research at the Sidney Kimmel Cancer Center. Prior to that, while in the Department of Pathology at the University of California, San Francisco, Dr. Frost led foundational studies to purify, clone, and characterize an enzyme gene family of human hyaluronidases. Dr. Frost received a B.A. in biochemistry and molecular biology from the University of California, Santa Cruz, and a Ph.D. in the Department of Pathology at the University of California, San Francisco.

Kelly Huang, Ph.D., Senior Vice President Consumer Sector. Dr. Huang joined Intrexon as Senior Vice President Consumer Sector in March 2014. Dr. Huang brings to Intrexon over 18 years experience leading global businesses in life sciences and consumer healthcare through integration of scientific, consumer, and professional insights to create value by putting the customer and patient at the center. Before joining Intrexon, Dr. Huang was President of HealthTronics, a subsidiary of Endo Health Solutions, and Executive Committee Member of Endo where he contributed to strategic leadership across multiple sectors since 2011. To advance Endo s solutions strategy, he broadened HealthTronics beyond surgical services into healthcare informatics through strategic acquisitions and development of analytics capabilities. Formerly, Dr. Huang spent a significant 16-year tenure with the Johnson & Johnson Family of Companies. From 2009 through 2011, he led award winning product launches in cosmetic and over-the-counter consumer products as Vice President of Research & Development and corporate officer of Neutrogena Corporation, a J&J company. As Vice President with J&J s Development Corporation from 2006 through 2009, Dr. Huang also established and headed an Internal Venture to partner with a synthetic biology company towards development of a transformational delivery platform based upon novel protein conjugates. In addition, he held leadership positions within J&J s Consumer Healthcare business, which included spending two years in Paris, France, that drove innovation globally. Dr. Huang earned a B.S. in Chemical Engineering from the University of Massachusetts, followed by an M.S. and Ph.D. in Chemical Engineering from Stanford University. He advises Spindletop Capital and is a member of the board of HealthTronics Information Technology Solutions with Altaris Capital. Dr. Huang is a member of the National Association of Corporate Directors.

PART II

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

Market Information and Holders of Record

Our common stock has been listed on the New York Stock Exchange under the symbol XON since August 8, 2013. Prior to that date, there was no public trading market for our common stock. The following table sets forth for the periods indicated the high and low sales prices per share of our common stock as reported on the New York Stock Exchange:

	High	Low
Year Ended December 31, 2013		
Fourth Quarter	$ 25.95	$ 17.52
Third Quarter (from August 8, 2013)	$ 31.44	$ 20.65

As of March 20, 2014, we had 236 holders of record of our common stock. The actual number of shareholders is greater than this number of record holders and includes shareholders who are beneficial owners but whose shares are

held in street name by brokers and other nominees. This number of holders of record also does not include shareholders whose shares may be held in trust by other entities.

Dividends

We have never declared or paid a cash dividend on our capital stock. We currently intend to retain any future earnings and do not expect to pay any dividends in the foreseeable future. Any future determinations to pay cash dividends will be made at the discretion of our board of directors, subject to applicable laws, and will depend on a number of factors, including our financial condition, results of operations, capital requirements, contractual restrictions, general business conditions, and any other factors that our board of directors may deem relevant. In addition, the terms of our credit facility currently prohibit us from paying cash dividends on our capital stock.

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Stock Performance Graph

This performance graph shall not be deemed soliciting material or to be filed with the SEC for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (Exchange Act), or otherwise subject to the liabilities under that Section, and shall not be deemed to be incorporated by reference into any filing of Intrexon Corporation under the Securities Act of 1933, as amended, or the Exchange Act.

The following graph shows a comparison from August 8, 2013 (the date our common stock commenced trading on the New York Stock Exchange) through December 31, 2013 of the cumulative total return for our common stock, the Standard & Poor s 500 Stock Index (S&P 500 Index) and the NYSE MKT ARCA Biotechnology Index. The graph assumes that $100 was invested at the market close on August 8, 2013 in the common stock of Intrexon Corporation, the S&P 500 Index and the NYSE MKT ARCA Biotechnology Index and data for the S&P 500 Index and the NYSE MKT ARCA Biotechnology Index assumes reinvestments of dividends. The stock price performance of the following graph is not necessarily indicative of future stock price performance.

Company / Index	Base Period 8/8/13	8/31/13	9/30/13	10/31/13	11/30/13	12/31/13
Intrexon Corporation	**$ 100.00**	$ 87.87	$ 95.79	$ 85.73	$ 92.56	$ 96.24
S&P 500 Index	**100.00**	96.35	99.38	103.94	107.11	109.82
NYSE MKT ARCA Biotechnology Index	**100.00**	97.32	103.12	102.37	109.44	110.29

Recent Sales of Unregistered Securities and Use of Proceeds from Registered Securities

(a) Sales of Unregistered Securities

From January 1, 2013 through August 13, 2013, we granted options to purchase an aggregate of 721,709 shares of common stock, with exercise prices ranging from $7.12 to $28.69 per share, to employees, directors and consultants pursuant to our 2008 Equity Incentive Plan and 2013 Omnibus Incentive Plan. Between January 1, 2013 and August 13, 2013, we issued an aggregate of 12,212 shares of common stock upon the exercise of options for aggregate consideration of $26,000. From January 1, 2013 through December 31, 2013, we sold 19,047,619 shares of our

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Series F preferred stock at a purchase price of $7.88 per share for aggregate gross offering proceeds of approximately $150.0 million, resulting in net proceeds to us of approximately $146.9 million after deducting issuance costs of approximately $3.1 million, including $1.8 million paid to a shareholder. In August 2013, we issued 93,924 shares of common stock upon the cashless exercise of 96,694 warrants.

The sales of the above securities were exempt from registration under the Securities Act of 1933, as amended (Securities Act), in reliance upon Section 4(2) of the Securities Act, or Rule 701 promulgated under Section 3(b) of the Securities Act as transactions by an issuer not involving any public offering or pursuant to benefit plans and contracts relating to compensation as provided under Rule 701. The recipients of the securities in each of these transactions represented their intentions to acquire the securities for investment only and not with a view to or for sale in connection with any distribution thereof, and appropriate legends were placed upon the stock certificates issued in these transactions.

(b) Use of Proceeds

On August 7, 2013, our registration statement on Form S-1 (File No. 333-189853) was declared effective by the Securities and Exchange Commission for our initial public offering pursuant to which we sold an aggregate of 11,499,998 shares of our common stock (inclusive of 1,499,999 shares of common stock sold by us pursuant to the full exercise of an overallotment option granted to the underwriters in connection with the offering) at a price to the public of $16.00 per share for aggregate gross offering proceeds of approximately $184.0 million. J.P. Morgan Securities LLC and Barclays Capital Inc. acted as joint book-running managers. On August 13, 2013, we closed the sale of such shares, resulting in net proceeds to us of approximately $168.3 million after deducting underwriting discounts and commissions of approximately $12.9 million and other offering expenses of approximately $2.8 million. No payments were made by us to directors, officers or persons owning ten percent or more of our common stock or to their associates, or to our affiliates. We invested the funds received in cash equivalents and other short-term and long-term investments in accordance with our investment policy. There has been no material change in the planned use of proceeds from our initial public offering as described in our final prospectus, dated August 7, 2013, and filed with the Securities and Exchange Commission on August 8, 2013 pursuant to Rule 424(b).

(c) Issuer Purchases of Equity Securities

None.

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Item 6. Selected Financial Data

The following table sets forth our selected consolidated financial data for the periods and as of the dates indicated. You should read the following selected consolidated financial data in conjunction with our audited consolidated financial statements and the related notes thereto included elsewhere in this Annual Report and the Management s Discussion and Analysis of Financial Condition and Results of Operations section of this Annual Report.

The consolidated statement of operations data for the years ended December 31, 2013, 2012 and 2011, and the consolidated balance sheet data as of December 31, 2013, 2012 and 2011, are derived from our audited consolidated financial statements included elsewhere in this Annual Report. All previously reported share and per share amounts of our common stock, including shares of common stock underlying stock options and warrants, throughout this Annual Report have been retroactively adjusted to reflect our 1-for-1.75 reverse stock split of our shares of common stock effective on July 26, 2013. Our audited and unaudited consolidated financial statements have been prepared in U.S. dollars in accordance with U.S. GAAP.

Our historical results for any prior period are not necessarily indicative of results to be expected in any future period, and our results for any interim period are not necessarily indicative of results to be expected for a full fiscal year.

	Year ended December 31,		
	2013	2012	2011
	(In thousands, except share and per share amounts)		
Statement of Operations Data:			
Collaboration revenues	$ 23,525	$ 13,706	$ 5,118
Total revenues	23,760	13,774	8,013
Total operating expenses	81,783	88,931	90,440
Operating loss	(58,023)	(75,157)	(82,427)
Net loss	(40,908)	(81,874)	(85,280)
Net loss attributable to noncontrolling interests	1,928		
Net loss attributable to Intrexon	(38,980)	(81,874)	(85,280)
Accretion of dividends on redeemable convertible preferred stock, not declared	(18,391)	(21,994)	(13,868)
Net loss attributable to common shareholders	(57,371)	(103,868)	(99,148)
Net loss attributable to common shareholders per share, basic and diluted	$ (1.40)	$ (18.77)	$ (18.92)
Weighted average shares outstanding, basic and diluted	40,951,952	5,533,690	5,240,647

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	2013(3)	December 31, 2012(2)	2011
		(In thousands)	
Balance Sheet Data:			
Cash and cash equivalents	$ 49,509	$ 10,403	$ 19,628
Short-term and long-term investments	188,561	260	258
Equity securities	141,525	83,116	39,097
Total assets	469,472	151,646	114,828
Deferred revenue, current and non-current	73,571	58,636	16,921
Other liabilities(1)	14,558	7,904	17,485
Redeemable convertible preferred stock		406,659	301,681
Total Intrexon shareholders equity (deficit)	366,722	(321,553)	(221,259)
Noncontrolling interests	14,621		
Total equity (deficit)	381,343	(321,553)	(221,259)

(1) Other liabilities include $40, $91 and $168 related to capital leases as of December 31, 2013, 2012 and 2011, respectively, and $1,653 of long term debt as of December 31, 2013.
(2) We acquired four businesses in 2011: Agarigen, Inc. on January 26, 2011; Neugenesis Corporation on April 18, 2011; GT Life Sciences, Inc. on October 5, 2011; and Immunologix, Inc. on October 21, 2011.
(3) In 2013, we acquired ownership interests in AquaBounty and BioPop which resulted in our gaining control over these entities, resulting in consolidation effective on the acquisition dates.

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

The following discussion and analysis of financial condition and results of operations is provided to enhance the understanding of, and should be read in conjunction with, Part I, Item 1, Business and Item 8, Financial Statements and Supplementary Data. For information on risks and uncertainties related to our business that may make past performance not indicative of future results, or cause actual results to differ materially from any forward-looking statements, see Special Note Regarding Forward-Looking Statements, and Part I, Item 1A, Risk Factors.

Overview

We believe Intrexon is a leader in the field of synthetic biology, an emerging and rapidly evolving discipline that applies engineering principles to biological systems. Using our suite of proprietary and complementary technologies, we design, build and regulate gene programs, which are DNA sequences that consist of key genetic components. A single gene program or a complex, multi-genic program are fabricated and stored within a DNA vector. Vectors are segments of DNA used as a vehicle to transmit genetic information. DNA vectors can, in turn, be introduced into cells in order to generate a simple or complex cellular system, which are the basic and complex cellular activities that take place within a cell and the interaction of those systems in the greater cellular environment. It is these genetically modified cell systems that can be used to produce proteins, produce small molecules, or serve as cell-based products, which enable the development of new and improved products and manufacturing processes across a variety of end markets, including healthcare, food, energy and environmental sciences. Intrexon s synthetic biology capabilities include the ability to precisely control the amount, location and modification of biological molecules to control the function and output of living cells and optimize for desired results at an industrial scale.

We have devised our business model to bring many different commercial products to market through the formation of exclusive channel collaborations, or ECCs, with collaborators that have expertise within specific industry segments. In our ECCs, we provide expertise in the engineering, creation and modification of gene programs and cellular systems, and our collaborators are responsible for providing market and product development expertise, as well as regulatory, sales and marketing capabilities. Generally, our collaborators compensate us through payment of technology access fees, royalties, milestones and reimbursement of certain costs. This business model allows us to leverage our capabilities and capital across a broader landscape of product opportunities and end markets than we would be capable of addressing on our own.

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In certain strategic circumstances, we may enter into a joint venture with an ECC collaborator. In that event, we will enter into an ECC with a joint venture entity and may contribute access to our technology, cash or both into the joint venture which we will jointly control with our ECC collaborator. Pursuant to a joint venture agreement, we may be required to contribute additional capital to the joint venture, and we may be able to receive a higher financial return than we would normally receive from an ECC to the extent that we and our ECC collaborator are successful in developing one or more products. We recently executed the first three such joint venture agreements: S & I Ophthalmic, LLC, or S & I Ophthalmic, which is a joint venture with a subsidiary of Sun Pharmaceutical Industries Ltd., or Sun Pharmaceutical Subsidiary, an international specialty pharmaceutical company focused on chronic diseases, OvaXon, LLC, or OvaXon, which is a joint venture with OvaScience, Inc., or OvaScience, a life sciences company focused on the discovery, development and commercialization of new treatments for infertility and Intrexon Energy Partners, LLC, or Intrexon Energy Partners, a joint venture with a select group of external investors, to optimize and scale-up our gas-to-liquid bioconversion platform for the production of fuels and lubricants. Alternatively, where a collaborator wishes to work with us to develop an early-stage program, we may execute a research collaboration pursuant to which we receive reimbursement for our development costs but the exclusive license rights, and related access fee, are deferred until completion of an initial research program.

In 2011, we entered into our first collaboration and have added new collaborations since then, either by entering into new agreements or expanding or adding fields to existing ECCs. To date, we have entered into 23 such agreements and expansions with 19 different counterparties, of which 21 remain active. We have 20 active ECCs, including three expansions, and one research collaboration that we anticipate could, if successful, become an ECC. Under the ECCs, we are developing products in the fields of healthcare and food. In healthcare, our ECCs include programs in oncology, anti-infectives, antibiotics and tissue repair. In food, we are working to increase the productivity and nutritional value of salmon and other fish. We are also working to establish ECCs in the areas of energy and environmental sciences. Please see Item 1, Business, for a detailed description of our material ECCs. Effective July 26, 2013, the Company s board of directors and shareholders approved a reverse stock split of 1-for-1.75 of the Company s shares of common stock. Shareholders entitled to fractional shares as a result of the reverse stock split will receive a cash payment in lieu of receiving fractional shares. Our historical share and per share information have been retroactively adjusted to give effect to this reverse stock split. Shares of common stock underlying outstanding stock options and warrants were proportionately reduced and the respective exercise prices were proportionately increased in accordance with the terms of the agreements governing such securities. Shares of common stock reserved for issuance upon the conversion of all of our Series Preferred Stock were proportionately reduced and the conversion prices were proportionately increased.

On August 13, 2013, we completed our initial public offering, or IPO, whereby we sold 11,499,998 shares of common stock (inclusive of 1,499,999 shares of common stock sold by us pursuant to the full exercise of an overallotment option granted to the underwriters in connection with the offering) at a price of $16.00 per share. The shares began trading on the NYSE on August 8, 2013. The aggregate net proceeds received by us from the IPO were $168.3 million, net of underwriting discounts and commissions and estimated offering expenses payable by us. Upon the closing of the IPO, all outstanding shares of convertible preferred stock, including accrued but unpaid dividends thereon, converted into 79,705,130 shares of common stock. Additionally, in connection with the closing of the IPO, we amended and restated our articles of incorporation pursuant to which we are now authorized to issue 200,000,000 shares of common stock and 25,000,000 shares of undesignated preferred stock.

Mergers and acquisitions

We completed several acquisitions in 2011 in order to enhance our capabilities and service offerings. On January 26, 2011, we acquired Agarigen, Inc., or Agarigen, a North Carolina-based company that allowed us to expand our capabilities in the agricultural sector. On August 31, 2011, we acquired the LEAP platform technology from

Cyntellect, Inc., or Cyntellect. On October 5, 2011, we acquired the cell systems informatics technology from GT Life Sciences, Inc., or GT Life. On October 21, 2011, we acquired the mAbLogix antibody platform from Immunologix, Inc. or Immunologix. See the footnotes to our audited consolidated financial statements found in Item 8 for additional information with respect to the material business combinations. See also Item 1, Business Our suite of proprietary and complementary technologies.

On November 16, 2012, we acquired 48,631,444 shares of common stock of AquaBounty Technologies, Inc., or AquaBounty, representing 47.56 percent of the then outstanding shares of AquaBounty, through a definitive purchase agreement with an existing AquaBounty shareholder and its affiliate. We originally accounted for our investment in AquaBounty using the equity method. On March 15, 2013, we acquired 18,714,814 additional shares

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of AquaBounty common stock increasing our aggregate ownership in AquaBounty to 53.82 percent, resulting in us gaining control over AquaBounty. AquaBounty was consolidated on our results of operations and financial position beginning on March 15, 2013. On March 20, 2014, we acquired 19,040,366 additional shares of AquaBounty common stock increasing our aggregate ownership in AquaBounty to 59.85 percent.

On October 1, 2013, we acquired 4,163,265 shares of common stock of Biological & Popular Culture, Inc., or BioPop, representing 51.00 percent of the outstanding shares of BioPop, resulting in us gaining control over BioPop. BioPop was consolidated on our results of operations and financial position beginning on October 1, 2013.

On March 6, 2014, we acquired California-based Medistem, Inc., or Medistem, a pioneer in the development of Endometrial Regenerative Cells, or ERCs, universal donor adult stem cells that stimulate new blood vessel formation and are capable of generating different tissues included heart, brain, pancreas, liver, bone, cartilage and lung. We intend to employ our synthetic biology platforms to engineer a diverse array of cell-based therapeutic candidates using Medistem s multipotent ERCs. We will consolidate Medistem s results of operations and financial position effective March 6, 2014.

Financial overview

We have incurred significant losses since our inception. We anticipate that we may continue to incur significant losses for the foreseeable future, and we may never achieve or maintain profitability. We have never generated any royalty revenues from sales of products by our collaborators and may never be profitable.

We expect our future capital requirements will be substantial, particularly as we continue to develop our business and expand our synthetic biology technology platform. We believe that our existing cash and cash equivalents; short-term and long-term investments; and cash expected to be received through our current collaborators will enable us to fund our operating expenses and capital expenditure requirements for at least the next 12 months.

Sources of revenue

We derive our revenues through the execution of ECCs for the development and commercialization of products enabled by our technologies. Generally, the terms of our ECCs provide that we receive some or all of the following: (i) technology access fees upon consummation of such ECC; (ii) reimbursements of costs incurred by us for our research and development and/or manufacturing efforts related to the specific application provided for in the ECC; (iii) milestone payments upon the achievement of specified development, regulatory and commercial activities; and (iv) royalties on sales of products arising from the collaboration.

Our technology access fees and milestone payments may be in the form of cash or securities of the collaborator. Because our ECCs contain multiple arrangements, we typically defer much of the technology access and milestone payments received and recognize such revenues in the future over the anticipated performance period. We are also entitled to sublicensing revenues in those situations where our collaborators choose to license our technologies to other parties.

In future periods, our revenues will depend on the number of ECCs into which we enter, the advancement and creation of programs within our ECCs and the extent to which our collaborators bring products enabled by our technologies to market. Our revenues will also depend on the ability of AquaBounty to receive regulatory approval and establish successful commercialization of its AquAdvantage Salmon products. In light of our limited operating history and experience in consummating new ECCs, there can be no assurance as to the timing, magnitude and predictability of revenues to which we might be entitled.

In certain strategic circumstances, we may enter into a joint venture with an ECC collaborator whereby we will enter into an ECC with a joint venture entity and both parties may contribute access to their technology, cash or both into the joint venture and jointly control the joint venture. Pursuant to a joint venture agreement, we may be required to contribute additional capital to the joint venture, and we may be able to receive a higher financial return than we would normally receive from an ECC to the extent that we and our ECC collaborator are successful in developing one or more products.

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Research and development expenses

We recognize research and development expenses as they are incurred. Our research and development expenses consist primarily of:

- salaries and related overhead expenses, including stock-based compensation expense, for personnel in research and development functions;
- fees paid to consultants and contract research organizations who perform research on our behalf and under our direction;
- costs related to laboratory supplies used in our research and development efforts;
- depreciation of leasehold improvements, laboratory equipment and computers;
- amortization of patents and related technologies acquired in mergers and acquisitions;
- rent and utility costs for our research and development facilities; and
- costs related to stock options granted to personnel in research and development functions.

We have no individually significant research and development projects and our research and development expenses primarily relate to either the costs incurred to expand or otherwise improve our multiple platform technologies or the costs incurred to develop a specific application of our technologies in support of current or prospective collaborators. Research and development expenses typically do not include significant development, including pre-clinical or clinical development, activities since they are the responsibility of our collaborators. Research and development expenses incurred for programs we support pursuant to an ECC agreement are reimbursed by the collaborator at cost and all other research and development programs may be terminated or otherwise deferred at our discretion. The amount of our research and development expenses may be impacted by, among other things, the number of ECCs and the number and size of programs we may support on behalf of an ECC.

The table below summarizes our research and development expenses incurred to expand or otherwise improve our multiple platform technologies or the costs incurred to develop a specific application of our technologies in support of current or prospective collaborators for the years ended December 31, 2013, 2012, and 2011. Other research and development expenses for these periods include indirect salaries and overhead expenses that are not allocated to either expanding or improving our multiple platform technologies or specific applications of our technologies in support of current or prospective collaborators.

	2013	**2011**

	Years ended 2012 (In thousands)		
Expansion or improvement of our platform technologies	$ 16,327	$ 35,075	$ 32,603
Specific applications of our technologies in support of current and prospective collaborators	21,688	17,078	22,678
Other	10,150	11,881	14,947
Total research and development expenses	$ 48,165	$ 64,034	$ 70,228

We expect that our research and development expenses will increase as we continue to enter into ECCs and operate as a public company. We believe these increases will likely include increased costs related to the hiring of additional personnel in research and development functions, increased costs paid to consultants and contract research organizations and increased costs related to laboratory supplies.

General and administrative expenses

General and administrative expenses consist primarily of salaries and related costs, including stock-based compensation expense, for employees in executive, operational, finance, information technology and legal functions. Other significant general and administrative expenses include rent and utilities, insurance, legal services and expenses associated with obtaining and maintaining our intellectual property.

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We expect that our general and administrative expenses will increase as we operate as a public company. We believe that these increases will likely include increased costs for director and officer liability insurance, costs related to the hiring of additional personnel and increased fees for outside consultants, lawyers and accountants. We also expect to incur increased costs to comply with corporate governance, internal controls and similar requirements applicable to public companies.

Other income (expense), net

We hold equity securities received and/or purchased from certain collaborators. Other than investments accounted for using the equity method discussed below, we elected the fair value option to account for our equity securities held in these collaborators. These equity securities are recorded at fair value at each reporting date. Unrealized appreciation (depreciation) resulting from fair value adjustments are reported as other income (expense) in the consolidated statement of operations. As such, we bear the risk that fluctuations in the securities share prices may significantly impact our results of operations.

Interest income consists of interest earned on our cash and cash equivalents and short-term and long-term investments.

Interest expense pertains to equipment currently under four capitalized leases and long term debt held by AquaBounty.

On March 15, 2013, we recorded a gain on our previously held equity investment in AquaBounty; such gain represented the adjustment to fair value of the pro rata share of our original investment.

Equity in net income (loss) of affiliate

Equity in net loss of affiliates is our pro-rata share of our equity method investments operating results, adjusted for accretion of basis difference. Through March 15, 2013, we accounted for our investment in AquaBounty using the equity method of accounting since we had the ability to exercise significant influence, but not control, over the operating activities of AquaBounty. On March 15, 2013, we acquired additional ownership interests in AquaBounty which resulted in us gaining control over AquaBounty, thereby requiring consolidation effective on that date. We account for investments in S & I Ophthalmic and OvaXon using the equity method of accounting since we have the ability to exercise significant influence, but not control, over the operating activities of these joint ventures.

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Results of operations

Comparison of the year ended December 31, 2013 and the year ended December 31, 2012

The following table summarizes our results of operations for the years ended December 31, 2013 and 2012, together with the changes in those items in dollars and as a percentage:

	Years ended December 31,			
	2013	2012	Dollar change	% Change
		(In thousands)		
Revenues:				
Collaboration revenues	$ 23,525	$ 13,706	$ 9,819	71.6%
Other revenues	235	68	167	245.6%
Total revenues	23,760	13,774	9,986	72.5%
Operating expenses:				
Research and development	48,165	64,034	(15,869)	(24.8)%
General and administrative	33,618	24,897	8,721	35.0%
Total operating expenses	81,783	88,931	(7,148)	(8.0)%
Operating loss	(58,023)	(75,157)	17,134	(22.8)%
Total other income (expense), net	17,721	(6,443)	24,164	375.0%
Equity in loss of affiliates	(606)	(274)	(332)	121.2%
Net loss	(40,908)	(81,874)	40,966	50.0%
Net loss attributable to noncontrolling interest	1,928		1,928	100.0%
Net loss attributable to Intrexon	$ (38,980)	$ (81,874)	$ 42,894	52.4%

Revenues

Total revenues were $23.8 million for the year ended December 31, 2013 compared to $13.8 million for the year ended December 31, 2012, an increase of $10.0 million, or 72.5 percent. The following table shows the collaboration revenue recognized for upfront and milestone payments received from our collaborators and reimbursements received for research and development services provided to our collaborators for the years ended December 31, 2013 and 2012, together with the changes in those items:

Upfront and milestone payments		Research and development services		Total	
Years ended December 31,		Years ended December 31,		Years ended December 31,	
2013	2012	2013	2012	2013	2012

			Dollar change			Dollar change			Dollar change
				(In thousands)					
ZIOPHARM Oncology, Inc.	$ 2,577	$ 5,068	$ (2,491)	$ 7,818	$ 6,333	$ 1,485	$ 10,395	$ 11,401	$ (1,006)
Synthetic Biologics, Inc.	2,187	293	1,894	1,048	327	721	3,235	620	2,615
Oragenics, Inc.	673	320	353	1,517	516	1,001	2,190	836	1,354
Fibrocell Science, Inc.	970	158	812	3,736	61	3,675	4,706	219	4,487
Genopaver, LLC	204		204	935		935	1,139		1,139
S & I Ophthalmic, LLC				417		417	417		417
Other	333	12	321	1,110	618	492	1,443	630	813
Total	$ 6,944	$ 5,851	$ 1,093	$ 16,581	$ 7,855	$ 8,726	$ 23,525	$ 13,706	$ 9,819

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The $9.8 million increase in collaboration revenue resulted primarily from the following items:

- Collaboration revenue recognized for upfront and milestone payments received from ZIOPHARM Oncology, Inc., or ZIOPHARM, decreased primarily due to the recognition of deferred revenue related to the achievement of a collaboration milestone of $18.3 million in October 2012. Reimbursements from research and development services provided to ZIOPHARM increased $1.5 million in 2013 compared to 2012 as a result of new programs initiated throughout the second half of 2012 and the first half of 2013;

- Collaboration revenue for upfront payments received from Synthetic Biologics, Inc., or Synthetic Biologics, increased due to the immediate recognition of previously deferred revenue arising from our first Synthetic Biologics ECC. In April 2013, we and Synthetic Biologics agreed to terminate this ECC and as a result, we recognized the balance of deferred revenue of $1.5 million associated with the original upfront consideration received by us. Reimbursements for research and development services provided to Synthetic Biologics increased $0.7 million in 2013 compared to 2012 due primarily to the work performed pursuant to the second ECC which was consummated in the second half of 2012;

- Our first ECC with Oragenics, Inc., or Oragenics, commenced in June 2012 and our second ECC with Oragenics commenced in September 2013. Our research and development services provided during 2013 and 2012 have primarily consisted of research on improving production in the field specified in the first ECC and developing and validating these improved production methods;

- Our ECC with Fibrocell Science, Inc., or Fibrocell, commenced in October 2012 and we expanded that collaboration in the June 2013; and

- We have executed additional collaborations, including ECCs with Genopaver, LLC and S & I Ophthalmic, in 2013 which collectively resulted in an additional $0.5 million in collaboration revenue from upfront payments and $2.0 million in research and development services.

Research and development expenses

Research and development expenses were $48.2 million for the year ended December 31, 2013 compared to $64.0 million for the year ended December 31, 2012. The $15.9 million decrease in research and development expenses is primarily the result of the following:

- Salaries, benefits and other personnel expenses decreased $7.9 million to $21.5 million for the year ended December 31, 2013 from $29.4 million for the year ended December 31, 2012. The decrease is primarily related to a decrease in the number of employees in 2013 compared to 2012. Throughout 2012 and the first half of 2013, we eliminated certain positions due to improvements in our production processes as well as our reliance on additional automation. We also transitioned from a primary emphasis on building our parts inventory and other platforms towards applying such platforms towards specific applications for the benefit of our current and prospective collaborators. We also consolidated and centralized certain research and

development functions to eliminate redundancies;

Expenses related to consultants and third party contract research organizations decreased $0.8 million to$4.7 million for the year ended December 31, 2013 from $5.5 million for the year ended December 31, 2012. The decrease is the result of our continuing efforts to reduce the level of research and development performed by third parties and, where practical, perform this research and development internally; and

Lab supply expenses decreased $4.8 million to $5.6 million for the year ended December 31, 2013 from $10.4 million for the year ended December 31, 2012. Supplies used in DNA manufacturing decreased $3.8 million in 2013 compared to 2012. We transitioned from building our parts inventory towards applying our technologies for the benefit of current and prospective collaborators. The remaining decrease in lab supplies is the result of centralizing certain research and development functions.

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General and administrative expenses

General and administrative expenses increased $8.7 million to $33.6 million for the year ended December 31, 2013 compared to $24.9 million for the year ended December 31, 2012. The $8.7 million increase is primarily the result of an increase in salaries, benefits and other personnel expenses of $4.7 million to $17.9 million in 2013 from $13.2 million in 2012. This increase is primarily the result of our hiring of additional employees as we prepared to become a public company, increased performance bonuses due to, among other items, the successful completion of our IPO and for the cost of AquaBounty employees after we began consolidating AquaBounty on March 15, 2013. Legal and professional expenses increased $2.4 million in 2013 compared to 2012 due to costs associated with becoming a public company and merger and acquisitions activity, including the formation of two joint ventures. The remaining increase in general and administrative expenses in 2013 is the result of additional costs for accounting and auditing fees, directors and officers insurance, exchange listing fees, and other costs that are directly related to being a public company.

Total other income (expense), net

Total other income (expense), net is primarily comprised of unrealized appreciation (depreciation) in fair value of equity securities which was $10.4 million for the year ended December 31, 2013 compared to $(6.3) million for the year ended December 31, 2012. The unrealized appreciation (depreciation) is the result of market change for the equity securities we hold in certain of our collaborators. Total other income (expense), net for the year ended December 31, 2013 includes a $7.4 million gain on our previously held equity interest in AquaBounty triggered by the requirement to consolidate AquaBounty as of March 15, 2013.

Equity in net loss of affiliates

Equity in net loss of affiliates for the years ended December 31, 2013 and 2012 includes our pro-rata share of the net losses of our investments we account for by the equity method of accounting. In 2012 and through March 15, 2013, we accounted for our investment in AquaBounty using the equity method of accounting. Commencing upon their formation in 2013, our investments in S & I Ophthalmic and OvaXon, are accounted for using the equity method of accounting.

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Comparison of the year ended December 31, 2012 and the year ended December 31, 2011

The following table summarizes our results of operations for the years ended December 31, 2012 and 2011, together with the changes in those items in dollars and as a percentage:

	Years ended December 31,			
	2012	2011	Dollar change	% Change
	(In thousands)			
Revenues:				
Collaboration revenues	$ 13,706	$ 5,118	$ 8,588	167.8%
Other revenues	68	2,895	(2,827)	(97.7)%
Total revenues	13,774	8,013	5,761	71.9%
Operating expenses:				
Research and development	64,034	70,228	(6,194)	(8.8)%
General and administrative	24,897	18,300	6,597	36.0%
Other operating expenses		1,912	(1,912)	(100.0)%
Total operating expenses	88,931	90,440	(1,509)	(1.7)%
Operating loss	(75,157)	(82,427)	7,270	(8.8)%
Total other expense, net	(6,443)	(2,853)	(3,590)	125.8%
Equity in net loss of affiliate	(274)		(274)	100.0%
Net loss	$ (81,874)	$ (85,280)	$ 3,406	(4.0)%

Revenues

Revenues were $13.8 million for the year ended December 31, 2012 compared to $8.0 million for the year ended December 31, 2011 resulting in an increase of $5.8 million, or 71.9 percent. The following table shows the collaboration revenue recognized for upfront and milestone payments received from each of our collaborators and reimbursements received for research and development services provided to each of our collaborators for the years ended December 31, 2012 and 2011, together with the changes in those items:

	Upfront and milestone payments Years ended December 31,			Research and development services Years ended December 31,			Total Years ended December 31,		
	2012	2011	Dollar change	2012	2011	Dollar Change	2012	2011	Dollar Change
	(In thousands)								
ZIOPHARM Oncology, Inc.	$ 5,068	$ 2,372	$ 2,696	$ 6,333	$ 2,724	$ 3,609	$ 11,401	$ 5,096	$ 6,305

Synthetic Biologics, Inc.	293	22	271	327		327	620	22	598
Elanco, Inc.	12		12	587		587	599		599
Oragenics, Inc.	320		320	516		516	836		836
Fibrocell Science, Inc.	158		158	61		61	219		219
Other				31		31	31		31
Total	$ 5,851	$ 2,394	$ 3,457	$ 7,855	$ 2,724	$ 5,131	$ 13,706	$ 5,118	$ 8,588

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The $8.6 million increase in collaboration revenue from 2011 to 2012 is the result of the following:

- Collaboration revenue recognized for upfront and milestone payments received from ZIOPHARM increased in 2012 primarily as a result of a collaboration milestone being achieved in October 2012. We received $18.3 million of milestone consideration and recognized $3.8 million as collaboration revenue in 2012. The milestone was not deemed substantive and the remaining $14.5 million of milestone consideration was recorded as deferred revenue and will be recognized over the expected life of our technology platform using a straight-line approach. Reimbursements from research and development services provided to ZIOPHARM increased $3.6 million in 2012 as a result of an increase of new programs initiated in 2012 with ZIOPHARM under our collaboration and continued progression of the research for the collaboration programs initiated in 2011;

- Collaboration revenue for upfront payments received from Synthetic Biologics increased in 2012 as a result of a full year of revenue from the amortization of the upfront payment received for our first ECC with Synthetic Biologics in November 2011 as well as a partial year of revenue from the upfront payment received for our second ECC with Synthetic Biologics in August 2012. Our research and development services provided in 2012 have primarily consisted of initial research of the fields specified in the ECCs;

- Our ECC with Elanco, the animal health division of Eli Lilly and Company, or Elanco, commenced in late November 2011 and we began providing research and development services in 2012; and

- Our ECC with Oragenics commenced in June 2012 and we have recognized $0.3 million of collaboration revenue from the amortization of the upfront payment received upon the execution of the ECC. Our research and development services provided in 2012 have primarily consisted of research on improving production in the field of use specified in the ECC and developing and validating these improved production methods.

Our 2011 amounts of other revenues include $2.7 million of revenue related to Cyntellect.

Research and development expenses

Research and development expenses were $64.0 million for the year ended December 31, 2012 compared to $70.2 million for the year ended December 31, 2011 resulting in a decrease of $6.2 million, or 8.8 percent. The $6.2 million net decrease in research and development expenses is the result of the following:

- Expenses related to licensing agreements for in-licensed technologies were $1.8 million for the year ended December 31, 2012 compared to $9.3 million for the year ended December 31, 2011 resulting in a decrease of $7.5 million. In 2011, we entered into an exclusive licensing agreement with Halozyme Therapeutics, Inc., or Halozyme, for the use of Halozyme s proprietary enzyme. Under the terms of the agreement, we paid a license fee of $9.0 million upon execution of this agreement, which was expensed when paid in 2011. In 2012, we paid and expensed an annual exclusivity fee of $1.0 million. This decrease was offset by an increase in contractual payments for other license agreements;

Expenses related to consultants and third party contract research organizations were $5.5 million for the year ended December 31, 2012 compared to $10.8 million for the year ended December 31, 2011 resulting in a decrease of $5.3 million. The decrease in 2012 is the result of our reducing the level of research and development being performed by third parties and, where practical, performing this research and development internally;

Laboratory supply expenses were $10.4 million for the year ended December 31, 2012, compared to $11.9 million for the year ended December 31, 2011, resulting in a decrease of $1.5 million. Supplies used in DNA manufacturing in 2012 decreased $2.6 million as we improved the efficiency of our production process and reduced the potential for manufacturing errors. We also transitioned away from focusing on building our parts inventory towards manufacturing specific DNA parts for current and prospective collaborators. This decrease was partially offset by an increase of $1.1 million in additional supplies required for those technologies which we acquired in 2011;

Salaries, benefits and other personnel expenses were $29.4 million for the year ended December 31, 2012, compared to $24.8 million for the year ended December 31, 2011, resulting in an increase of $4.6 million. Of this increase, $3.4 million was the result of an increase in the average number of research and development employees of 26 employees from 2011 to 2012 as we expanded the capabilities acquired through merger and acquisition activity in 2011 and developed specific capabilities to support new and prospective collaborators. We also incurred $1.2 million of performance bonuses in 2012 and we paid no bonuses to employees in 2011;

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Depreciation and amortization expense was $7.2 million for the year ended December 31, 2012, compared to $3.2 million for the year ended December 31, 2011, resulting in an increase of $4.0 million. Amortization expense for the patents and related technologies acquired in 2011 increased $1.8 million in 2012 as a result of a full year of amortization. The remaining increase is related to increased depreciation expense on property and equipment purchased in 2012 as well as a full year of depreciation for equipment acquired in 2011. We purchased $7.5 million and $13.0 million of property and equipment in 2012 and 2011, respectively, to scale up our DNA manufacturing capacity and for use in new facilities for our agricultural and industrial operations;

Rent and utilities expenses were $5.4 million for the year ended December 31, 2012, compared to $4.3 million for the year ended December 31, 2011, resulting in an increase of $1.1 million. The increase is due to a full year of rent incurred related to the addition of four new research and development facilities as a result of our acquisitions; and

Our 2011 amounts include $1.2 million of research and development expenses related to Cyntellect.

General and administrative expenses

General and administrative expenses were $24.9 million for the year ended December 31, 2012 compared to $18.3 million for the year ended December 31, 2011 resulting in an increase of $6.6 million, or 36.0 percent. The $6.6 million net increase in general and administrative expenses is the result of the following:

Salaries, benefits and other personnel expenses were $13.2 million for the year ended December 31, 2012, compared to $5.3 million for the year ended December 31, 2011, resulting in an increase of $7.9 million. Of this increase, $5.2 million was the result of an increase in the average number of general and administrative employees of 16 employees from 2011 to 2012, which was primarily the result of increasing our general and administrative personnel to support our acquired operations and additional collaborators. In addition to our increase in general and administrative employees, our non-employee, non-compensated Chief Executive Officer began serving the role on a full-time basis at the beginning of 2012, resulting in a non-cash increase to our general and administrative expenses of $1.4 million. Lastly, we paid bonuses of $1.3 million for 2012 whereas we did not pay bonuses for 2011;

Legal and professional fees were $6.4 million for the year ended December 31, 2012, compared to $9.1 million for the year ended December 31, 2011, resulting in a decrease of $2.7 million. These expenses in 2012 and 2011 are primarily comprised of fees for external legal counsel, obtaining and maintaining patents and intellectual property, assistance with ECC transactions, external consulting and recruiting services. The decrease in these expenses is primarily the result of the lack of merger and acquisition activity in 2012; and

Our 2011 amounts include $0.1 million of general and administrative expenses related to Cyntellect.

Other operating expenses

Other operating expenses of $1.9 million for the year ended December 31, 2011 relate to Cyntellect.

Total other expense, net

Total other expense, net is primarily comprised of unrealized depreciation in fair value of equity securities which was $(6.3) million for the year ended December 31, 2012 compared to unrealized depreciation of $(2.7) million for the year ended December 31, 2011 resulting in a change of $3.6 million. This change is the result of market depreciation as of December 31, 2012 for the equity securities we hold in our collaborators.

Equity in net income (loss) of affiliate

In November 2012, we purchased a 47.56 percent interest in AquaBounty and through December 31, 2012, we accounted for this investment using the equity method. Our equity in net loss of AquaBounty s operations for the period subsequent to investment through December 31, 2012 of $0.3 million reflects our portion of the net losses of AquaBounty for the period from the date of our investment through December 31, 2012.

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Liquidity and capital resources

Sources of liquidity

We have incurred losses from operations since our inception in 1998 and as of December 31, 2013, we had an accumulated deficit of $376.4 million. From our inception through December 31, 2013, we have funded our operations principally with the proceeds received from the sale of $509.5 million of our preferred stock, net proceeds from our IPO of $168.3 million and the receipt of $12.5 million in prepayments of research and development services by our collaborators. As of December 31, 2013, we had cash and cash equivalents of $49.5 million and short-term and long-term investments of $188.6 million. Cash in excess of immediate requirements is invested primarily in money market funds, certificates of deposits, U.S. government debt securities and commercial paper in order to maintain liquidity and capital preservation.

Cash flows

The following table sets forth the significant sources and uses of cash for the periods set forth below:

	Years ended December 31.		
	2012	2013	2011
	(In thousands)		
Net cash provided by (used in):			
Operating activities	$ (53,683)	$ (61,529)	$ (81,758)
Investing activities	(223,663)	(23,636)	(64,097)
Financing activities	316,451	75,940	148,111
Effect of exchange rate changes on cash and cash equivalents	1		
Net increase (decrease) in cash and cash equivalents	$ 39,106	$ (9,225)	$ 2,256

Cash flows from operating activities:

Net cash used in operating activities of $53.7 million during the year ended December 31, 2013 resulted from our $40.9 million net loss and noncash items which primarily included (i) our unrealized appreciation on equity securities of $10.4 million and (ii) our $7.4 million gain on our previously held equity interest in AquaBounty. Net cash used in operating activities of $61.5 million during the year ended December 31, 2012 resulted from our $81.9 million net loss, unrealized depreciation on equity securities of $6.3 million and the receipt of $12.5 million from two of our collaborators for a prepayment of research and development services. Net cash used in operating activities of $81.8 million during the year ended December 31, 2011 resulted from our $85.3 net loss and non-cash charges such as depreciation and amortization and unrealized depreciation on equity securities.

Cash flows from investing activities:

Net cash used in investing activities was $223.7 million for the year ended December 31, 2013. During 2013, we invested cash received from our Series F financing and our IPO to purchase $234.0 million of U.S. government debt securities, commercial paper and certificates of deposit and used $28.7 million to purchase shares of common stock of certain of our collaborative partners. These cash outflows were offset by $45.0 million received upon the maturation

of short-term investments in 2013. Net cash used in investing activities was $23.6 million for the year ended December 31, 2012. During 2012, we paid $10.0 million to purchase shares of common stock of one of our collaborative partners and we used $7.5 million for property and equipment purchases primarily to expand certain of our lab facilities. Net cash used in investing activities was $64.1 million for the year ended December 31, 2011. During 2011, we used $28.7 million, net of cash received, to pay for the acquisitions of four businesses, we used $22.6 million to purchase shares of common stock of one of our collaborative partners and we used $13.0 million for property and equipment purchases primarily to scale up our DNA manufacturing capacity.

Cash flows from financing activities:

Net cash provided by financing activities was $316.5 million for the year ended December 31, 2013. During 2013, we received $146.9 million of net proceeds from the sale of our Series F Preferred Stock and $168.8 million

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of net proceeds from our IPO. Net cash provided by financing activities was $75.9 million for the year ended December 31, 2012. During 2012, we received $75.5 million of net proceeds from the sale of our Series E Redeemable Convertible Preferred Stock. Net cash provided by financing activities was $148.1 million for the year ended December 31, 2011. During 2011, we received $26.4 million of proceeds from the issuance from the issuance of our Series D Redeemable Convertible Preferred Stock, $99.2 million of net proceeds from the issuance of our Series E Preferred Stock, proceeds from the issuance of short-term borrowings, which, along with accrued interest, converted into $15.2 million of Series E Preferred Stock and $7.4 million of subscriptions for our Series E Preferred Stock.

Future capital requirements

We established our current strategy and business model of commercializing our technologies through collaborations in 2010 and we consummated our first ECC in January 2011. Through December 31, 2013 we received from our ECCs (i) upfront and milestone consideration totaling $87.4 million, of which $72.2 million has been deferred and will be recognized over future periods; and (ii) reimbursement of our costs incurred for work performed on behalf of our collaborators of $27.2 million. We believe that we will continue to consummate ECCs with new companies across our various market sectors, which will result in additional upfront, milestone and cost recovery payments in the near future.

We believe that our existing cash and cash equivalents and short-term and long-term investments and cash expected to be received through our current collaborators will enable us to fund our operating expenses and capital expenditure requirements for at least the next 12 months.

We have based our estimates on assumptions that may prove to be wrong, and we may use our available capital resources sooner than we currently expect. Our future capital requirements will depend on many factors, including:

- progress in our research and development programs, as well as the magnitude of these programs;
- the timing, receipt and amount of upfront, milestone and other payments, if any, from present and future collaborators, if any;
- the timing, receipt and amount of sales and royalties, if any, from our potential products;
- the timing, receipt and amount of funding under future government contracts, if any;
- our ability to maintain and establish additional collaborative arrangements and/or new business initiatives;
- the timing of regulatory approval of AquaBounty products;

the resources, time and cost required for the preparation, filing, prosecution, maintenance and enforcement of patent claims;

the costs associated with legal activities, including litigation, arising in the course of our business activities and our ability to prevail in any such legal disputes; and

the timing and extent of our obligation to participate in up to $19.0 million in equity financings of ZIOPHARM.

Until such time, if ever, as we can generate positive operating cash flows, we may finance our cash needs through a combination of equity offerings, debt financings, government or other third-party funding, strategic alliances and licensing arrangements. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interests of our common shareholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our common shareholders. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we raise additional funds through government or other third-party funding, marketing and distribution arrangements or other collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates or to grant licenses on terms that may not be favorable to us.

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Contractual obligations and commitments

The following table summarizes our significant contractual obligations and commercial commitments at December 31, 2013 and the effects such obligations are expected to have on our liquidity and cash flows in future periods:

	Total(5)	Less than 1 year(3)(4)	1-3 years	3-5 years
		(In thousands)		
Operating Leases(1)(2)	$ 11,247	$ 3,661	$ 6,095	$ 1,491
Capital Leases	35	25	10	
Capital Contribution to Joint Venture	1,500	1,500		
Total	$ 12,782	$ 5,186	$ 6,105	$ 1,491

(1) We lease our facilities and certain equipment under noncancelable operating leases.

(2) On March 4, 2014, the Company entered into a lease for lab operations. The lease term will begin on the later of September 1, 2014 or the date the facility is ready for occupancy and will terminate approximately seven years from the lease commencement date. Total aggregate rental payments are $7.8 million and are excluded from the table above. The Company is also responsible for its pro-rata share of building operating expenses.

(3) On March 6, 2014, we acquired Medistem for approximately $24.6 million in cash and our common stock. Under the terms of the agreement, Medistem stockholders received in exchange of each share of Medistem common stock $0.27 in cash and $1.08 worth of our common stock, or approximately 0.03920 shares, based on the 20-day volume-weighted average price of our common stock immediately prior to closing, pursuant to the terms of the merger agreement. The total cash consideration paid in March 2014 was approximately $4.9 million and is excluded from the table above.

(4) On March 20, 2014, we acquired 19,040,366 additional shares of AquaBounty for $10.0 million in a private subscription offering, thereby increasing our ownership in AquaBounty to 59.85 percent upon closing. This amount is excluded from the table above.

(5) In conjunction with the formation of our joint venture with Intrexon Energy Partners in March 2014, we committed to make future capital contributions of up to $25.0 million to the joint venture, at the request of Intrexon Energy Partners Board of Managers and subject to certain limitations. These future capital contributions are excluded from the table above.

In addition to the obligations in the table above, as of December 31, 2013 we also have the following significant contractual obligations described below.

In conjunction with our ECC with ZIOPHARM in 2011, we agreed to purchase up to $50.0 million of ZIOPHARM common stock in conjunction with securities offerings that may be conducted by ZIOPHARM in the future, subject to certain conditions and limitations. We purchased $10.0 million in each of 2013 and 2012 and $11.0 million in 2011 of ZIOPHARM common stock in such securities offerings. The remaining obligation on this purchase commitment is approximately $19.0 million at December 31, 2013. This amount is not included in the table above due to the fact that the timing of such securities purchases cannot be predicted.

In June 2011, we entered into an exclusive licensing agreement with Halozyme for the use of Halozyme s proprietary enzyme in one of our targeted therapeutics. We are related parties with Halozyme through common ownership by Third Security, LLC. Under the terms of this agreement, we are required to pay a non-refundable, annual exclusivity fee of $1.0 million on each anniversary of the agreement effective date until a certain development event occurs. The agreement requires us to pay up to $54.0 million of milestone payments upon the achievement of certain regulatory events. We are obligated to pay tiered royalties on net sales of an approved product developed with Halozyme s proprietary enzyme. We may terminate this agreement in whole or on a product-by-product basis at any time upon 30 days prior written notice to Halozyme. No payments related to this agreement are included in the table above due to the uncertainties surrounding the number of annual payments that will be required and the unpredictability of the timing and likelihood of achieving the milestones.

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We acquired 100 percent of the outstanding capital stock of Immunologix in October 2011. The transaction included a contingent consideration arrangement which may require us to pay the selling shareholders 50 percent, subject to a maximum of $2.0 million, of revenue generated from Immunologix s technology applied towards a specific target as defined in the agreement up to a maximum of $2.0 million. This amount is not included in the table above due to the uncertainty of whether, if ever, we will pay this contingent consideration.

In December 2012, we received $2.5 million from Synthetic Biologics as prepayment of research and development services to be provided to Synthetic Biologics. Any remaining balance of this prepayment is refundable to Synthetic Biologics in the event our August 2012 ECC is terminated. Synthetic Biologics may voluntarily terminate the ECC upon 90 days written notice to us provided that no voluntary termination by Synthetic Biologics can be made during the first 18 months of the ECC. The remaining balance of this prepayment is $1.3 million at December 31, 2013 and is not included in the table above due to the uncertainty of the timing of the performance of these services by us and the unlikely termination of the ECC by either party.

We are also party to in-licensed research and development agreements with various academic and commercial institutions where we could be required to make future payments for annual maintenance fees as well as for milestones and royalties we might receive upon commercial sales of products which incorporate their technologies. These agreements are generally subject to termination by us and therefore no amounts are included in the tables above. At December 31, 2013, we had research and development commitments with third parties totaling $2.4 million of which $1.0 had not yet been incurred.

In January 2009, AquaBounty was awarded a grant to provide funding of a research and development project from the Atlantic Canada Opportunities Agency, a Canadian government agency. The total amount available under the award is USD$2.7 million, which AquaBounty can claim over a five year period. All amounts claimed by AquaBounty must be repaid in the form of a 10 percent royalty on any products commercialized out of this research and development project until fully paid. Because the timing of commercialization is subject to regulatory approval, the timing of repayment is uncertain. As of the acquisition date, AquaBounty had claimed $2.0 million of the available funds and this amount was recorded on our audited consolidated balance sheet at its acquisition date fair value of $1.1 million. The Company accretes the difference of $0.9 million between the face value of amounts drawn and the acquisition date fair value over the expected period of repayment. Since the acquisition date and through December 31, 2013, AquaBounty has made subsequent draws of $0.5 million resulting in total long-term debt of $1.7 million as of December 31, 2013. This amount is not included in the table above due to the uncertainty of the timing of repayment.

In conjunction with the formation of a joint venture with an indirect subsidiary of Sun Pharmaceutical Industries, Ltd. in September 2013, we committed to making future capital contributions to the joint venture, subject to certain conditions and limitations, in order to comply with the obligations of the joint venture. In cases in which the board of managers of the joint venture determines that additional capital contributions are necessary, we have committed to making additional capital contributions subject to certain limitations. These future capital contributions are not included in the table above due to the uncertainty of the timing and amounts of such contributions.

In conjunction with the formation of a joint venture with OvaScience in December 2013, we committed to make an initial capital contribution to the joint venture in the amount of $1.5 million, which was paid in January 2014. In cases in which the board of the joint venture determines that additional capital contributions are necessary, we have the option of making additional capital contributions subject to certain limitations. These future capital contributions are not included in the table above due to the uncertainty of the timing and amounts of such contributions.

Net operating losses

As of December 31, 2013, we had net operating loss carryforwards of approximately $242.3 million for U.S. federal income tax purposes available to offset future taxable income and U.S. federal and state research and development tax credits of $7.0 million, prior to consideration of annual limitations that may be imposed under Section 382 of the Internal Revenue Code of 1986, as amended, or Section 382. These carryforwards begin to expire in 2022.

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Our past issuances of stock and mergers and acquisitions have resulted in ownership changes within the meaning of Section 382. As a result, the utilization of portions of our net operating losses may be subject to annual limitations. As of December 31, 2013, approximately $16.4 million of our net operating losses generated prior to 2008 are limited by Section 382 to annual usage limits of approximately $1.5 million. As of December 31, 2013, approximately $14.8 million of net operating losses were inherited via acquisition and are limited based on the value of the target at the time of the transaction. Future changes in stock ownership may also trigger an ownership change and, consequently, a Section 382 limitation.

We do not file a consolidated income tax return with AquaBounty and BioPop. As of December 31, 2013, AquaBounty had loss carryforwards for federal and foreign income tax purposes of approximately $8.3 million and $4.1 million, respectively, available to offset future taxable income and foreign research and development credits of $3.0 million, prior to consideration of annual limitations that may be imposed under Section 382 or analogous foreign provisions. These carryforwards will begin to expire in 2019. As a result of our ownership in AquaBounty passing 50% in 2013, an annual Section 382 limitation of approximately $0.9 million per year will apply to losses and credits carried forward by AquaBounty from prior years, which are also subject to Section 382 limitations. As of December 31, 2013, BioPop had an insignificant amount of loss carryforwards for federal income tax purposes available to offset future taxable income.

Off-balance sheet arrangements

We did not have during the periods presented, and we do not currently have, any off-balance sheet arrangements, other than operating leases as mentioned above, as defined under Securities and Exchange Commission, or SEC, rules.

Critical accounting policies and estimates

Our management s discussion and analysis of our financial condition and results of operations is based on our consolidated financial statements, which we have prepared in accordance with generally accepted accounting principles in the United States, or U.S. GAAP. The preparation of these consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported revenues and expenses during the reporting periods. We evaluate these estimates and judgments on an ongoing basis. We base our estimates on historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Our actual results may differ from these estimates under different assumptions or conditions.

While our significant accounting policies are more fully described in Note 2 to our consolidated financial statements appearing elsewhere in this annual report on Form 10-K, we believe that the following accounting policies are the most critical for fully understanding and evaluating our financial condition and results of operations.

Revenue recognition

Our ECCs typically contain multiple elements, or deliverables, including technology licenses, research and development services, and in certain cases manufacturing services. Our ECCs may provide for various types of payments to us including upfront payments or technology access fees, funding of research and development and/or manufacturing services, milestone payments, profit sharing and royalties on product sales. Effective January 1, 2011, we adopted the provisions of Accounting Standards Update, or ASU, No. 2009-13, *Revenue Recognition (Topic 605): Multiple Deliverable Revenue Arrangements*, or ASU 2009-13. In accordance with the provisions of ASU 2009-13,

we identify the deliverables within the ECCs and evaluate which deliverables represent separate units of accounting. Analyzing the ECCs to identify deliverables requires the use of judgment. A deliverable is considered a separate unit of accounting when the deliverable has value to the collaborator on a standalone basis based on the consideration of the relevant facts and circumstances for each ECC.

Consideration received is allocated at the inception of the ECC to all identified units of accounting based on their relative selling price. When available, the relative selling price for each deliverable is determined using vendor specific objective evidence, or VSOE, of selling price or third-party evidence of selling price, if VSOE does not exist. If neither VSOE nor third-party evidence of selling price exists, we use our best estimate of the selling price

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for the deliverable. The amount of allocable consideration is limited to amounts that are fixed or determinable. The consideration received is allocated among the separate units of accounting, and the applicable revenue recognition criteria are applied to each of the separate units. We recognize the revenue allocated to each unit of accounting as we deliver the related goods or services. If we determine that we should treat certain deliverables as a single unit of accounting, then we recognize the revenue using either a proportional performance or straight-line method, depending on whether we can reasonably estimate the level of effort required to complete our performance obligations under an arrangement and whether such performance obligations are provided on a best-efforts basis. As we cannot reasonably estimate our performance obligations related to our collaborations, we recognize revenue on a straight-line basis over the period we expect to complete our performance obligations.

Typically, we must estimate our period of performance when the ECCs we enter into do not clearly define such information. Our estimated period of performance for our ECCs has been the expected life of our technologies based on the lack of significant experience we have with these types of agreements and the possibility for multiple products and/or treatments for each ECC s defined field of use.

Our ECCs typically provide for milestone payments upon achievement of specified development, regulatory and commercial activities. Effective January 1, 2011, we adopted ASU No. 2010-17, *Revenue Recognition Milestone Method*, or the Milestone Method. Under the Milestone Method, we recognize consideration that is contingent upon the achievement of a milestone in its entirety as revenue in the period in which the milestone is achieved only if the milestone is substantive in its entirety. A milestone is considered substantive when it meets all of the following criteria:

The consideration is commensurate with either the entity s performance to achieve the milestone or the enhancement of the value of the delivered item or items as a result of a specific outcome resulting from the entity s performance to achieve the milestone;

The consideration relates solely to past performance; and

The consideration is reasonable relative to all of the deliverables and payment terms with the arrangement.

In the event that a milestone is not considered substantive, we recognize the milestone consideration as revenue using the same method applied to the upfront payments.

Research and development services are a deliverable satisfied by us in accordance with the terms of the ECCs and we consider these services to be inseparable from the license to the core technology; thus reimbursements of services provided are recognized as revenue. Further, because reimbursement (i) is contingent upon performance of the services by us, (ii) does not include a profit component and (iii) does not relate to any future deliverable, the revenue is recognized during the period in which the related services are performed and collection of such amounts is reasonably assured. Payments received for manufacturing services will be recognized when the process related to the manufactured materials has been completed. Royalties to be received under our ECCs will be recognized as earned.

We recognized $23.5 million, $13.7 million and $5.1 million of collaboration revenues in the years ended December 31, 2013, 2012 and 2011, respectively. As of December 31, 2013 and December 31, 2012, we have $72.2 million and $51.4 million, respectively, of deferred revenue related to our receipt of upfront and milestone payments.

Valuation of investments in equity securities

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset and liability. We use a three-tier fair value hierarchy to prioritize the inputs used in our fair value measurements. These tiers include: Level 1, defined as observable inputs such as quoted prices in active markets for identical assets, which includes our cash equivalents, short-term investments and certain investments in equity securities of our publicly held collaborators; Level 2, defined as inputs other than quoted prices included in Level 1 that are observable for the asset or liability either directly or indirectly, which includes certain investments in equity securities of our publicly held collaborators; and Level 3, defined as unobservable inputs for the asset or liability used to measure fair value to the extent that observable inputs are not available.

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We hold equity securities received and/or purchased from certain collaborators. For each collaborator where we own equity securities, we make an accounting policy election to present them either (i) at the fair value at the end of each reporting period or (ii) using the cost or equity method depending on our level of influence. Other than investments accounted for using the equity method, we have elected to account for certain of these equity securities in publicly held collaborators using the fair value option. These equity securities in publicly held collaborators are recorded at fair value at each reporting date and are subject to market price volatility. Unrealized gains and losses resulting from fair value adjustments are reported as other income (expense) in the consolidated statement of operations. The fair value of these equity securities in publicly held collaborators is subject to fluctuation in the future due to the volatility of the stock market, changes in general economic conditions and changes in the financial conditions of these collaborators. As of December 31, 2013 and December 31, 2012, our equity securities received from collaborators are valued at $141.5 million and $83.1 million, respectively.

We record the fair value of securities received on the date the collaboration is consummated or the milestone is achieved upon the closing, quoted price of the collaborator s security on that date, assuming the transfer of the consideration is considered perfunctory. If the transfer of the consideration is not considered perfunctory, we consider the specific facts and circumstances to determine the appropriate date on which to evaluate fair value. We also evaluate whether any discounts for trading restrictions or other basis for lack of marketability should be applied to the fair value of the securities at inception of the collaboration. In the event we conclude that a discount should be applied, the fair value of the securities is adjusted at inception of the collaboration and re-evaluated at each reporting period thereafter.

We account for investments in which we have the ability to exercise significant influence over, but not control, the operating activities of the investee using the equity method or election of the fair value option. If the fair value option is elected, the investment is accounted for as described for equity securities above. Under the equity method, we include our pro-rata share of the investee s operating results, adjusted for accretion of basis difference, in our consolidated statement of operations with the corresponding increase or decrease applied to the carrying value of the investment. Through March 15, 2013, we accounted for our investment in AquaBounty using the equity method of accounting. The carrying value of our equity method investment in AquaBounty was $5.7 million at December 31, 2012. On March 15, 2013, we acquired additional ownership interests in AquaBounty which resulted in us gaining control over AquaBounty, thereby requiring consolidation effective on that date. We account for our investments in S & I Ophthalmic and OvaXon using the equity method of accounting. The carrying values of our equity method investments in S & I Ophthalmic and OvaXon are $4.8 million and $1.5 million, respectively, at December 31, 2013.

Valuation allowance for net deferred tax assets

We record a valuation allowance to offset any net deferred tax assets if, based upon the available evidence, it is more likely than not that we will not recognize some or all of the deferred tax assets. We have had a history of net losses since inception, and as a result, we have established a 100 percent valuation allowance for our net deferred tax assets. If circumstances change and we determine that we will able to realize some or all of these net deferred tax assets in the future, we will record an adjustment to the valuation allowance.

Consolidation of variable interest entities

We identify entities as variable interest entities, or VIEs, either: (i) that do not have sufficient equity investment at risk to permit the entity to finance its activities without additional subordinated financial support, or (ii) in which the equity investors lack an essential characteristic of a controlling financial interest. We perform an initial and on-going evaluation of the entities with which we have variable interests to determine if any of these entities are VIEs. If an entity is identified as a VIE, we perform an assessment to determine whether we have both: (i) the power to direct

activities of the VIE that most significantly impact the VIE s economic performance, and (ii) have the obligation to absorb losses from or the right to receive benefits of the VIE that could potentially be significant to the VIE. If we have both these criterion, we are identified as the primary beneficiary of the VIE. As of December 31, 2013, one of our collaborators, Genopaver, LLC, was identified as a VIE. We are not the primary beneficiary of this entity as we do not have the power to direct the activities that most significantly impact the economic performance of the VIE. As of December 31, 2012, we identified AquaBounty, our investment in an affiliate, as a VIE. We were not the primary beneficiary for this entity as we did not have the power to direct the activities that most significantly impact the economic performance of the VIE. On March 15, 2013, we began consolidating AquaBounty since our ownership in AquaBounty exceeded 50%.

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Valuation of long-lived assets

We evaluate long-lived assets, which include property and equipment and intangible assets, for impairment whenever events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable. Conditions that would necessitate an impairment assessment include a significant decline in the observable market value of an asset, a significant change in the extent or manner an asset is used, or a significant adverse change that would indicate that the carrying amount of an asset or group of assets is not recoverable.

Indefinite-lived intangible assets, which include in-process research and development, are tested for impairment annually, or more frequently if events or circumstances between annual tests indicate that the assets may be impaired. Impairment losses on indefinite-lived intangible assets are recognized based solely on a comparison of their fair value to carrying value, without consideration of any recoverability test. We monitor the progression of our in-process research and development, as the likelihood of success is contingent upon regulatory approval.

Stock-based compensation

We record the fair value of stock options issued to employees and non-employees as of the grant date as stock-based compensation expense. Stock-based compensation expense for employees and non-employees is recognized over the requisite service period, which is typically the vesting period. Stock-based compensation expense recorded as research and development expenses and general and administrative expenses amounted to $0.5 million and $2.3 million, respectively, for the year ended December 31, 2013, $0.4 million and $1.1 million, respectively, for the year ended December 31, 2012, and $0.8 million and $0.2 million, respectively, for the year ended December 31, 2011. We utilize the Black-Scholes option-pricing model to estimate the grant-date fair value of all stock options. The Black-Scholes option-pricing model requires the use of weighted average assumptions for estimated expected volatility, estimated expected term of stock options, risk-free rate, estimated expected dividend yield, and the fair value of the underlying common stock at the date of grant. Because we do not have sufficient history to estimate the expected volatility of our common stock price, expected volatility is based on the average volatility of peer public entities that are similar in size and industry. We estimate the expected term of all stock options based on previous history of exercises. The risk-free rate is based on the U.S. Treasury yield curve in effect at the time of grant for the expected term of the stock option. The expected dividend yield is 0 percent as we have not declared any common stock dividends to date and do not expect to declare common stock dividends in the near future. Prior to our IPO, the fair value of the underlying common stock at the date of grant was determined based on a valuation of our common stock. Subsequent to our IPO, the fair value of the underlying common stock is determined based on the quoted market price of our common stock on the NYSE. We estimate forfeitures based on our historical analysis of actual stock option forfeitures. Actual forfeitures are recorded when incurred and estimated forfeitures are reviewed and adjusted at least annually. The assumptions used in the Black-Scholes option-pricing model for the years ended December 31, 2013, 2012 and 2011 are set forth below:

	Years ended December 31,		
	2013	**2012**	**2011**
Valuation Assumptions			
Expected dividend yield	0%	0%	0%
Expected volatility	73% - 75%	71% - 76%	68% - 72%
Expected term (years)	6.25	6.00	5.37 - 6.23
Risk-free interest rate	0.96% - 1.86%	0.80% - 1.10%	1.34% - 2.51%

We had 2,840,648 options outstanding as of December 31, 2013 of which 1,227,563 were exercisable. We had 2,313,526 options outstanding as of December 31, 2012 of which 808,633 were exercisable. Total unrecognized stock-based compensation expense related to non-vested awards at December 31, 2013 and December 31, 2012 was $9.6 million and $4.9 million, respectively, and is expected to be recognized over a weighted-average period of approximately three years. The weighted average grant date fair value for options granted in 2013 and 2012 was $12.91 and $4.60, respectively.

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Recent accounting pronouncements

See Note 2 to our consolidated financial statements included in Part II, Item 8, Financial Statements and Supplementary Data, of this Annual Report on Form 10-K for a description of recent accounting pronouncements applicable to our business.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

The following sections provide quantitative information on our exposure to interest rate risk, stock price risk, and foreign currency exchange risk. We make use of sensitivity analyses which are inherently limited in estimating actual losses in fair value that can occur from changes in market conditions.

Interest rate risk

We had cash, cash equivalents and short-term and long-term investments of $238.1 million and $10.7 million at December 31, 2013 and December 31, 2012, respectively. Our cash and cash equivalents and short-term and long-term investments consist of cash, money market funds, U.S. government debt securities, commercial paper and certificates of deposit. The primary objective of our investment activities is to preserve principal, maintain liquidity and maximize income without significantly increasing risk. Our investments consist of U.S. government debt securities, commercial paper and certificates of deposit which may be subject to market risk due to changes in prevailing interest rates that may cause the fair values of our investments to fluctuate. We believe that a hypothetical 100 basis point increase in interest rates would not materially affect the fair value of our interest-sensitive financial instruments and any such losses would only be realized if we sold the investments prior to maturity.

Investments in publicly traded companies

We have common stock investments in several publicly traded companies that are subject to market price volatility. We have adopted the fair value method of accounting for these investments, except for our investment in AquaBounty as further described below, and therefore, have recorded them at fair value at the end of each reporting period with the unrealized gain or loss recorded as a separate component of other income (expense), net for the period. As of December 31, 2013 and December 31, 2012 the original aggregate cost basis of these investments was $140.0 million and $92.1 million, respectively, and the market value was $141.5 million and $83.1 million, respectively. The fair value of these investments is subject to fluctuation in the future due to the volatility of the stock market, changes in general economic conditions and changes in the financial conditions of these companies. The fair value of these investments as of December 31, 2013 would be approximately $155.7 million and $113.2 million, respectively, based on a hypothetical 10 percent increase or 20 percent decrease in the value of the investments. The fair value of these investments as of December 31, 2012 would be approximately $91.0 million and $66.0 million, respectively, based on a hypothetical 10 percent increase or 20 percent decrease in the value of the investments.

In November 2012, we acquired 47.56 percent of the outstanding common stock of AquaBounty and we accounted for this investment under the equity method of accounting for the period from acquisition date through March 15, 2013. On March 15, 2013, we acquired 18,714,814 additional shares of AquaBounty common stock for $4.9 million, thereby increasing our aggregate ownership to 53.82 percent upon closing. Accordingly, effective upon closing of the acquisition of the additional shares, we consolidated the assets and operating results of AquaBounty in our consolidated financial statements. The common stock of AquaBounty is traded on the London Stock Exchange and the fair value of our investment in AquaBounty at December 31, 2013 and December 31, 2012 was $55.0 million and $14.3 million, respectively. The fair value of our investment in AquaBounty as of December 31, 2013 would be

approximately $60.5 million and $44.0 million, respectively, based on a hypothetical 10 percent increase or 20 percent decrease in the share price of AquaBounty. The fair value of our investment in AquaBounty as of December 31, 2012 would be approximately $15.7 million and $11.4 million, respectively, based on a hypothetical 10 percent increase or 20 percent decrease in the share price of AquaBounty. On March 20, 2014, we acquired 19,040,366 additional shares of AquaBounty common stock for $10.0 million, thereby increasing our aggregate ownership to 59.85 percent upon closing.

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Foreign currency exchange risk

Because the common stock of AquaBounty is traded on the London Stock Exchange, the fair value of our holdings is subject to fluctuations in foreign currency rates. In addition, some of AquaBounty s current expenses are denominated in Canadian dollars. We do not hedge our foreign currency exchange rate risk. The effect of a hypothetical 10 percent change in foreign currency exchange rates applicable to our business would not have a material impact on our consolidated financial statements.

Item 8. Financial Statements and Supplementary Data

The information required by this Item 8 is contained on pages F-1 through F-43 of this annual report on Form 10-K and is incorporated herein by reference.

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

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and our Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2013. The term disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within 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 a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company s management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of December 31, 2013, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Management s Annual Report on Internal Control Over Financial Reporting

This Annual Report on Form 10-K does not include a report of management s assessment regarding internal control over financial reporting or an attestation report of our registered public accounting firm as permitted in this transition period under the rules of the SEC for newly public companies.

Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting during the fiscal quarter ended December 31, 2013, that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

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PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item is incorporated by reference to our Proxy Statement for the 2014 Annual Meeting of Shareholders to be filed with the SEC within 120 days of the fiscal year ended December 31, 2013. The information regarding executive officers is included in this report following Item 4 under the caption Executive Officers of the Registrant and incorporated herein by reference.

Our board of directors has adopted a Code of Business Conduct and Ethics applicable to all officers, directors and employees, which is available on our website (investors.dna.com) under Corporate Governance. We will provide a copy of this document, without charge, upon request, by writing to us at Intrexon Corporation, 20374 Seneca Meadows Parkway, Germantown, Maryland 20876, Attention: Investor Relations. We intend to satisfy the disclosure requirement under Item 5.05 of Form 8-K regarding amendment to, or waiver from, a provision of our Code of Business Conduct and Ethics by posting such information on our website at the address and location specified above.

Item 11. Executive Compensation

The information required by this item is incorporated by reference to our Proxy Statement for the 2014 Annual Meeting of Shareholders to be filed with the SEC within 120 days of the fiscal year ended December 31, 2013.

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

The information required by this item is incorporated by reference to our Proxy Statement for the 2014 Annual Meeting of Shareholders to be filed with the SEC within 120 days of the fiscal year ended December 31, 2013.

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

The information required by this item is incorporated by reference to our Proxy Statement for the 2014 Annual Meeting of Shareholders to be filed with the SEC within 120 days of the fiscal year ended December 31, 2013.

Item 14. Principal Accounting Fees and Services

The information required by this item is incorporated by reference to our Proxy Statement for the 2014 Annual Meeting of Shareholders to be filed with the SEC within 120 days of the fiscal year ended December 31, 2013.

PART IV

Item 15. Exhibits, Financial Statement Schedules

(a) The following are filed as part of this Annual Report and included in Item 8 of Part II of this Annual Report on Form 10-K:

1. Financial Statements.

Consolidated Financial Statements of Intrexon Corporation

Report of PricewaterhouseCoopers, LLP, Independent Registered Public Accounting Firm
Consolidated Balance Sheets as of December 31, 2013 and 2012
Consolidated Statements of Operations for the Years Ended December 31, 2013, 2012, and 2011
Consolidated Statements of Comprehensive Loss for the Years Ended December 31, 2013, 2012, and 2011
Consolidated Statements of Shareholders and Total Equity (Deficit) for the Years Ended December 31, 2013, 2012 and 2011
Consolidated Statements of Cash Flows for the Years Ended December 31, 2013, 2012, and 2011
Notes to Consolidated Financial Statements for the Years Ended December 31, 2013, 2012, and 2011

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Financial Statements of ZIOPHARM Oncology, Inc. (a development stage company)
Report of McGladrey LLP, Independent Registered Public Accounting Firm
Balance Sheets as of December 31, 2013 and 2012
Statements of Operations for the Years Ended December 31, 2013, 2012 and 2011, and for the Period from September 9, 2003 (date of inception) through December 31, 2013
Statements of Changes in Preferred Stock and Stockholders Equity (Deficit) for the period from September 9, 2003 (date of inception) through December 31, 2013
Statements of Cash Flows for the Years Ended December 31, 2013, 2012 and 2011, and for the Period from September 9, 2003 (date of inception) through December 31, 2013
Notes to the Financial Statements for the Years Ended December 31, 2013, 2012 and 2011, and for the Period from September 9, 2003 (date of inception) through December 31, 2013

2. Financial Statement Schedules.

None.

3. Exhibits.

The exhibits are listed in the Exhibit Index immediately following the signature pages to this Annual Report.

(b) Exhibits
The response to this portion of Item 15 is submitted as a separate section to this Annual Report. See Exhibit Index.

(c) Financial Statement Schedules
None.

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SIGNATURES

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

Dated: March 31, 2014

INTREXON CORPORATION

By: /S/ RANDAL J. KIRK
Randal J. Kirk

Chief Executive Officer and Chairman of the Board of Directors

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/S/ RANDAL J. KIRK Randal J. Kirk	Chief Executive Officer and Chairman of the Board of Directors (Principal Executive Officer)	March 31, 2014
/S/ RICK L. STERLING Rick L. Sterling	Chief Financial Officer (Principal Accounting and Financial Officer)	March 31, 2014
Cesar L. Alvarez	Director	
/S/ STEVEN FRANK Steven Frank	Director	March 31, 2014
/S/ LARRY D. HORNER Larry D. Horner	Director	March 31, 2014
/S/ JEFFREY B. KINDLER Jeffrey B. Kindler	Director	March 31, 2014

/S/ DEAN J. MITCHELL Dean J. Mitchell	Director	March 31, 2014
/S/ THOMAS D. REED Thomas D. Reed	Chief Science Officer and Director	March 31, 2014
/S/ ROBERT B. SHAPIRO Robert B. Shapiro	Director	March 31, 2014

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Intrexon Corporation and Subsidiaries

Consolidated Financial Statements

December 31, 2013, 2012 and 2011

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Intrexon Corporation:

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of operations, consolidated statements of shareholders and total equity (deficit) and consolidated statements of cash flows present fairly, in all material respects, the financial position of Intrexon Corporation and its subsidiaries at December 31, 2013 and December 31, 2012, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2013 in conformity with accounting principles generally accepted in the United States of America. These financial statements are the responsibility of the Company s management. Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

/s/ PricewaterhouseCoopers LLP

Charlotte, North Carolina

March 31, 2014

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Intrexon Corporation and Subsidiaries

Consolidated Balance Sheets

December 31, 2013 and 2012

(Amounts in thousands, except share and per share data)	2013	2012
Assets		
Current assets		
Cash and cash equivalents	$ 49,509	$ 10,403
Short-term investments	127,980	260
Receivables		
Trade	790	141
Related parties	5,285	531
Other	1,282	35
Prepaid expenses and other	2,710	2,163
Total current assets	187,556	13,533
Long-term investments	60,581	
Equity securities	141,525	83,116
Property, plant and equipment, net	16,629	18,687
Intangible assets, net	41,956	29,506
Goodwill	13,823	
Investments in affiliates	6,284	5,726
Other assets	1,118	1,078
Total assets	$ 469,472	$ 151,646

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

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Intrexon Corporation and Subsidiaries

Consolidated Balance Sheets

December 31, 2013 and 2012

(Amounts in thousands, except share and per share data)	2013	2012
Liabilities, Redeemable Convertible Preferred Stock and Total Equity (Deficit)		
Current liabilities		
Accounts payable	$ 1,057	$ 632
Accrued compensation and benefits	5,157	3,766
Other accrued liabilities	4,187	2,208
Deferred revenue	7,793	9,963
Capital lease obligations, current	30	49
Related party payables	1,605	99
Total current liabilities	19,829	16,717
Capital lease obligations, net of current portion	10	42
Long term debt	1,653	
Deferred revenue	65,778	48,673
Other long term liabilities	859	1,108
Total liabilities	88,129	66,540
Commitments and contingencies (Note 14)		
Series A redeemable convertible preferred stock, no par value; $1.21 stated value (liquidation preference of $1,406 as of December 31, 2012); 705,400 shares authorized, issued and outstanding at December 31, 2012		1,358
Series B redeemable convertible preferred stock, no par value; $0.72 stated value (liquidation preference of $709 as of December 31, 2012); 694,000 shares authorized, issued and outstanding at December 31, 2012		669
Series B-1 redeemable convertible preferred stock, no par value; $0.83 stated value (liquidation preference of $1,380 as of December 31, 2012); 1,212,360 shares authorized, issued and outstanding at December 31, 2012		1,360
Series C redeemable convertible preferred stock, no par value; $1.10 stated value (liquidation preference of $7,162 as of December 31, 2012); 4,546,360 shares authorized, issued and outstanding at December 31, 2012		7,134
Series C-1 redeemable convertible preferred stock, no par value; $1.57 stated value (liquidation preference of $34,222 as of December 31, 2012); 15,934,528 shares authorized, issued and outstanding at December 31, 2012		34,201
Series C-2 redeemable convertible preferred stock, no par value; $1.88 stated value (liquidation preference of $44,614 as of December 31, 2012); 18,617,020 shares authorized, issued and outstanding at December 31, 2012		44,512
		29,770

Series C-3 redeemable convertible preferred stock, no par value; $1.88 stated value (liquidation preference of $29,819 as of December 31, 2012); 13,297,872 shares authorized, issued and outstanding at December 31, 2012		
Series D redeemable convertible preferred stock, no par value; $3.38 stated value (liquidation preference of $76,347 as of December 31, 2012); 19,803,685 shares authorized, issued and outstanding at December 31, 2012		76,252
Series E redeemable convertible preferred stock, no par value; $5.25 stated value (liquidation preference of $214,086 as of December 31, 2012); 38,095,239 shares authorized, issued and outstanding at December 31, 2012		211,403
Total equity (deficit)		
Common stock, no par value, 200,000,000 shares and 160,000,000 shares authorized as of December 31, 2013 and 2012, respectively; and 97,053,712 shares and 5,661,525 shares issued and outstanding as of December 31, 2013 and 2012, respectively		
Additional paid-in capital	743,084	
Accumulated deficit	(376,414)	(321,553)
Accumulated other comprehensive income	52	
Total Intrexon shareholders equity (deficit)	366,722	(321,553)
Noncontrolling interests	14,621	
Total equity (deficit)	381,343	(321,553)
Total liabilities, redeemable convertible preferred stock and total equity (deficit)	$ 469,472	$ 151,646

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

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Intrexon Corporation and Subsidiaries

Consolidated Statements of Operations

Years ended December 31, 2013, 2012 and 2011

(Amounts in thousands, except share and per share data)	2013	2012	2011
Revenues			
Collaboration revenues	$ 23,525	$ 13,706	$ 5,118
Other revenues	235	68	2,895
Total revenues	23,760	13,774	8,013
Operating Expenses			
Research and development	48,165	64,034	70,228
General and administrative	33,618	24,897	18,300
Other			1,912
Total operating expenses	81,783	88,931	90,440
Operating loss	(58,023)	(75,157)	(82,427)
Other Income (Expense)			
Unrealized appreciation (depreciation) in fair value of equity securities	10,443	(6,290)	(2,675)
Gain in previously held equity investment	7,415		
Interest expense	(141)	(57)	(183)
Investment income	166	5	6
Other expense	(162)	(101)	(1)
Total other income (expense)	17,721	(6,443)	(2,853)
Equity in net loss of affiliates	(606)	(274)	
Net loss	$ (40,908)	$ (81,874)	$ (85,280)
Net loss attributable to the noncontrolling interests	1,928		
Net loss attributable to Intrexon	$ (38,980)	$ (81,874)	$ (85,280)
Accretion of dividends on redeemable convertible preferred stock	(18,391)	(21,994)	(13,868)
Net loss attributable to common shareholders	$ (57,371)	$ (103,868)	$ (99,148)
Net loss attributable to common shareholders per share, basic and diluted	$ (1.40)	$ (18.77)	$ (18.92)

Weighted average shares outstanding, basic and diluted	40,951,952	5,533,690	5,240,647

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

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Intrexon Corporation and Subsidiaries

Consolidated Statements of Comprehensive Loss

Years ended December 31, 2013, 2012 and 2011

(Amounts in thousands)	2013	2012	2011
Net loss	$ (40,908)	$ (81,874)	$ (85,280)
Other comprehensive income:			
Unrealized gain on investments	21		
Foreign currency translation adjustments	58		
Comprehensive loss	(40,829)	(81,874)	(85,280)
Comprehensive loss attributable to the noncontrolling interests	1,901		
Comprehensive loss attributable to Intrexon	$ (38,928)	$ (81,874)	$ (85,280)

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

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Intrexon Corporation and Subsidiaries

Consolidated Statements of Shareholders and Total Equity (Deficit)

Years ended December 31, 2013, 2012 and 2011

(Amounts in thousands, except share data)	Common stock Shares	Amount	Additional paid-in capital	Accumulated other comprehensive income	Accumulated deficit	Total Intrexon shareholders equity (deficit)	Noncontrolling interests	Total equity (deficit)
Balances at December 31, 2010	2,357,494	$	$	$	$ (127,734)	$ (127,734)	$	$ (127,734)
Stock-based compensation expense			983			983		983
Exercises of stock options	75,840		184			184		184
Acquisitions	3,019,294		4,237			4,237		4,237
Contribution of services by shareholder			210			210		210
Shares issued to nonemployee members of the Board of Directors	1,265		9			9		9
Accretion of dividends on redeemable convertible preferred shares			(5,623)		(8,245)	(13,868)		(13,868)
Net loss					(85,280)	(85,280)		(85,280)
Balances at December 31, 2011	5,453,893				(221,259)	(221,259)		(221,259)
Stock-based compensation expense			1,458			1,458		1,458
Exercises of stock options	194,570		473			473		473
Contribution of services by shareholder			1,550			1,550		1,550
Shares issued to nonemployee members of the Board of Directors	13,062		93			93		93
Accretion of dividends on redeemable convertible preferred shares			(3,574)		(18,420)	(21,994)		(21,994)
Net loss					(81,874)	(81,874)		(81,874)
Balances at December 31, 2012	5,661,525				(321,553)	(321,553)		(321,553)
Shares issued in IPO	11,499,998		168,801			168,801		168,801
Stock-based compensation expense			2,812			2,812	109	2,921
Exercises of stock options and warrant	176,531		410			410	4	414

Contribution of services by shareholder		1,550			1,550		1,550
Shares issued to nonemployee members of the Board of Directors	10,595	124			124		124
Accretion of dividends on redeemable convertible preferred shares		(2,510)		(15,881)	(18,391)		(18,391)
Conversion of redeemable convertible preferred shares, including accrued dividends, to common stock	79,705,130	571,898			571,898		571,898
Settlement of fractional shares from reverse stock split	(67)	(1)			(1)		(1)
Adjustments for noncontrolling interests						16,409	16,409
Net loss				(38,980)	(38,980)	(1,928)	(40,908)
Other comprehensive income			52		52	27	79
Balances at December 31, 2013	97,053,712	$ $ 743,084	$ 52	$ (376,414)	$ 366,722	$ 14,621	$ 381,343

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

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Intrexon Corporation and Subsidiaries

Consolidated Statements of Cash Flows

Years ended December 31, 2013, 2012 and 2011

(Amounts in thousands)	2013	2012	2011
Cash flows from operating activities			
Net loss	$ (40,908)	$ (81,874)	$ (85,280)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization	7,205	7,984	4,338
Loss on disposal of property and equipment	349	101	1
Unrealized (appreciation) depreciation on equity securities	(10,443)	6,290	2,675
Amortization of discount/premium of investments	716		
Collaboration revenue recognized upon achievement of milestone		(3,591)	
Equity in net loss of affiliates	606	274	
Gain in previously held equity investment	(7,415)		
Stock-based compensation expense	2,921	1,458	983
Contribution of services by shareholder	1,550	1,550	210
Shares issued to nonemployee members of the Board of Directors	124	93	9
Other noncash items	(75)		
Changes in operating assets and liabilities:			
Receivables:			
Trade	(644)	(121)	33
Related parties	(4,967)	(93)	(239)
Other	(542)	1,015	(400)
Prepaid expenses and other	(347)	(413)	(772)
Other assets	(18)	658	(614)
Accounts payable	(43)	(1,229)	(388)
Accrued compensation and benefits	1,301	2,441	(2,249)
Other accrued liabilities	1,558	(806)	1,204
Deferred revenue	(4,368)	4,997	(2,245)
Related party payables	6	(180)	(215)
Other long term liabilities	(249)	(83)	1,191
Net cash used in operating activities	(53,683)	(61,529)	(81,758)
Cash flows from investing activities			
Purchases of investments	(233,979)	(2)	(188)
Maturities of investments	44,996		
Purchases of equity securities	(28,650)	(10,000)	(22,628)
Acquisitions of businesses, net of cash received	517		(28,662)
Investments in affiliates	(5,000)	(6,000)	
Purchases of property and equipment	(1,527)	(7,491)	(13,003)

Proceeds from sale of property and equipment	480	23	84
Issuance of notes receivable	(1,000)	(200)	
Proceeds from related party notes receivable	500	34	300
Net cash used in investing activities	(223,663)	(23,636)	(64,097)

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

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Intrexon Corporation and Subsidiaries

Consolidated Statements of Cash Flows

Years ended December 31, 2013, 2012 and 2011

(Amounts in thousands)	2013	2012	2011
Cash flows from financing activities			
Proceeds from issuance of Series D redeemable convertible preferred shares			26,442
Proceeds from issuance of Series E redeemable convertible preferred shares		75,560	101,835
Proceeds from issuance of Series F redeemable convertible preferred shares	150,000		
Proceeds from IPO, net of issuance costs	168,801		
Proceeds from issuance of subscriptions payable			7,440
Settlement of fractional shares	(5)		
Proceeds from short-term borrowings			15,000
Payments of capital lease obligations	(51)	(77)	(115)
Proceeds from long term debt	493		
Payments of long term debt	(53)		
Proceeds from stock option exercises	414	473	184
Payment of preferred stock issuance costs	(3,148)	(16)	(2,675)
Net cash provided by financing activities	316,451	75,940	148,111
Effect of exchange rate changes on cash and cash equivalents	1		
Net increase (decrease) in cash and cash equivalents	39,106	(9,225)	2,256
Cash and cash equivalents			
Beginning of period	10,403	19,628	17,372
End of period	$ 49,509	$ 10,403	$ 19,628
Supplemental disclosure of cash flow information			
Cash paid during the period for interest	$ 51	$ 12	$ 18
Significant noncash financing and investing activities			
Conversion of subscriptions payable into Series D redeemable convertible preferred shares	$	$	$ 2,500
Conversion of subscriptions payable into Series E redeemable convertible preferred shares		7,440	
Conversion of short-term borrowings and accrued interest into Series E redeemable convertible preferred shares			15,165
Accretion of dividends on redeemable convertible preferred shares	18,391	21,994	13,868
Conversion of redeemable convertible preferred shares, including accrued dividends, to common stock	571,898		
Stock received as upfront consideration for collaboration agreements	19,303	21,979	19,144
Stock received as consideration upon achievement of milestone		18,330	

Equity instruments issued in acquisitions			4,237
Accrued investment in affiliate	1,500		
Purchases of equipment included in accounts payable and other accrued liabilities	361	24	2,231

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

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Intrexon Corporation and Subsidiaries

Notes to Consolidated Financial Statements

(Amounts in thousands, except share and per share data)

1. Organization and Basis of Presentation

Intrexon Corporation (the Company or Intrexon) is a Virginia corporation focused on forming collaborations to create biologically based products and processes using synthetic biology. At December 31, 2013, the Company owned approximately 54% of AquaBounty Technologies, Inc. (AquaBounty), a biotechnology company focused on improving productivity in commercial aquaculture (Note 7), and 51% of Biological & Popular Culture, Inc. (BioPop) (Note 3). The Company has operations in California, Florida, Maryland, North Carolina and Virginia. There have been no commercialized products derived from the Company s collaborations to date.

Effective July 26, 2013, the Company s board of directors and shareholders approved a reverse stock split of 1-for-1.75 of the Company s shares of common stock. Shareholders entitled to fractional shares as a result of the reverse stock split received a cash payment in lieu of receiving fractional shares. Shares of common stock underlying outstanding stock options and warrants were proportionately reduced and the respective exercise prices were proportionately increased in accordance with the terms of the agreements governing such securities. All share and per share data of the Company s common stock, including shares of common stock underlying stock options and warrants, have been retroactively adjusted in the accompanying consolidated financial statements to reflect the reverse stock split.

On August 13, 2013, the Company completed its initial public offering (IPO), whereby the Company sold 11,499,998 shares of common stock, inclusive of 1,499,999 shares of common stock sold by the Company pursuant to the full exercise of an overallotment option granted to the underwriters in connection with the IPO, at a price of $16.00 per share. The shares began trading on the New York Stock Exchange (NYSE) on August 8, 2013. The aggregate proceeds from the IPO were approximately $168,300, net of underwriting discounts and commissions of approximately $12,900 and offering expenses paid by the Company of approximately $2,800 (of which $2,300 were capitalized). Upon the closing of the IPO, all shares of the Company s redeemable convertible preferred stock, including accrued but unpaid dividends thereon, converted into 79,705,130 shares of common stock. Additionally, in connection with the closing of the IPO, the Company amended and restated its articles of incorporation to increase the number of authorized shares of common stock to 200,000,000 and decrease the number of authorized shares of undesignated preferred stock to 25,000,000.

These consolidated financial statements are presented in U.S. dollars and are prepared under accounting principles generally accepted in the United States of America (U.S. GAAP).

2. Summary of Significant Accounting Policies

Principles of Consolidation

The accompanying consolidated financial statements reflect the operations of the Company and its subsidiaries. All intercompany accounts and transactions have been eliminated.

Revenue Recognition

The Company generates revenue through contractual agreements with collaborative partners (known as exclusive channel collaborations, ECC or ECCs) whereby the partners obtain exclusive access to the Company s proprietary technologies for use in the research, development and commercialization of products and/or treatments in a contractually specified field of use. Generally, the terms of these collaborative agreements provide that the Company receives some or all of the following: (i) upfront payments upon consummation of the agreement, (ii) reimbursements for costs incurred by the Company for research and development and/or manufacturing efforts related to specific application provided for in the agreement, (iii) milestone payments upon the achievement of specified development, regulatory and commercial activities, and (iv) royalties on sales of products arising from the collaboration.

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The Company s collaboration agreements typically contain multiple elements, or deliverables, including technology licenses, research and development services, and in certain cases manufacturing services. Effective January 1, 2011, the Company adopted the provisions of Accounting Standards Update (ASU) No. 2009-13, *Revenue Recognition (Topic 605): Multiple Deliverable Revenue Arrangements* (ASU 2009-13). In accordance with the provisions of ASU 2009-13, the Company identifies the deliverables within the agreements and evaluates which deliverables represent separate units of accounting. Analyzing the agreements to identify deliverables requires the use of judgment. A deliverable is considered a separate unit of accounting when the deliverable has value to the collaborative partner on a standalone basis based on the consideration of the relevant facts and circumstances for each agreement.

Consideration received is allocated at the inception of the agreement to all identified units of accounting based on their relative selling price. When available, the relative selling price for each deliverable is determined using vendor specific objective evidence (VSOE) of the selling price or third-party evidence of the selling price, if VSOE does not exist. If neither VSOE nor third-party evidence of the selling price exists, the Company uses its best estimate of the selling price (BESP) for the deliverable. The amount of allocable consideration is limited to amounts that are fixed or determinable. The consideration received is allocated among the separate units of accounting, and the applicable revenue recognition criteria are applied to each of the separate units. The Company recognizes the revenue allocated to each unit of accounting as the Company delivers the related goods or services. If the Company determines that certain deliverables should be treated as a single unit of accounting, then the revenue is recognized using either a proportional performance or straight-line method, depending on whether the Company can reasonably estimate the level of effort required to complete its performance obligations under an arrangement and whether such performance obligations are provided on a best-efforts basis. As the Company cannot reasonably estimate its performance obligations related to its collaborators, the Company recognizes revenue on a straight-line basis over the period it expects to complete its performance obligations.

The terms of the Company s agreements may provide for milestone payments upon achievement of certain defined events. The Company applies ASU No. 2010-17, *Revenue Recognition Milestone Method* (ASU 2010-17 or Milestone Method). Under the Milestone Method, the Company recognizes consideration that is contingent upon the achievement of a milestone in its entirety as revenue in the period in which the milestone is achieved only if the milestone is substantive in its entirety. A milestone is considered substantive when it meets all of the following criteria:

(1) The consideration is commensurate with either the entity s performance to achieve the milestone or the enhancement of the value of the delivered item or items as a result of a specific outcome resulting from the entity s performance to achieve the milestone;

(2) The consideration relates solely to past performance; and

(3) The consideration is reasonable relative to all of the deliverables and payment terms within the arrangement.

In the event that a milestone is not considered substantive, the Company recognizes the milestone consideration as revenue using the same method applied to upfront payments.

Research and development services are a deliverable satisfied by the Company in accordance with the terms of the collaboration agreements and the Company considers these services to be inseparable from the license to the core technology; therefore, reimbursements of services performed are recognized as revenue. Because reimbursement (i) is

contingent upon performance of the services by the Company, (ii) does not include a profit component, and (iii) does not relate to any future deliverable, the revenue is recognized during the period in which the related services are performed and collection of such amounts is reasonably assured. Payments received for manufacturing services will be recognized when the earnings process related to the manufactured materials has been completed. Royalties to be received under the agreements will be recognized as earned.

Research and Development

The Company considers that regulatory and other uncertainties inherent in the research and development of new products preclude it from capitalizing such costs. Research and development expenses include salaries and related costs of research and development personnel, and the costs of consultants, facilities, materials and supplies associated with research and development projects as well as various laboratory studies. Indirect research and development costs include depreciation, amortization and other indirect overhead expenses.

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The Company has research and development arrangements with third parties that include upfront and milestone payments. At December 31, 2013 and 2012, the Company had research and development commitments with third parties totaling $2,445 and $3,164, respectively, of which $957 and $1,431, respectively, had not yet been incurred. The commitments are generally cancellable by the Company at any time upon written notice.

Cash and Cash Equivalents

All highly liquid investments with an original maturity of three months or less at the date of purchase are considered to be cash equivalents. Cash balances at a limited number of banks may periodically exceed insurable amounts. The Company believes that it mitigates its risk by investing in or through major financial institutions with high quality credit ratings. Recoverability of investments is dependent upon the performance of the issuer. At December 31, 2013 and 2012, the Company had cash equivalent investments in highly liquid money market accounts at major financial institutions of $43,733 and $9,384, respectively.

Short-term and Long-term Investments

Short-term and long-term investments include U.S. government debt securities, commercial paper and certificates of deposit. The Company determines the appropriate classification as short-term or long-term at the time of purchase based on original maturities and management s reasonable expectation of sales and redemption. The Company reevaluates such classification at each balance sheet date. The Company s written investment policy requires investments to be explicitly rated by two of the three following rating services: Standard & Poor s, Moody s and/or Fitch and to have a minimum rating of A1, P1 and/or F-1, respectively, from those agencies. In addition, the investment policy limits the amount of credit exposure to any one issuer.

Equity Securities

The Company holds equity securities received and/or purchased from certain collaborative partners. Other than investments accounted for using the equity method, the Company elected the fair value option to account for its equity securities held in these partners. These equity securities are recorded at fair value at each reporting date and are subject to market price volatility. Unrealized gains and losses resulting from fair value adjustments are reported in the consolidated statement of operations. The fair value of these equity securities is subject to fluctuation in the future due to the volatility of the stock market, changes in general economic conditions and changes in the financial conditions of these collaborative partners. These equity securities are classified as noncurrent in the consolidated balance sheet as the Company does not intend to sell these equity securities within one year. The Company has not sold any of these equity securities to date.

The Company records the fair value of securities received on the date the collaboration is consummated or the milestone is achieved using the closing, quoted price of the collaborator s security on that date, assuming the transfer of consideration is considered perfunctory. If the transfer of the consideration is not considered perfunctory, the Company considers the specific facts and circumstances to determine the appropriate date on which to evaluate fair value. The Company also evaluates whether any discounts for trading restrictions or other basis for lack of marketability should be applied to the fair value of the securities at inception of the collaboration. In the event the Company concludes that a discount should be applied, the fair value of the securities is adjusted at inception of the collaboration and re-evaluated at each reporting period thereafter.

Fair Value of Financial Instruments

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset and liability. As a basis for considering such assumptions, the Company uses a three-tier fair value hierarchy that prioritizes the inputs used in its fair value measurements. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements). The three levels of the fair value hierarchy are as follows:

Level 1	Quoted prices in active markets for identical assets and liabilities;
Level 2	Other than quoted prices included in Level 1 inputs that are observable for the asset or liability, either directly or indirectly; and
Level 3	Unobservable inputs for the asset or liability used to measure fair value to the extent that observable inputs are not available.

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Concentrations of Risk

Due to the Company s mix of fixed and variable rate securities holdings, the Company s investment portfolio is susceptible to changes in interest rates. As of December 31, 2013, the Company s investments had gross unrealized losses of $14. From time to time, the Company may liquidate some or all of its investments to fund operational needs or other activities, such as capital expenditures or business acquisitions. Depending on which investments the Company liquidates to fund these activities, the Company could recognize a portion, or all, of the gross unrealized losses.

Equity Method Investments

Through March 15, 2013, the Company accounted for its investment in AquaBounty using the equity method of accounting since the Company had the ability to exercise significant influence, but not control, over the operating activities of AquaBounty. The excess of the investment over the Company s pro-rata share of AquaBounty s net assets represented identifiable intangible assets and equity-method goodwill. On March 15, 2013, the Company acquired additional ownership interests in AquaBounty which resulted in the Company gaining control over AquaBounty, thereby requiring consolidation effective on that date (Note 7).

The Company applied the equity method of accounting to account for its investment in S & I Ophthalmic, LLC (S & I Ophthalmic), a joint venture between the Company and an indirect subsidiary (Sun Pharmaceutical Subsidiary) of Sun Pharmaceutical Industries Ltd. (Sun Pharmaceutical), an international specialty pharmaceutical company focused on chronic diseases. The Company also applied the equity method of accounting to its investment in OvaXon, LLC (OvaXon), a joint venture between the Company and OvaScience Inc. (OvaScience), a life sciences company focused on infertility treatments (Note 8). The Company accounts for its investments in S & I Ophthalmic and OvaXon using the equity method of accounting since the Company has the ability to exercise significant influence, but not control, over the operating activities of these entities. See Note 8 for additional discussion of S & I Ophthalmic and OvaXon.

The Company determined that it has significant influence over two and one of its collaborators as of December 31, 2013 and 2012, respectively, based on its ownership interest, representation on the board of directors of the collaborator and other qualitative factors. As of December 31, 2012, the Company determined that one of these collaborators, Ziopharm Oncology, Inc. (Ziopharm), met the criteria of SEC Regulation S-X Article 3-09 for inclusion of separate financial statements of an equity method investment. The Company accounts for this investment using the fair value option. The fair value of the Company s equity securities of Ziopharm was $71,134 and $56,298 as of December 31, 2013 and 2012, respectively, and is included as equity securities in the respective consolidated balance sheets. The Company s ownership interest in Ziopharm was 16.4% and 16.3% at December 31, 2013 and 2012, respectively. Unrealized appreciation (depreciation) in the fair value of the Company s equity securities held in Ziopharm was $4,836, $(7,194), and $(4,924) for the years ended December 31, 2013, 2012 and 2011, respectively.

In September 2013, the Company increased its investment in Oragenics, Inc. (Oragenics) resulting in the Company concluding it had significant influence over the operations of Oragenics. The fair value of the Company s equity securities of Oragenics was $22,161 and $10,129 as of December 31, 2013 and 2012, respectively, and is included as equity securities in the respective consolidated balance sheets. The Company s ownership interest in Oragenics was 24.6% and 16.0% at December 31, 2013 and 2012, respectively. Unrealized appreciation (depreciation) in the fair value of the Company s equity securities held in Oragenics was $(90) and $3,540 for the years ended December 31, 2013 and 2012, respectively. Summarized financial data for Oragenics as of December 31, 2013 and for the years ended December 31, 2013 and 2012 are as follows:

	December 31, 2013
Current assets	$ 16,805
Non-current assets	27
Total assets	16,832
Current liabilities	993
Net assets	$ 15,839

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	Year ended December 31,	
	2013	2012
Revenues, net	$ 1,032	$ 1,332
Gross profit	689	454
Loss from operations	(16,210)	(12,432)
Net loss	$ (16,069)	(13,090)

Variable Interest Entities

The Company identifies entities that (1) do not have sufficient equity investment at risk to permit the entity to finance its activities without additional subordinated financial support or (2) in which the equity investors lack an essential characteristic of a controlling financial interest as variable interest entities (VIE or VIEs). The Company performs an initial and on-going evaluation of the entities with which the Company has variable interests to determine if any of these entities are a VIE. If an entity is identified as a VIE, the Company performs an assessment to determine whether the Company has both (1) the power to direct activities that most significantly impact the VIE s economic performance and (2) have the obligation to absorb losses from or the right to receive benefits of the VIE that could potentially be significant to the VIE. If both of these criteria are satisfied, the Company is identified as the primary beneficiary of the VIE. As of December 31, 2012, the Company determined that its investment in AquaBounty was a VIE. The Company was not the primary beneficiary for this entity since it did not have the power to direct the activities that most significantly impact the economic performance of the VIE. As of December 31, 2012, the total carrying value of the Company s investment in the VIE was $5,726, which is the investment in AquaBounty. On March 15, 2013, the Company began consolidating AquaBounty since the Company s ownership in AquaBounty exceeded 50% (Note 7). The Company s maximum exposure to loss related to this VIE was limited to the carrying value of the investment.

As of December 31, 2013, the Company determined that one of the its collaborators, Genopaver, LLC (Genopaver), was a VIE. The Company was not the primary beneficiary for this entity since it did not have the power to direct the activities that most significantly impact the economic performance of the VIE.

Property, Plant and Equipment

Property, plant and equipment are stated at cost, less accumulated depreciation and amortization. Major additions or betterments are capitalized and repairs and maintenance are generally expensed as incurred. Depreciation and amortization is calculated using the straight-line method over the estimated useful lives of the assets. The estimated useful lives of these assets are as follows:

	Years
Building	13
Furniture and fixtures	7
Lab equipment	2 7
Computer hardware	5 7
Software	3 5

Leasehold improvements are amortized over the shorter of the useful life of the asset or the applicable lease term, generally one to four years.

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Goodwill

Goodwill represents the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognized (Notes 3 and 7). Goodwill is reviewed for impairment at least annually. The Company has the option to perform a qualitative assessment to determine whether it is more-likely-than-not that the fair value of a reporting unit is less than its carrying amount prior to performing the two-step goodwill impairment test. If this is the case, the two-step goodwill impairment test is required. If it is more-likely-than-not that the fair value of a reporting unit is greater than the carrying amount, the two-step goodwill impairment test is not required.

If the two-step goodwill impairment test is required, first, the fair value of the reporting unit is compared with its carrying amount (including goodwill). If the fair value of the reporting unit is less than its carrying amount, an indication of goodwill impairment exists for the reporting unit and the entity must perform step two of the impairment test. Under step two, an impairment loss is recognized for any excess of the carrying amount of the reporting unit s goodwill over the implied fair value of that goodwill. The implied fair value of goodwill is determined by allocating the fair value of the reporting unit in a manner similar to a purchase price allocation and the residual fair value after this allocation is the implied fair value of the reporting unit goodwill. Fair value of the reporting unit is determined using a discounted cash flow analysis. If the fair value of the reporting unit exceeds its carrying amount, step two does not need to be performed.

The Company performs its annual impairment review of goodwill in the fourth quarter, or sooner if a triggering event occurs prior to the annual impairment review.

Intangible Assets

Intangible assets subject to amortization consist of patents and related technologies acquired as a result of mergers and acquisitions (Note 3). These intangible assets are subject to amortization and were recorded at fair value at the date of acquisition and are stated net of accumulated amortization. Indefinite-lived intangible assets consist of in-process research and development acquired in a step acquisition (Note 7) and was recorded at fair value at the date of the step acquisition.

The Company applies the provisions of ASC Topic 350, *Intangibles, Goodwill and Other*, which requires the amortization of long-lived intangible assets to reflect the pattern in which the economic benefits of the intangible asset are expected to be realized. The intangible assets are amortized over their remaining estimated useful lives, ranging from seven to fourteen years for the patents and related technologies.

Impairment of Long-Lived Assets

Long-lived assets to be held and used, including property, plant and equipment and intangible assets subject to amortization, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable. Conditions that would necessitate an impairment assessment include a significant decline in the observable market value of an asset, a significant change in the extent or manner in which an asset is used, or a significant adverse change that would indicate that the carrying amount of an asset or group of assets is not recoverable.

Indefinite-lived intangible assets, including in-process research and development, are tested for impairment annually, or more frequently if events or circumstances between annual tests indicate that the asset may be impaired. Impairment losses on indefinite-lived intangible assets are recognized based solely on a comparison of their fair value

to carrying value, without consideration of any recoverability test. The Company monitors the progression of its in-process research and development, as the likelihood of success is contingent upon commercial development or regulatory approval.

Income Taxes

Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to both differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases as well as operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date of the change. Valuation allowances are established when necessary to reduce deferred tax assets to the amount expected to be realized.

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The Company identifies any uncertain income tax positions and recognizes the effect of income tax positions only if those positions are more likely than not of being sustained. Recognized income tax positions are measured at the largest amount that is greater than 50% likely of being realized. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs. The Company records interest, if any, related to unrecognized tax benefits as a component of interest expense. Penalties, if any, are recorded in general and administrative expenses.

Net Loss per Share

Basic net loss per share is calculated by dividing net loss attributable to common shareholders by the weighted average shares outstanding during the period, without consideration of common stock equivalents. Diluted net loss per share is calculated by adjusting weighted average shares outstanding for the dilutive effect of common stock equivalents outstanding for the period, using the treasury-stock method. For purposes of the diluted net loss per share calculation, preferred stock, stock options and warrants are considered to be common stock equivalents but are excluded from the calculation of diluted net loss per share because their effect would be anti-dilutive and, therefore, basic and diluted net loss per share were the same for all periods presented.

Segment Information

The Company has determined that it operates in one segment. The Company uses synthetic biology for the creation of distinct products developed in collaboration with partners. All of the Company s revenues are derived in the United States of America. Substantially all of the Company s assets are located in the United States of America.

Recently Issued Accounting Pronouncements

In February 2013, the FASB issued ASU No. 2013-02, *Reporting of Amounts Reclassified Out of Accumulated Other Comprehensive Income* (ASU 2013-02). ASU 2013-02 requires that companies present either in a single note or parenthetically on the face of the financial statements, the effect of significant amounts reclassified from each component of accumulated other comprehensive income based on its source and the income statement line items affected by the reclassification. If a component is not required to be reclassified to net income in its entirety, companies would instead cross reference to the related footnote for additional information. ASU 2013-02 is effective for interim and annual reporting periods beginning after December 15, 2012. The Company has implemented the provisions of ASU 2013-02 as of January 1, 2013. The adoption of this amendment did not have a material impact on the Company s consolidated financial statements.

In July 2012, the FASB issued guidance intended to simplify indefinite-lived intangible impairment testing, by allowing an entity to first assess qualitative factors to determine whether it is more likely than not that the fair value of an asset is less than its carrying amount as a basis for determining whether it is necessary to perform a quantitative impairment test. The more-likely-than-not threshold is defined as having a likelihood of more than 50%. This guidance is effective for annual and interim tests performed for fiscal years beginning after September 15, 2012. The adoption of this guidance did not impact the Company s consolidated financial statements.

In December 2011, the FASB issued ASU No. 2011-11, *Balance Sheet (Topic 210): Disclosures about Offsetting Assets and Liabilities* (ASU 2011-11). ASU 2011-11 requires an entity to disclose information about offsetting and related arrangements to enable users of financial statements to understand the effect of those arrangements on its financial position, and to allow investors to better compare financial statements prepared under U.S. GAAP with financial statements prepared under International Financial Reporting Standards (IFRS). The new standards are effective for annual periods beginning January 1, 2013 and interim periods within those annual periods. Retrospective application is required. The Company has implemented the provisions of ASU 2011-11 as of January 1, 2013. The

adoption of this amendment did not have a material impact on the Company s consolidated financial statements.

Reclassifications

Certain insignificant reclassifications have been made to the prior year consolidated financial statements to conform to the current year presentation.

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Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting periods. Actual results could differ from those estimates.

3. Mergers and Acquisitions

Agarigen, Inc.

On January 26, 2011, the Company acquired 100% of the outstanding common stock of Agarigen, Inc. (Agarigen), a North Carolina-based company which developed a novel mushroom-based platform for the production of proteins, by merging Agarigen into a newly formed wholly-owned subsidiary. The acquisition allows the Company to combine Agarigen s technology with the Company s technology and capability in a specific agricultural sector. As consideration for the acquisition, the Company paid $1,178 cash and issued 386,142 shares of its common stock at closing. The Company also issued 165,255 options to purchase the Company s common stock at strike prices ranging from $0.38 to $1.98 and issued warrants to purchase up to 511,098 shares of the Company s common stock at a price per share of $0.79. The results of Agarigen s operations subsequent to January 26, 2011 have been included in the consolidated financial statements.

The fair value of the total consideration transferred was $3,773. The acquisition date fair value of each class of consideration transferred was as follows:

Cash	$ 1,178
Common shares	1,014
Stock options and warrants	1,581
	$ 3,773

The fair value of the shares of the Company s common stock issued was based upon the value of the Company s common stock at the acquisition date determined under an option-pricing method as prescribed by the American Institute of Certified Public Accountants Practice Aid, *Valuation of Privately-Held Company Equity Securities Issued as Compensation* (AICPA Practice Aid). The option-pricing method treats common stock and preferred stock as call options on the enterprise s equity value, with exercise prices based on the liquidation preferences of the preferred stock. The fair value of stock options and warrants issued were determined in accordance with ASC Topic 718, *Compensation Stock Compensation*. The estimated fair value of assets acquired and liabilities assumed at the acquisition date is as follows:

Cash	$ 334
Trade receivables	53
Other receivables	436
Prepaid expenses and other	11
Property and equipment	30

Intangible assets	3,122
Other assets	3
Total assets acquired	3,989
Accounts payable	60
Accrued compensation and benefits	65
Other accrued liabilities	91
Total liabilities assumed	216
Net assets acquired	$ 3,773

The fair value of acquired intangible assets was determined using the relief-from-royalty method, a variation of the income approach that estimates the benefit of owning the intangible assets rather than paying royalties for the right to use comparable assets. The acquired intangible assets are being amortized over the expected useful life of nine years and consist of acquired patents and related technology.

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The Company paid $110 of acquisition related costs, which are included in general and administrative expenses in the accompanying consolidated statement of operations for the year ended December 31, 2011.

The warrants were fully vested upon issuance, have an exercise price of $0.79 per share and expire in December 2017. The Company considered the applicable provisions of ASC No. 480, *Distinguishing Liabilities and Equity,* and ASC No. 815, *Derivatives and Hedging,* and determined the warrants should be classified as shareholders equity.

GT Life Sciences, Inc.

On October 5, 2011, the Company acquired 100% of the outstanding common stock of GT Life Sciences, Inc. (GT Life), a California company, by merging a newly formed wholly-owned subsidiary with and into GT Life. The acquisition allows the Company to combine GT Life s technology with the Company s technology and capability for the development and deployment of high value production cell lines. The Company paid $14,250 cash at closing, which was the acquisition date fair value of the total consideration transferred. The results of GT Life s operations subsequent to October 5, 2011 have been included in the consolidated financial statements.

The estimated fair value of assets acquired and liabilities assumed at the acquisition date is as follows:

Cash	$ 21
Other receivables	161
Related party receivable	33
Prepaid expenses and other	1
Property and equipment	32
Intangible assets	14,094
Total assets acquired	14,342
Accounts payable	55
Accrued compensation and benefits	29
Other accrued liabilities	8
Total liabilities assumed	92
Net assets acquired	$ 14,250

The fair value of acquired intangible assets was determined using the multi-period excess earnings method, a variation of the income approach. The multi-period excess earnings method estimates the value of an intangible asset equal to the present value of the incremental after-tax cash flows attributable to the intangible asset. The acquired intangible assets are being amortized over the expected useful life of thirteen years and consist of acquired patents and related technology.

The Company paid $276 of acquisition related costs, which are included in general and administrative expenses in the accompanying consolidated statement of operations for the year ended December 31, 2011.

Immunologix, Inc.

On October 21, 2011, the Company acquired 100% of the outstanding preferred and common stock of Immunologix, Inc. (Immunologix), a South Carolina-based company specializing in therapeutic antibodies, by merging a newly formed wholly-owned subsidiary with and into Immunologix. The acquisition allows the Company to combine Immunologix s antibody technology with the Company s existing technology and capability. The Company paid $12,758 cash and issued 153,365 shares of its common stock at closing. The results of Immunologix s operations from October 21, 2011 have been included in the consolidated financial statements.

The transaction also includes a contingent consideration arrangement which may require the Company to pay the former shareholders of Immunologix 50% of revenue generated from Immunologix s antibody technology in a specific target defined in the agreement up to a maximum of $2,000. The potential undiscounted amount of all future payments that could be required under the contingent consideration arrangement is between $0 and $2,000. No value

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was assigned to the contingent consideration arrangement on the acquisition date based on the risk-adjusted valuation performed by the Company. There have been no changes to the Company s valuation of this contingent consideration as of December 31, 2013 and 2012.

The fair value of the total consideration transferred was $13,850. The acquisition date fair value of each class of consideration transferred was as follows:

Cash	$ 12,758
Common shares	1,092
	$ 13,850

The fair value of the shares of the Company s common stock issued was based upon the value of the Company s common stock at acquisition date determined by using a probability-weighted expected return method (PWERM) as prescribed by the AICPA Practice Aid. The PWERM estimates the value of an enterprise s common stock based upon an analysis of current and future values for the enterprise assuming possible liquidity events. The PWERM considers the various terms of the Company s redeemable convertible preferred stock, including the rights for each share class, at the date in the future upon which these rights will either be executed or abandoned. The estimated fair value of assets acquired and liabilities assumed at the acquisition date is as follows:

Cash	$ 19
Other receivables	1
Prepaid expenses and other	6
Property and equipment	141
Intangible assets	13,921
Total assets acquired	14,088
Accounts payable	87
Accrued compensation and benefits	76
Capital lease obligations	75
Total liabilities assumed	238
Net assets acquired	$ 13,850

The fair value of acquired intangible assets was determined using the multi-period excess earnings method, a variation of the income approach. The multi-period excess earnings method estimates the value of an intangible asset equal to the present value of the incremental after-tax cash flows attributable to the intangible asset. The acquired intangible assets are being amortized over the expected useful life of thirteen years and consist of acquired patents and related technology.

The Company paid $293 of acquisition related costs, which are included in general and administrative expenses in the accompanying consolidated statement of operations for the year ended December 31, 2011.

Other 2011 Acquisition

In April 2011, the Company acquired certain tangible and intangible assets that were considered a business in accordance with ASC 805, *Business Combinations* (ASC 805), from a private California company for consideration of $1,400, including $850 cash and 92,984 shares of the Company s common stock valued at $550. The acquired intangible assets, which consist of acquired patents and related technology, are being amortized over the expected useful life of thirteen years.

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Unaudited Condensed Pro Forma Financial Information

The results of operations of the mergers and acquisitions discussed above are included in the consolidated statements of operations beginning on their respective acquisition dates. The following unaudited condensed pro forma financial information for the year ended December 31, 2011 is presented as if the acquisitions had been consummated on January 1, 2011:

(Unaudited)	2011 Pro forma
Revenues	$ 9,146
Net loss	(89,116)
Accretion of dividends on redeemable convertible preferred stock, not declared	(13,868)
Net loss attributable to common shareholders	$ (102,984)
Net loss attributable to common shareholders per share, basic and diluted	$ (19.01)

BioPop Acquisition

On October 1, 2013, the Company paid $1,300 to acquire 51% of the outstanding common stock of BioPop, and effective on that date, the Company began consolidating BioPop in its consolidated results of operations and financial position pursuant to ASC 805. In connection with the transaction, the Company recorded goodwill of $822 and intangible assets of $430. The intangible assets consist of acquired technology and are being amortized over the expected useful life of four years.

4. Collaboration Revenue

The Company s collaborations provide for multiple deliverables to be delivered by the Company, including a license to the Company s technology platforms, participation in collaboration committees, performance of certain research and development services and may include obligations for certain manufacturing services. The Company groups these deliverables into two units of accounting based on the nature of the deliverables and the separation criteria. The first deliverable (Unit of Accounting 1) includes the license to the Company s technology platform, the Company s participation on the collaboration committees and any research and development services associated with its technology platforms. The deliverables for Unit of Accounting 1 are combined because they cannot be individually separated. The second deliverable, (Unit of Accounting 2) includes manufacturing services to be provided for any Company materials in an approved product. These services have standalone value and are contingent due to uncertainties on whether an approved product will ever be developed thereby requiring manufacture by the Company at that time. As VSOE and third party evidence of selling price is not available or practical, the BESP for each unit of accounting is determined using a historical cost approach due to the early stage of development of the Company s technology. In establishing BESP for Unit of Accounting 1, the Company uses the accumulated costs incurred as of the collaboration by the Company on its technology platform licensed to the collaborator to approximate the cost to recreate the deliverables included in this unit of accounting. All upfront consideration is allocated to Unit of Accounting 1. Unit of Accounting 2 is determined to be a contingent deliverable at the inception of the collaboration due to the uncertainties surrounding whether an approved product will ever be developed and require manufacturing

by the Company. The upfront consideration allocated to Unit of Accounting 1 is recognized over the expected life of the Company s technology platform using a straight-line approach.

The Company recognizes the reimbursement payments received for research and development services in the period when the services are performed and collection is reasonably assured. At the inception of each collaboration, the Company determines whether any milestone payments are substantive and can be recognized when earned in accordance with ASU 2010-17. The milestone payments are typically not considered substantive. Royalties related to product sales will be recognized when earned since payments relate directly to products that have been fully developed and for which the Company has satisfied all of its obligations.

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The following table summarizes the amounts recorded in the consolidated statements of operations for each significant collaboration for the years ended December 31, 2013, 2012 and 2011.

	Year ended December 31, 2013		
	Collaboration revenue recognized from upfront and milestone payments	Collaboration revenue recognized from research and development services	Total
ZIOPHARM Oncology, Inc.	$ 2,577	$ 7,818	$ 10,395
Synthetic Biologics, Inc.	2,187	1,048	3,235
Oragenics, Inc.	673	1,517	2,190
Fibrocell Science, Inc.	970	3,736	4,706
Genopaver, LLC	204	935	1,139
S & I Ophthalmic, LLC		417	417
Other	333	1,110	1,443
Total	$ 6,944	$ 16,581	$ 23,525

	Year ended December 31, 2012		
	Collaboration revenue recognized from upfront and milestone payments	Collaboration revenue recognized from research and development services	Total
ZIOPHARM Oncology, Inc.	$ 5,068	$ 6,333	$ 11,401
Synthetic Biologics, Inc.	293	327	620
Oragenics, Inc.	320	516	836
Fibrocell Science, Inc.	158	61	219

Other		12		618	630
Total	$	5,851	$	7,855	$ 13,706

	Year ended December 31, 2011		
	Collaboration revenue recognized from upfront and milestone payments	Collaboration revenue recognized from research and development services	Total
ZIOPHARM Oncology, Inc.	$ 2,372	$ 2,724	$ 5,096
Synthetic Biologics, Inc.	22		22
Total	$ 2,394	$ 2,724	$ 5,118

The following is a summary of the terms of the Company s significant collaborations.

Ziopharm Collaboration

Effective January 6, 2011, the Company entered into a worldwide ECC with Ziopharm. Pursuant to the ECC, Ziopharm received a license to the Company s technology platform within the field of oncology as defined more specifically in the agreement. Upon execution of the ECC, the Company received 3,636,926 shares of Ziopharm s common stock valued at $17,457 as upfront consideration. In addition to the deliverables discussed above, the Company transferred two clinical product candidates to Ziopharm that resulted in a separate unit of accounting for which $1,115 of the upfront consideration was allocated and recognized as collaboration revenue in 2011. The remaining $16,342 of upfront consideration was allocated to Unit of Accounting 1 discussed above. The Company is entitled to additional shares of common stock representing the lesser of (i) the original shares received or (ii) the number of shares representing 7.495% of Ziopharm s outstanding shares at the date of the dosing of the first patient in a Phase II clinical trial of a product candidate created, produced or developed by Ziopharm using the Company s technology (Ziopharm Milestone). On October 24, 2012, the Ziopharm Milestone was achieved and the Company received 3,636,926 shares of Ziopharm s common stock valued at $18,330 as milestone consideration. Since the Ziopharm Milestone was not substantive, the Company allocated the Ziopharm Milestone to the applicable units of accounting and is being recognized in a manner similar to these units of accounting. The Company receives reimbursement payments for research and development services provided and manufacturing services for Company materials provided to Ziopharm during the ECC. Subject to certain expense allocations, Ziopharm will pay the Company 50% of the quarterly net profits derived from the sale of products developed from the ECC. Ziopharm is responsible for conducting preclinical and clinical development of product candidates, as well as for other aspects of commercialization or manufacturing of product candidates. The term of the ECC commenced on January 6, 2011 and continues until terminated pursuant to the ECC agreement. The ECC may be terminated by either party in the

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event of certain material breaches defined in the agreement and may be terminated voluntarily by Ziopharm upon 90 days written notice to the Company provided that no voluntary termination by Ziopharm can be made during the first two years of the ECC. See Note 15 for additional transactions with Ziopharm.

On March 21, 2012, the Company received $10,000 from Ziopharm as a prepayment of research and development services to be provided in conjunction with the ECC. The Company recorded this amount as deferred revenue and recognized collaboration revenue as services were performed.

Synthetic Biologics, Inc. Collaborations

Effective November 18, 2011, the Company entered into a worldwide ECC with Synthetic Biologics, Inc. (Synthetic Biologics), a publicly traded company focused on the development of innovative disease-modifying medicines for serious illnesses. Pursuant to the ECC, at the transaction effective date, Synthetic Biologics received a license to the Company s technology platform within a designated field (Field One). Upon execution of the ECC, the Company received 3,123,558 shares of Synthetic Biologics common stock valued at $1,687 as upfront consideration. The Company is entitled to additional shares of common stock representing the lesser of (i) the original shares received or (ii) the number of shares representing 9.995% of Synthetic Biologics outstanding shares at the date of the dosing of the first patient in a Phase II clinical trial of a product candidate created, produced or developed by Synthetic Biologics using the Company s technology. The Company will receive reimbursement payments for research and development services provided pursuant to the agreement and manufacturing services for Company materials provided to Synthetic Biologics during the ECC. Subject to certain expense allocations, Synthetic Biologics will pay the Company 50% of the quarterly net profits derived from the sale of products developed from the ECC. Synthetic Biologics is responsible for conducting preclinical and clinical development of product candidates, as well as for other aspects of commercialization or manufacturing of the product candidates. The term of the ECC commenced on November 18, 2011 and continues until terminated pursuant to the ECC agreement. The ECC may be terminated by either party in the event of certain material breaches defined in the agreement and may be terminated voluntarily by Synthetic Biologics upon 90 days written notice to the Company provided that no voluntary termination by Synthetic Biologics can be made during the first 18 months of the ECC. On April 16, 2013, the Company terminated its ECC with Synthetic Biologics in Field One. As a result of this termination, all licenses granted by the Company under the ECC for use in Field One reverted back to the Company and the Company recognized the balance of deferred revenue associated with the upfront consideration as collaboration revenue in April 2013.

On August 6, 2012, the Company entered into its second worldwide ECC with Synthetic Biologics. Pursuant to this ECC, at the transaction effective date, Synthetic Biologics received a license to the Company s technology platform within a second designated field (Field Two). Upon Synthetic Biologics shareholders approval on October 5, 2012, the Company received a technology access fee of 3,552,210 shares of Synthetic Biologics common stock valued at $7,815 as upfront consideration. Upon the filing by Synthetic Biologics of an investigational new drug application with the U.S. Food and Drug Administration, or FDA, the Company will receive cash or common stock at the option of Synthetic Biologics valued at $2,000. Upon the first to occur of either the first commercial sale of a product developed under the ECC or the granting of regulatory approval of a product developed under the ECC, the Company will receive cash or common stock at the option of Synthetic Biologics valued at $3,000. The ECC initially targets three infectious diseases and Synthetic Biologics may elect to target up to five more infectious diseases by paying the Company a field expansion fee of $2,000 in either cash or common stock for each additional infectious disease selected. The Company receives reimbursement payments for research and development services provided pursuant to the agreement and manufacturing services for preclinical Company materials provided to Synthetic Biologics during the ECC. The Company has the option to propose, and Synthetic Biologics can select, the Company to be the bulk manufacturer of products developed from the ECC. On a quarterly basis, Synthetic Biologics will pay the Company royalties with percentages ranging from upper-single digits to lower double digits of net sales of products developed

from the ECC. Synthetic Biologics is responsible for conducting preclinical and clinical development of product candidates, as well as for other aspects of commercialization and manufacturing of the product candidates. The term of the ECC commenced on August 6, 2012 and continues until terminated pursuant to the ECC agreement. The ECC may be terminated by either party in the event of certain material breaches defined in the agreement and may be terminated voluntarily by Synthetic Biologics upon 90 days written notice to the Company provided that no voluntary termination by Synthetic Biologics can be made during the first 18 months of the ECC.

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On December 17, 2012, the Company received $2,500 from Synthetic Biologics as a prepayment of research and development services to be provided in conjunction with either of the two ECCs. The Company recorded this amount as deferred revenue and recognizes collaboration revenue as services are performed. Any remaining balance of this prepayment is refundable to Synthetic Biologics in the event both ECCs are terminated.

See Note 15 for further discussion related to Synthetic Biologics.

Oragenics Collaborations

Effective June 5, 2012, the Company entered into a worldwide ECC with Oragenics, a publicly traded company focused on becoming the world leader in novel antibiotics against infectious disease and probiotics for oral health for humans and pets. Pursuant to the ECC, at the transaction effective date, Oragenics received a license to the Company s technology platform within the field of lantibiotics for the treatment of infectious diseases in humans and companion animals as defined more specifically in the agreement. Upon execution of the ECC, the Company received a technology access fee of 4,392,425 shares of Oragenics common stock valued at $6,588 as upfront consideration. The Company is entitled to receive additional shares of common stock, or at Oragenics option, receive a cash payment based upon the fair market value of the shares, upon the separate achievement of certain regulatory milestones of the first product candidate developed from the ECC (Oragenics ECC 1 Milestones). The Oragenics ECC 1 Milestones include: (i) 1% of Oragenics outstanding shares as defined in the ECC agreement at the date of the filing of the first Investigative New Drug Application with the U.S. Food and Drug Administration (U.S. FDA) for a product candidate created, produced or developed using the Company s technology (Oragenics ECC 1 Product); (ii) 1.5% of Oragenics outstanding shares as defined in the ECC agreement at the date of the dosing of the first patient in the first Phase II clinical trial of an Oragenics ECC 1 Product; (iii) 2% of Oragenics outstanding shares as defined in the ECC agreement at the date of the dosing of the first patient in the first Phase III clinical trial of an Oragenics ECC 1 Product; (iv) 2.5% of Oragenics outstanding shares as defined in the ECC agreement at the date of the first New Drug Application or Biologics License Application with the U.S. FDA for an Oragenics ECC 1 Product, or alternatively the first equivalent regulatory filing with a foreign agency; and (v) 3% of Oragenics outstanding shares as defined in the ECC agreement at the date of the granting of the first regulatory approval of an Oragenics ECC 1 Product. The Company receives reimbursement payments for research and development services provided pursuant to the agreement during the ECC and manufacturing services for Company materials provided to Oragenics during the ECC. Oragenics will pay the Company 25% of the quarterly profits derived from the sale of products developed from the ECC.

Oragenics is responsible for funding the further development of lantibiotics toward the goal of commercialization, conducting preclinical and clinical development of product candidates, as well as for other aspects of commercialization or manufacturing of the product candidates. The term of the ECC commenced on June 5, 2012 and continues until terminated pursuant to the ECC agreement. The ECC may be terminated by either party in the event of certain material breaches defined in the agreement and may be terminated voluntarily by Oragenics upon 90 days written notice to the Company provided that no voluntary termination by Oragenics can be made during the first 18 months of the ECC. See Note 15 for additional arrangements with Oragenics.

Effective September 30, 2013, the Company entered into its second worldwide ECC with Oragenics (ECC 2). Pursuant to ECC 2, at the transaction effective date, Oragenics received a license to the Company s technology platform to develop and commercialize probiotics, specifically the direct administration to humans of genetically modified probiotics for the treatment of diseases of the oral cavity, throat, sinus and esophagus as defined more specifically in the agreement. Upon execution of ECC 2, the Company received a technology access fee of 1,348,000 shares of Oragenics common stock valued at $3,503 and a $1,956 convertible promissory note maturing on or before December 31, 2013 as upfront consideration. Prior to the maturity date, Oragenics had the right to convert the

promissory note into shares of Oragenics common stock subject to its shareholders approval. The conversion price is equal to the closing price of Oragenics common stock on the last trading day immediately prior to the date of conversion. On December 18, 2013, Oragenics converted the promissory note into 698,241 shares of Oragenics common stock. The Company is entitled to receive additional shares of common stock, or at Oragenics option, receive a cash payment based upon the fair market value of the shares, upon the first instance of attainment of certain commercialization milestones of a product candidate developed from ECC 2 (Oragenics ECC 2 Milestones). The Oragenics ECC 2 Milestones include: (i) $2,000 within thirty days of the first instance of the achievement of the first dosing of a patient in a phase II clinical trial for an Oragenics product developed from ECC 2 (Oragenics ECC 2 Product); (ii) $5,000 within thirty days of the first instance of the achievement of the meeting of the primary endpoint in a phase III clinical trial for an Oragenics ECC 2 Product; and (iii) $10,000 within thirty

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days of the first instance of the achievement of the first to occur of (a) the first commercial sale of an Oragenics ECC 2 Product anywhere in the world, or (b) the regulatory approval for an Oragenics ECC 2 Product. The Company receives reimbursement payments for research and development services provided pursuant to the agreement during the ECC and manufacturing services for Company materials provided to Oragenics during ECC 2. Oragenics will pay the Company 10% of the net sales derived from the sale of products developed from ECC 2.

Oragenics is responsible for funding the further development of probiotics toward the goal of commercialization, conducting preclinical and clinical development of product candidates, as well as for other aspects of commercialization or manufacturing of the product candidates. The term of ECC 2 commenced on September 30, 2013 and continues until terminated pursuant to ECC 2. ECC 2 may be terminated by either party in the event of certain material breaches defined in the agreement and following full payment of the technology access fee may be terminated voluntarily by Oragenics upon 90 days written notice to the Company.

Fibrocell Science, Inc. Collaboration

Effective October 5, 2012, the Company entered into an ECC with Fibrocell Science, Inc. (Fibrocell), a publicly traded, autologous cellular therapeutic company focused on the development of innovative products for aesthetic, medical and scientific applications. Pursuant to the ECC, at the transaction effective date, Fibrocell received a license to the Company s technology platform to develop and commercialize genetically modified and non-genetically modified autologous fibroblasts and autologous dermal cells in the United States of America. Upon execution of the ECC, the Company received a technology access fee of 1,317,520 shares of Fibrocell s common stock valued at $7,576 as upfront consideration. The number of shares received reflects a 1-for-25 reverse stock split of Fibrocell s common stock effective April 30, 2013. The Company receives reimbursement payments for research and development services provided pursuant to the agreement during the ECC and manufacturing services for Company materials provided to Fibrocell during the ECC. On a quarterly basis, Fibrocell will pay the Company royalties of 7% of net sales up to $25,000 and 14% of net sales above $25,000 on each product developed from the ECC. If Fibrocell uses the Company s technology platform to improve the production of a current or new Fibrocell products not developed from the ECC, Fibrocell will pay the Company a quarterly royalty equal to 33% of the cost of goods sold savings generated by the improvement. Fibrocell is responsible for conducting preclinical and clinical development of product candidates, as well as for other aspects of commercialization and manufacturing of the product candidates. The term of the ECC commenced on October 5, 2012 and continues until terminated pursuant to the ECC agreement. The ECC may be terminated by either party in the event of certain material breaches defined in the agreement and may be terminated voluntarily by Fibrocell upon 90 days written notice to the Company.

Effective June 28, 2013, the Company entered into an amendment to the ECC with Fibrocell. The amendment expands the field of use defined in the ECC agreement. Under the terms of the amendment to the ECC, the Company received 1,243,781 shares of Fibrocell s common stock valued at $7,612 as a supplemental technology access fee. The Company allocated this additional consideration to the appropriate unit of accounting and is recognizing it consistent with the unit of accounting.

See Note 15 for further discussion related to Fibrocell.

Genopaver Collaboration

Effective March 29, 2013, the Company entered into a worldwide ECC with Genopaver, a limited liability company formed by affiliates of Third Security, LLC (Note 15). Genopaver was formed for the purpose of entering into the ECC and developing and commercializing products in the field of the fermentative production of alkaloids through genetically modified cell-lines and substrate feeds for use as active pharmaceutical ingredients or as commercially

sold intermediates in the manufacture of active pharmaceutical ingredients. Upon execution of the ECC, the Company received a technology access fee of $3,000 as upfront consideration. The Company receives reimbursement payments for research and development services provided pursuant to the agreement during the ECC. Genopaver will pay the Company a royalty as a percentage in the lower-double digits on the quarterly gross profits of product sales from products developed under the ECC. Genopaver is responsible for the development and commercialization of the product candidates. The term of the ECC commenced on March 29, 2013 and continues until terminated pursuant to the ECC agreement. The ECC may be terminated by either party in the event of certain material breaches defined in the agreement and may be terminated voluntarily by Genopaver upon 90 days written notice to the Company.

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AquaBounty Collaboration

On February 14, 2013, the Company entered into an ECC with AquaBounty. The Company will be reimbursed for research and development services as provided for in the ECC agreement. In the event of product sales from a product developed from the ECC, the Company will receive 16.66% of quarterly gross profits for each product. All revenues and expenses related to this ECC are eliminated in consolidation (Note 7).

S & I Ophthalmic Collaboration

On September 30, 2013, the Company entered into a worldwide ECC with S & I Ophthalmic, a joint venture between the Company and Sun Pharmaceutical Subsidiary (Note 8). The ECC grants S & I Ophthalmic an exclusive worldwide license to the Company s technology platform to develop and commercialize therapies in humans for the treatment of ocular diseases defined more specifically in the agreement. The Company will be reimbursed for research and development services and manufacturing services as provided for in the ECC agreement. Subject to certain expense allocations, S & I Ophthalmic will pay the Company royalties with percentages ranging from mid-single digits and above of the net sales derived from the sale of products developed under the ECC.

BioPop Collaboration

On October 1, 2013, the Company entered into a worldwide ECC with BioPop. The ECC grants BioPop an exclusive, worldwide license to the Company s technology platform to develop and commercialize artwork, children s toys and novelty goods that are derived from living organisms or are enabled by synthetic biology. The Company will be reimbursed for research and development services and manufacturing services as provided for in the ECC agreement. The Company is entitled to royalties in the mid-single digits as a percentage of the net product sales of a product developed under the ECC. All revenues and expenses related to this ECC are eliminated in consolidation (Note 3).

OvaXon Collaboration

On December 18, 2013, the Company entered into a worldwide ECC with OvaXon, the joint venture between the Company and OvaScience (Note 8). The ECC grants OvaXon an exclusive, worldwide license to the Company s technology platform to create new applications for improving human and animal health. OvaScience also licensed certain technology to OvaXon pursuant to a separate license agreement. The Company will be reimbursed for research and development services and manufacturing services as provided for in the ECC agreement.

Deferred Revenue

Deferred revenue primarily consists of consideration received for upfront and milestone payments in connection with the Company s collaborations and prepayments for research and development services performed for collaborators pursuant to the terms of the collaborations. Deferred revenue consists of the following:

	December 31,	
	2013	**2012**
Upfront and milestone payments	$ 72,207	$ 51,359
Prepaid research and development services	1,319	7,229
Other	45	48

Total	$ 73,571	$ 58,636
Current portion of deferred revenue	7,793	9,963
Long-term portion of deferred revenue	65,778	48,673
Total	$ 73,571	$ 58,636

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5. Short-term and Long-term Investments

The Company s investments are classified as available-for-sale. The following table summarizes the amortized cost, gross unrealized gains and losses and fair value of available-for-sale investments as of December 31, 2013:

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Aggregate Fair Value
U.S. government debt securities	$ 178,277	$ 35	$ (13)	$ 178,299
Commercial paper	7,997			7,997
Certificates of deposit	2,266		(1)	2,265
Total	$ 188,540	$ 35	$ (14)	$ 188,561

For more information on the Company s method for determining the fair value of its assets, see Note 2 Fair Value of Financial Instruments .

The estimated fair value of available-for-sale investments classified by their contractual maturities as of December 31, 2013 was:

Due within one year	$ 127,980
After one year through two years	60,581
Total	$ 188,561

Changes in market interest rates and bond yields cause certain investments to fall below their cost basis, resulting in unrealized losses on investments. As of December 31, 2013, the Company had unrealized losses of $14 related to investments that had a fair value of $80,176. The unrealized losses of the Company s investments were primarily the result of unfavorable changes in interest rates subsequent to the initial purchase of these investments and have been in a loss position for less than 12 months.

As of December 31, 2013 and 2012, the Company did not consider any of its investments to be other-than-temporarily impaired. When evaluating its investments for other-than-temporary impairment, the Company reviews factors such as the length of time and extent to which fair value has been below its cost basis, the financial condition of the issuer, the Company s ability and intent to hold the security and whether it is more likely than not that it will be required to sell the investment before recovery of its cost basis.

6. Fair Value Measurements

The carrying amount of cash and cash equivalents, receivables, prepaid expenses and other current assets, accounts payable, accrued compensation and benefits, other accrued liabilities, and related party payables approximate fair value due to the short maturity of these instruments.

The following table presents the placement in the fair value hierarchy of financial assets that are measured at fair value on a recurring basis, including the items for which the fair value option has been elected, at December 31, 2013:

	Quoted prices in active markets (level 1)	Significant other observable inputs (level 2)	Significant unobservable inputs (level 3)	December 31, 2013
Assets				
U.S. government debt securities (Note 5)	$	$ 178,299	$	$ 178,299
Commercial paper (Note 5)		7,997		7,997
Certificates of deposit (Note 5)		2,265		2,265
Equity securities (Note 4)	110,297	31,228		141,525
	$ 110,297	$ 219,789	$	$ 330,086

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The following table presents the placement in the fair value hierarchy of financial assets that are measured at fair value on a recurring basis, including the items for which the fair value option has been elected, at December 31, 2012:

	Quoted prices in active markets (level 1)	Significant other observable inputs (level 2)	Significant unobservable inputs (level 3)	December 31, 2012
Assets				
Certificates of deposit (Note 5)	$	$ 260	$	$ 260
Equity securities (Note 4)	72,988	10,128		83,116
	$ 72,988	$ 10,388	$	$ 83,376

Financial liabilities measured on a recurring basis were not significant at December 31, 2013 and 2012.

The method used to estimate the fair value of the Level 1 assets in the tables above is based on observable market data as these equity securities are publicly-traded. The method used to estimate the fair value of the Level 2 short-term and long-term investments in the tables above is based on professional pricing sources for identical or comparable instruments, rather than direct observations of quote prices in active markets. The method used to estimate the fair value of the Level 2 equity securities in the tables above is based on the quoted market price of the publicly-traded security, adjusted for a discount for lack of marketability.

There were no transfers between levels of the fair value hierarchy in the years ended December 31, 2013 and 2012.

7. Investment in AquaBounty

On November 16, 2012, the Company acquired 48,631,444 shares of AquaBounty common stock, representing 47.56% of the then outstanding shares of AquaBounty, for $6,000 through a definitive purchase agreement with an existing AquaBounty shareholder and its affiliate. The carrying amount of the investment in AquaBounty was $5,726 at December 31, 2012. Based on closing quoted market prices (Level 1), the fair value of the investment in AquaBounty was approximately $14,300 at December 31, 2012. Summarized unaudited financial information for AquaBounty as of December 31, 2012 and for the period from November 16, 2012 to December 31, 2012 is as follows:

	2012
Current assets	$ 514
Non-current assets	1,962
Total assets	2,476
Current liabilities	706
Non-current liabilities	2,741

Total liabilities	3,447
Net liabilities	$ (971)

	2012
Revenues	$
Operating expenses	578
Loss from operations	(578)
Other expense	(1)
Net loss	$ (579)

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On November 29, 2012, the Company executed a promissory note purchase agreement (promissory note) with AquaBounty. The promissory note allowed for the Company to loan up to $500 to AquaBounty. Draws on the promissory note by AquaBounty accrued annual interest of 3% and matured no later than May 28, 2013. As of December 31, 2012, AquaBounty had drawn $200 on the promissory note. This outstanding balance plus accrued interest is included in related party receivables on the December 31, 2012 consolidated balance sheet. In January and February 2013, AquaBounty borrowed additional installments of $200 and $100, respectively, on the promissory note. On March 15, 2013, AquaBounty repaid the $500 promissory note plus accrued interest.

On March 15, 2013, the Company acquired 18,714,814 shares of AquaBounty for $4,907 in a private subscription offering, thereby increasing the Company s ownership in AquaBounty to 53.82%, resulting in the Company consolidating AquaBounty. Commencing on that date, AquaBounty is included in the consolidated results of operations and financial position pursuant to the step acquisition guidance in ASC 805, *Business Combinations*. The Company recognized a gain of $7,415 to account for the difference between the carrying value and the fair value of the previously held 47.56% equity interest. The fair value of the consideration transferred included:

Consideration paid	$ 4,907
Fair value of noncontrolling interest	15,153
Fair value of the Company s investment in affiliate held before the business combination	12,751
Fair value of the consideration transferred	$ 32,811

The Company used the private subscription price to measure fair value of the Company s previously held investment and noncontrolling interest. The estimated fair value of assets acquired and liabilities assumed at the acquisition date is shown in the table below along with subsequent adjustments during the measurement period to the fair value of assets acquired and liabilities assumed. The adjustments were due to the completed valuation of intangible assets and long-term debt.

	Initial estimated fair value	Adjustments	Adjusted fair value
Cash	$ 5,419	$	$ 5,419
Short-term investments	14		14
Trade receivables	4		4
Other receivables	9		9
Prepaid expenses and other	200		200
Property, plant and equipment	1,241		1,241
Intangible assets	14,900		14,900
Other assets	22		22
Total assets acquired	21,809		21,809
Accounts payable	156		156
Accrued compensation	94		94
Other accrued liabilities	395		395

Long-term debt	2,199	(845)	1,354
Total liabilities assumed	2,844	(845)	1,999
Net assets acquired	18,965	845	19,810
Goodwill	13,846	(845)	13,001
Total consideration	$ 32,811	$	$ 32,811

The fair value of acquired intangible assets was determined using the multi-period excess earnings method, a variation of the income approach that estimates the value of an intangible asset equal to the present value of the incremental after-tax cash flows attributable to the intangible asset. The acquired intangible assets consist of in-process research and development until regulatory approval is obtained, at which point the intangible assets will be accounted for as definite lived intangible assets and amortized over the expected useful life of fifteen years. The goodwill consists of future revenue opportunities and the potential for expansion of AquaBounty products. The goodwill is not expected to be deductible for tax purposes.

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The results of operations of AquaBounty are included in the consolidated statement of operations beginning on the acquisition date. The following unaudited condensed pro forma financial information for the years ended December 31, 2013 and 2012, is presented as if the acquisition had been consummated on January 1, 2012:

	Year ended December 31,	
	2013	2012
	Pro forma	
Revenues	$ 23,760	$ 13,774
Net loss	(48,760)	(78,651)
Net loss attributable to noncontrolling interest	2,310	2,062
Net loss attributable to Intrexon	(46,450)	(76,589)
Accretion of dividends on redeemable convertible preferred stock	(18,391)	(21,994)
Net loss attributable to Intrexon common shareholders	$ (64,841)	$ (98,583)
Net loss attributable to Intrexon common shareholders per share, basic and diluted	$ (1.58)	$ (17.81)

The pro forma net loss for the year ended December 31, 2013 excludes the $7,415 non-recurring gain on remeasurement of the Company s previously held investment in AquaBounty. The pro forma net loss for the year ended December 31, 2012 includes this non-recurring gain on remeasurement.

See Note 4 for discussion of the Company s ECC with AquaBounty.

8. Investments in Joint Ventures

S & I Ophthalmic

On September 30, 2013, the Company and Sun Pharmaceutical Subsidiary entered into a Limited Liability Company Agreement (Sun LLC Agreement) which governs the affairs and the conduct of business of S & I Ophthalmic, a joint venture to develop therapies for the treatment of ocular diseases. S & I Ophthalmic leverages experience and technology from both the Company and Sun Pharmaceutical. Both the Company and Sun Pharmaceutical Subsidiary made an initial capital contribution of $5,000 in October 2013 for a 50% membership interest in S & I Ophthalmic. In cases in which the board of managers of S & I Ophthalmic (S & I Board) determines that additional capital contributions are necessary in order for S & I Ophthalmic to conduct business and comply with its obligations under the ECC (Note 4), each of the Company and Sun Pharmaceutical Subsidiary have committed to making additional capital contributions to S&I Ophthalmic subject to certain limits defined in the agreement. Each has the right, but not the obligation, to make additional capital contributions above the defined limits when and if solicited by the S & I Board.

Beginning on the seventh anniversary of the effective date of the Sun LLC Agreement, and upon the second anniversary thereafter, the Company, as well as Sun Pharmaceutical Subsidiary, may make a cash offer to purchase all

of the other party s interest in S & I Ophthalmic. Upon receipt of such an offer, the other party must either agree to tender its interests at the offered price or submit a counteroffer at a price higher than the original offer. Such offer and counteroffer may continue until one party agrees to the other s price.

S & I Ophthalmic is governed by the S & I Board which has four members. The Company, as well as Sun Pharmaceutical Subsidiary, has the initial right to appoint two members to the S & I Board. For so long as Sun Pharmaceutical Subsidiary and/or any of its affiliates is a member of S & I Ophthalmic and holds a percentage interest in S & I Ophthalmic that is at least equal to the percentage held by the Company and/or its affiliates, Sun Pharmaceutical Subsidiary will have the sole authority to select and appoint on behalf of S & I Ophthalmic each of the representatives of the S & I Ophthalmic on the ECC committees, and one such appointee will be an Empowered Representative of the S & I Ophthalmic under the terms of the ECC with final authority to resolve certain ECC committee disputes.

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As of December 31, 2013, S & I Ophthalmic has total assets and liabilities of $9,850 and $283, respectively, and incurred a net loss of $433 for the year ended December 31, 2013. The Company s investment in S & I Ophthalmic is $4,784 as of December 31, 2013.

OvaXon

On December 18, 2013, the Company and OvaScience entered into a Limited Liability Company Agreement (OvaXon LLC Agreement) which governs the affairs and conduct of business of OvaXon, a joint venture to create new applications for improving human and animal health. OvaXon leverages experience and technology from both the Company and OvaScience. Both the Company and OvaScience made an initial capital contribution of $1,500 in January 2014 for a 50% membership interest in OvaXon. In cases in which the board of managers of OvaXon (OvaXon Board) determines that additional capital contributions are necessary in order for OvaXon to conduct business and comply with its obligations under the ECC (Note 4), each of the Company and OvaScience have the right, but not the obligation, to make additional capital contributions to OvaXon subject to the OvaXon LLC Agreement.

OvaXon is governed by the OvaXon Board which has four members. The Company, as well as OvaScience, has the initial right to appoint two members to the OvaXon Board. For so long as OvaScience and/or any of its affiliates is a member of OvaXon and holds at least 25% interest in OvaXon, OvaScience will have the sole authority to select and appoint on behalf of OvaXon each of the representatives of OvaXon on the ECC committees, and one such appointee will be an Executive Officer of OvaXon under the terms of the ECC with final authority to resolve certain ECC committee disputes.

9. Property, Plant and Equipment, net

Property, plant and equipment consist of the following:

	December 31,	
	2013	2012
Land	$ 55	$
Building	945	
Furniture and fixtures	876	857
Lab equipment	22,275	22,195
Leasehold improvements	5,147	4,972
Computer hardware	3,286	3,136
Construction in progress	314	14
Software	1,008	888
	33,906	32,062
Less: Accumulated depreciation and amortization	(17,277)	(13,375)
Property, plant and equipment, net	$ 16,629	$ 18,687

Depreciation expense was $4,325, $4,957 and $3,078 for the years ended December 31, 2013, 2012 and 2011, respectively.

The Company leases certain property and equipment which are classified as capital leases. The net book value of this property and equipment was insignificant as of December 31, 2013 and 2012.

10. Goodwill and Intangible Assets, net

The changes in the carrying amount of goodwill for the year ended December 31, 2013 are as follows:

Balance as of December 31, 2012	$
Acquisitions	13,823
Balance as of December 31, 2013	$ 13,823

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No goodwill or accumulated impairment losses existed as of December 31, 2013.

Intangible assets consist of the following at December 31, 2013:

	Gross Carrying Amount	Accumulated Amortization	Net
Patents and related technologies	$ 34,772	$ (7,716)	$ 27,056
In-process research and development	14,900		14,900
Total	$ 49,672	$ (7,716)	$ 41,956

No in-process research and development or accumulated impairment losses existed as of December 31, 2013.

Intangible assets consist of the following at December 31, 2012:

	Gross Carrying Amount	Accumulated Amortization	Net
Patents and related technologies	$ 34,342	$ (4,851)	$ 29,491
Favorable rent asset	646	(631)	15
Total	$ 34,988	$ (5,482)	$ 29,506

Amortization expense was $2,880, $3,027 and $1,260 for the years ended December 31, 2013, 2012 and 2011, respectively. At December 31, 2013, the weighted average useful life for patents and related technology was 12.3 years. Total amortization expense is estimated to be $2,748 for each year from 2014 through 2015, $2,749 for 2016, $2,721 for 2017, $2,641 for 2018, and $13,449 for the cumulative period thereafter.

11. Income Taxes

For the year ended December 31, 2013, domestic loss before income taxes total $39,250, while foreign loss before income taxes total $1,658. For the years ended December 31, 2012 and 2011, loss before income taxes was solely domestic. There is no income tax benefit recognized for the years ended December 31, 2013, 2012 and 2011 due to the Company s and its subsidiaries histories of net losses combined with an inability to confirm recovery of the tax benefits of the Company s and its subsidiaries losses and other net deferred tax assets. Income tax benefit for the years ended December 31, 2013, 2012 and 2011 differed from amounts computed by applying the applicable U.S. federal corporate income tax rate of 34% to loss before income taxes as a result of the following:

	2013	2012	2011
Computed statutory income tax benefit	$ (13,909)	$ (27,837)	$ (28,995)
(Increase) reduction in income tax benefit resulting from State income tax benefit, net of federal income taxes	(1,834)	(3,711)	(3,893)

Nondeductible stock based compensation	575	333	203
Contribution of services by shareholder	527	527	71
Gain in previously held equity investment	(2,477)		
Research and development tax credits	(1,203)		(2,515)
Other, net	1,317	(238)	477
	(17,004)	(30,926)	(34,652)
Change in valuation allowance for deferred tax assets	17,004	30,926	34,652
Total income tax provision	$	$	$

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The tax effects of temporary differences that comprise the deferred tax assets and liabilities at December 31 are as follows:

	2013	2012
Deferred tax assets		
Equity securities	$ 415	$ 4,346
Accrued liabilities	1,445	1,910
Stock-based compensation	1,677	363
Deferred revenue	28,456	22,684
Research and development tax credits	10,062	5,848
Net operating loss carryforwards	97,395	80,159
Total deferred tax assets	139,450	115,310
Less: Valuation allowance	131,985	113,051
Net deferred tax assets	7,465	2,259
Deferred tax liabilities		
Property and equipment	140	478
Intangible assets	7,325	1,781
Total deferred tax liabilities	7,465	2,259
Net deferred tax assets (liabilities)	$	$

Activity within the valuation allowance for deferred tax assets during the years ended December 31, 2013, 2012 and 2011 was as follows:

	2013	2012	2011
Valuation allowance at beginning of year	$ 113,051	$ 82,125	$ 52,036
(Decrease) increase in valuation allowance as a result of			
Mergers and acquisitions, net	1,930		(4,563)
Current year operations	17,004	30,926	34,652
Valuation allowance at end of year	$ 131,985	$ 113,051	$ 82,125

In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Management considers the scheduled reversal of deferred tax liabilities, projected future taxable income and tax planning strategies in making this assessment. Due to the Company and its subsidiaries histories of net losses incurred from inception, no income tax benefit has been recorded and the corresponding deferred tax assets have been

fully reserved as the Company and its subsidiaries cannot sufficiently be assured that these deferred tax assets will be realized in accordance with the provisions of ASC 740. The components of the deferred tax assets and liabilities as of the date of the mergers and acquisitions by the Company prior to consideration of the valuation allowance are substantially similar to the components of deferred tax assets presented herein.

The American Taxpayer Relief Act of 2012, which retroactively reinstated the federal research and development tax credit for 2012, was not enacted into law until January 2013. Therefore, the deferred tax asset and corresponding increase in the valuation allowance for the amount of the tax credit generated in 2012 are reflected in 2013 for financial statement purposes.

The Company s past issuances of stock and mergers and acquisitions have resulted in ownership changes as defined in Section 382 of the Internal Revenue Code of 1986. As a result, utilization of portions of the net operating losses may be subject to annual limitations. As of December 31, 2013, approximately $16,400 of the Company s net operating losses generated prior to 2008 are limited by Section 382 to annual usage limits of approximately $1,500. As of December 31, 2013, approximately $14,800 of the Company s net operating losses were inherited via acquisition and are limited based on the value of the target at the time of the transaction.

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At December 31, 2013, the Company has loss carryforwards for federal income tax purposes of approximately $242,318 available to offset future taxable income and federal and state research and development tax credits of $6,968, prior to consideration of annual limitations that may be imposed under Section 382. These carryforwards will begin to expire in 2022. Of these loss carryforwards, $2,636 relate to benefits from stock compensation deductions that will be recorded as a component of paid-in capital when realized.

The Company does not file a consolidated income tax return with AquaBounty or BioPop. At December 31, 2013, AquaBounty has loss carryforwards for federal and foreign income tax purposes of approximately $8,300 and $4,100, respectively, available to offset future taxable income and foreign research and development tax credits of $3,000, prior to consideration of annual limitations that may be imposed under Section 382 or analogous foreign provisions. These carryforwards will begin to expire in 2019. As a result of the Company s ownership in AquaBounty passing 50% in 2013, an annual Section 382 of approximately $900 per year will apply to losses and credits carried forward by AquaBounty from prior years, which are also subject to prior Section 382 limitations. At December 31, 2013, BioPop had an insignificant amount of loss carryforwards for federal income tax purposes available to offset future taxable income.

The Company and its subsidiaries apply provisions related to the accounting for uncertain income tax positions in ASC 740-10. The Company and its subsidiaries do not have material unrecognized tax benefits as of December 31, 2013. The Company does not anticipate significant changes in the amount of unrecognized tax benefits in the next 12 months. The Company s tax returns for years 2004 and forward are subject to examination by federal or state tax authorities due to the carryforward of unutilized net operating losses and research and development tax credits.

12. Redeemable Convertible Preferred Stock and Shareholders Equity (Deficit)

The tables below represent a rollforward of the Redeemable Convertible Preferred Stock:

	Series A redeemable convertible preferred stock		Series B redeemable convertible preferred stock		Series B-1 redeemable convertible preferred stock	
	Shares	Amount	Shares	Amount	Shares	Amount
Balances at December 31, 2011	705,400	$ 802	694,000	$ 639	1,212,360	$ 1,300
Accretion of dividends		556		30		60
Balances at December 31, 2012	705,400	1,358	694,000	669	1,212,360	1,360
Accretion of dividends		52		19		37
Conversion to common stock	(705,400)	(1,410)	(694,000)	(688)	(1,212,360)	(1,397)

Balances at December 31, 2013	$	$	$

	Series C redeemable convertible preferred stock		Series C-1 redeemable convertible preferred stock		Series C-2 redeemable convertible preferred stock	
	Shares	**Amount**	**Shares**	**Amount**	**Shares**	**Amount**
Balances at December 31, 2011	4,546,360	$ 6,729	15,934,528	$ 32,264	18,617,020	$ 41,987
Accretion of dividends		405		1,937		2,525
Balances at December 31, 2012	4,546,360	7,134	15,934,528	34,201	18,617,020	44,512
Accretion of dividends		266		1,272		1,660
Conversion to common stock	(4,546,360)	(7,400)	(15,934,528)	(35,473)	(18,617,020)	(46,172)
Balances at December 31, 2013		$		$		$

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	Series C-3 redeemable convertible preferred stock		Series D redeemable convertible preferred stock		Series E redeemable convertible preferred stock	
	Shares	Amount	Shares	Amount	Shares	Amount
Balances at December 31, 2011	13,297,872	$ 28,082	19,803,685	$ 71,924	22,285,716	$ 117,954
Issuance of shares					15,809,523	83,000
Accretion of dividends		1,688		4,328		10,465
Stock issuance costs						(16)
Balances at December 31, 2012	13,297,872	29,770	19,803,685	76,252	38,095,239	211,403
Accretion of dividends		1,103		2,827		7,931
Conversion to common stock	(13,297,872)	(30,873)	(19,803,685)	(79,078)	(38,095,239)	(219,332)
Settlement of fractional shares upon conversion to common stock				(1)		(2)
Balances at December 31, 2013		$		$		$

	Series F redeemable convertible preferred stock	
	Shares	Amount
Balances at December 31, 2012		$
Issuance of shares	19,047,619	150,000
Accretion of dividends		3,224
Stock issuance costs		(3,148)
Conversion to common stock	(19,047,619)	(150,075)
Settlement of fractional shares upon conversion to common stock		(1)
Balances at December 31, 2013		$

The Series F Redeemable Convertible Preferred Stock (Series F), Series E Redeemable Convertible Preferred Stock (Series E), Series D Redeemable Convertible Preferred Stock (Series D), Series C-3 Redeemable Convertible Preferred Stock (Series C-3), Series C-2 Redeemable Convertible Preferred Stock (Series C-2), Series C-1 Redeemable Convertible Preferred Stock (Series C-1), Series C Redeemable Convertible Preferred Stock (Series C), Series B-1 Redeemable Convertible Preferred Stock (Series B-1), Series B Redeemable Convertible Preferred Stock (Series B) and Series A Redeemable Convertible Preferred Stock (Series A) collectively are referred to as the Series Preferred .

Upon closing of the IPO on August 13, 2013, all Series Preferred shares, including $68,850 of accrued but unpaid dividends thereon, automatically converted into 79,705,130 shares of common stock. Prior to conversion, the Series Preferred had optional redemption provisions whereby after May 25, 2016, but prior to the occurrence of a qualified IPO, the holders of greater than three-fourths of then issued and outstanding shares of the Series F, Series E, Series D, Series C-3, Series C-2, Series C-1 and Series C, voting as a separate class, could have elected by written notice to require the Company to redeem all of the then issued and outstanding shares of Series F, Series E, Series D, Series C-3, Series C-2, Series C-1 and Series C at an amount equal to the stated price adjusted for any stock dividends, combination or splits plus all accrued but unpaid dividends. Upon receipt of such written notice, the Company must notify the holders of the Series B-1, Series B and Series A of the redemption notice, upon which the holders of each of those classes could have required the Company to redeem all of the then issued and outstanding shares of such class. As a result of this optional redemption provision, the Company accreted changes in the redemption value from the date of issuance of all Series Preferred shares with a resultant change to additional paid-in capital or accumulated deficit in the absence of additional paid-in capital. As of December 31, 2012, $50,549 of cumulative dividends had been accreted to the redemption price for Series Preferred on the Company s consolidated balance sheet.

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13. Stock Option Plans

Intrexon Stock Option Plan

The Company records the fair value of stock options issued to employees and non-employees as of the grant date as stock-based compensation expense. Stock-based compensation expense for employees and non-employees is recognized over the requisite service period, which is typically the vesting period. Stock-based compensation cost that has been included in research and development expenses and general and administrative expenses amounted to $514 and $2,298, respectively, for the year ended December 31, 2013, $377 and $1,081, respectively, for the year ended December 31, 2012, and $763 and $220, respectively, for the year ended December 31, 2011.

On April 18, 2008, the Company adopted the 2008 Equity Incentive Plan (the 2008 Plan) for employees and nonemployees pursuant to which the Company s board of directors may grant share based awards, including stock options, to officers, key employees and nonemployees. During 2011, the 2008 Plan was amended to increase the number of authorized awards under the 2008 plan from 2,857,142 to 5,714,285. Awards issued pursuant to the Company s 2004 Stock Option Plan, the 2004 Stock Option Plan for Nonemployees and the 2006 Stock Option Plan were consolidated into the 2008 Plan and are subject to, and administered under the terms of the 2008 Plan. Upon the effectiveness of the 2013 Omnibus Incentive Plan (the 2013 Plan), no new awards may be granted under the 2008 Plan. As of December 31, 2013, there were 2,554,648 stock options outstanding under the 2008 Plan.

On July 26, 2013, the Company adopted the 2013 Plan for employees and nonemployees pursuant to which the Company s board of directors may grant share based awards, including stock options and shares of common stock, to employees, officers, consultants, advisors, and nonemployee directors. The 2013 Plan became effective upon the closing of the IPO and 7,000,000 shares of common stock are reserved for issuance under the 2013 Plan. As of December 31, 2013, there were 286,000 stock options outstanding under the 2013 Plan, and there were 6,712,435 remaining shares available for the Company to grant under the 2013 Plan.

Stock options may be granted with an exercise price equal to or greater than the stock s fair market value at the date of grant. Stock options may be granted with an exercise price less than the stock s fair market value at the date of grant if the stock options are replacement options in accordance with certain U.S. Treasury regulations. Virtually all stock options have ten-year terms and vest no more than four years from the date of grant.

The Company uses the Black-Scholes option pricing model to estimate the grant-date fair value of all stock options. The Black-Scholes option pricing model requires the use of assumptions for estimated expected volatility, estimated expected term of stock options, risk-free rate, estimated expected dividend yield, and the fair value of the underlying common stock at the date of grant. Since the Company does not have sufficient history to estimate the expected volatility of our common stock price, expected volatility is based on the average volatility of peer public entities that are similar in size and industry. The Company estimates the expected term of all options based on previous history of exercises. The risk-free rate is based on the U.S. Treasury yield curve in effect at the time of grant for the expected term of the option. The expected dividend yield is 0% as the Company has not declared any common stock dividends to date and does not expect to declare common stock dividends in the near future. Prior to the Company s IPO, the fair value of the underlying common stock is determined based on a valuation of the Company s common stock. Subsequent to the Company s IPO, the fair value of the underlying common stock is determined based on the quoted market price on the NYSE. Actual forfeitures are recorded when incurred and estimated forfeitures are reviewed and adjusted at least annually. The assumptions used in the Black-Scholes option pricing model for the years ended December 31, 2013, 2012 and 2011 are set forth below:

	2013	2012	2011
Valuation assumptions			
Expected dividend yield	0%	0%	0%
Expected volatility	73% 75%	71% 76%	68% 72%
Expected term (years)	6.25	6.00	5.37 6.23
Risk-free interest rate	0.96% 1.86%	0.80% 1.10%	1.34% 2.51%

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Stock option activity was as follows:

	Number of shares	Weighted average exercise price	Weighted average remaining contractual term
Balances at December 31, 2010	1,448,145	$ 2.71	6.99
Granted	2,429,684	6.48	
Exercised	(75,840)	(2.43)	
Forfeited	(145,214)	(3.34)	
Expired	(42,245)	(2.94)	
Balances at December 31, 2011	3,614,530	5.22	6.67
Granted	548,571	7.12	
Exercised	(194,570)	(2.43)	
Forfeited	(1,210,857)	(6.30)	
Expired	(444,148)	(2.29)	
Balances at December 31, 2012	2,313,526	5.90	7.87
Granted	989,709	13.06	
Exercised	(88,764)	(6.04)	
Forfeited	(335,746)	(6.94)	
Expired	(38,077)	(5.17)	
Balances at December 31, 2013	2,840,648	8.27	7.75
Exercisable at December 31, 2013	1,227,563	5.37	6.44
Vested and Expected to Vest at December 31, 2013(1)	2,469,860	7.80	7.57

(1) The number of stock options expected to vest takes into account an estimate of expected forfeitures.

Total unrecognized compensation costs related to nonvested awards at December 31, 2013, 2012 and 2011 were $9,639, $4,910 and $6,347, respectively, and are expected to be recognized over a weighted-average period of approximately three years.

The weighted average grant date fair value of options granted during 2013, 2012 and 2011 was $12.91, $4.60 and $4.13, respectively. The aggregate intrinsic value of options exercised during 2013, 2012 and 2011 was $1,136, $913 and $264, respectively. The aggregate intrinsic value of options is calculated as the difference between the exercise price of the underlying options and the fair value of the Company s common stock for those shares that had exercise prices lower than the fair value of the Company s common stock.

The following table summarizes additional information about stock options outstanding as of December 31, 2013:

	Options outstanding			Options exercisable		
Exercise price	Number of options	Weighted average remaining life (years)	Aggregate intrinsic value	Number of options	Weighted average remaining life (years)	Aggregate intrinsic value
$0.39	57,263	5.72	$ 1,341	57,263	5.72	$ 1,341
$1.34	106,776	2.10	2,398	106,776	2.10	2,398
$1.92	12,855	3.22	281	12,855	3.22	281
$2.74	175,040	3.66	3,686	175,040	3.66	3,686
$3.29	156,055	6.14	3,201	143,411	6.10	2,941
$5.91	150,062	7.15	2,685	75,771	7.07	1,356
$7.12	1,194,887	7.80	19,931	546,805	7.77	9,121
$9.67	701,710	9.41	9,915	107,142	9.41	1,514
$19.83	225,500	9.96	895			
$26.76	42,500	9.69				
$28.69	18,000	9.62		2,500	9.62	
	2,840,648	7.75	$ 44,333	1,227,563	6.44	$ 22,638

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The following table summarizes additional information about stock options outstanding as of December 31, 2012:

	Options outstanding			Options exercisable		
Exercise price	Number of options	Weighted average remaining life (years)	Aggregate intrinsic value	Number of options	Weighted average remaining life (years)	Aggregate intrinsic value
$0.39	57,263	8.07	$ 385	57,263	8.07	$ 385
$1.34	106,776	3.10	617	106,776	3.10	617
$1.92	23,145	4.25	120	23,145	4.25	120
$2.74	186,286	4.62	815	186,286	4.62	815
$3.29	183,442	6.77	703	126,014	6.72	483
$5.91	169,857	7.64	205	42,571	7.59	51
$7.12	1,586,757	8.77		266,578	8.53	
	2,313,526	7.87	$ 2,845	808,633	6.43	$ 2,471

The Company currently uses authorized and unissued shares to satisfy share award exercises.

AquaBounty Stock Option Plan

The AquaBounty 2006 Equity Incentive Plan (the AquaBounty Plan) provides for the issuance of incentive stock options to employees of AquaBounty and non-qualified stock options and awards of restricted and direct stock purchases to its directors, officers, employees and consultants of AquaBounty. Unless otherwise indicated, options issued to employees, directors and non-employees are vested over one to three years and are exercisable for a term of ten years from the date of issuance. As of December 31, 2013, there were 6,624,000 options outstanding under the AquaBounty Plan at a weighted average exercise price of $0.25 per share of which 6,052,000 were exercisable. Stock based compensation cost for the year ended December 31, 2013 amounted to $109 and is included in general and administrative expenses.

14. Commitments and Contingencies

Operating Leases

The Company leases its facilities and certain equipment under noncancelable operating leases. The equipment leases are renewable at the option of the Company. At December 31, 2013, future minimum lease payments under noncancelable operating leases having initial or remaining noncancelable lease terms in excess of one year are as follows:

2014	$ 3,661
2015	3,408
2016	2,687
2017	1,419

2018	72
	11,247

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Rent expense, including other facility expenses, was $5,577, $5,036 and $4,000 in 2013, 2012 and 2011, respectively.

The Company maintains subleases for certain of its facilities. Rental income under sublease agreements was $365, $151 and $158 for the years ended December 31, 2013, 2012 and 2011, respectively. Future rental income is $365 for 2014 and $152 for 2015.

Capital Leases

The Company leases certain lab equipment, computer equipment, and leasehold improvements under capital leases. At December 31, 2013, future minimum lease payments under capitalized lease obligations are insignificant.

Long-Term Debt

In January 2009, the Atlantic Canada Opportunities Agency (ACOA), a Canadian government agency, awarded AquaBounty a grant to provide funding of a research and development project. The total amount available under the award is $2,685, which AquaBounty can claim over a five year period. All amounts claimed by AquaBounty must be repaid in the form of a 10% royalty on any products commercialized out of this research and development project until fully paid. Because the timing of commercialization is subject to regulatory approval, the timing of repayment is uncertain. As of the acquisition date, AquaBounty had claimed $1,952 of the available funds and this amount was recorded at its acquisition date fair value of $1,107 (Note 7). The Company accretes the difference of $845 between the face value of amounts drawn and the acquisition date fair value over the expected period of repayment. Since the acquisition date and through December 31, 2013, AquaBounty has made subsequent claims of $486 resulting in total long-term debt of $1,653 as of December 31, 2013.

In November 1999, Technology Partnership Canada (TPC), a Canadian government agency, agreed to provide AquaBounty funding up to $2,772, to support AquaBounty s research and development. This amount is repayable to TPC in the form of a 5.2% royalty on revenues generated from AquaBounty s technology through June 30, 2014. Because no amounts are likely to be required to be repaid prior to June 30, 2014, no amounts are recorded on the consolidated balance sheet as December 31, 2013.

Contingencies

The Company may become subject to claims and assessments from time to time in the ordinary course of business. Such matters are subject to many uncertainties and outcomes are not predictable with assurance. The Company accrues liabilities for such matters when it is probable that future expenditures will be made and such expenditures can be reasonably estimated. As of December 31, 2013 and 2012, the Company does not believe that any such matters, individually or in the aggregate, will have a material adverse effect on the Company s business, financial condition, results of operations, or cash flows.

15. Related Party Transactions

Third Security, LLC (Third Security) and Affiliates

Certain affiliates of Third Security were shareholders of the Series B, B-1, C, C-1, C-2, C-3, D, E, and F Redeemable Convertible Preferred Stock.

On April 8, 2011, in anticipation of the closing of Series E, the Company issued convertible promissory notes with borrowings up to $25,000 to affiliates of Third Security. Terms of the notes included 12% simple interest annually

with principal and interest due on or before June 30, 2011. The principal amount and all accrued interest automatically convert to shares of Series E upon the first sale of Series E. The Company borrowed $15,000 on the notes. The principal amount plus accrued interest of $165 was converted into 2,888,635 shares of Series E on May 26, 2011.

On June 6, 2011, the Company entered into a worldwide exclusive licensing agreement with Halozyme Therapeutics, Inc. (Halozyme) for the use of Halozyme s proprietary enzyme in one of the Company s targeted therapeutics. The Company and Halozyme are related parties through common ownership by affiliates of Third Security. The Company s CEO also serves on Halozyme s board of directors. Under the terms of the agreement, the Company paid a license fee of $9,000 upon execution of the agreement, which is recorded in research and

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development expenses on the accompanying consolidated statement of operations. The Company is required to pay an annual exclusivity fee of $1,000 commencing June 6, 2012 and on each anniversary of the effective date of the agreement thereafter until a certain development event occurs. If the Company successfully develops a product candidate using the license in the exclusive field of use and achieves an established sales target, the Company could pay up to $54,000 in milestone payments. The Company is obligated to pay tiered royalties on net sales of the approved product. The Company may terminate this agreement in whole or on a product-by-product basis at any time upon 30 days written notice to Halozyme.

Effective August 31, 2011, the Company entered into an asset purchase agreement with Cyntellect, Inc. (Cyntellect) to purchase the assets required to operate Cyntellect s cell processing platform business and assume certain liabilities related to the assets acquired, including assumption of the remaining term on the facility lease. The Company anticipates using the assets acquired to establish the capability to develop proprietary cell lines to be used internally by the Company or with the Company s collaborative partners. As consideration for the asset purchase, the Company issued 2,386,803 shares of its common stock valued at $17,000. Cyntellect was a related party and under common control by affiliates of Third Security. The Company recorded the transaction as a transaction between entities under common control using the guidance in ASC Subtopic 805-50, *Business Combinations: Related Issues* (ASC 805-50). ASC 805-50 requires that assets acquired and liabilities assumed be recorded on the transaction date at the carrying amount in the accounts of the transferring entity. The carrying amounts of the assets acquired and liabilities assumed is as follows:

Cash	$ 88
Other current assets	23
Property and equipment, net	1,724
Other assets	262
Total assets acquired	2,097
Accounts payable	41
Other accrued liabilities	107
Long-term debt	116
Total liabilities assumed	264
Net assets acquired	$ 1,833

ASC 805-50 also requires that results of operations be presented as if the transaction occurred at the beginning of the period and represent the combined operations of both entities. Financial statements and financial information presented for prior years in which the entities were under common control should also be retrospectively adjusted to furnish comparative information as if the entities were combined. The Company applied these presentation requirements of ASC 805-50.

The Company paid $128 of costs associated with this asset purchase, which are included in general and administrative expenses in the accompanying consolidated statement of operations for the year ended December 31, 2011.

The Manager of Third Security is also the Chief Executive Officers (CEO) and Chairman of the Board of the Company. The CEO has not received compensation for his services as CEO, and as a result, the Company recorded

$1,550, $1,550 and $210 in compensation expense for the years ended December 31, 2013, 2012 and 2011, respectively, based on the estimated salary and benefits appropriate for the role.

Transactions with Other Shareholders

At December 31, 2013 and 2012, the Company leased two office facilities from an affiliate of certain shareholders. The Company has a receivable due from this affiliate in the form of security deposits which are included in other long term assets of $66 at December 31, 2013 and 2012. During 2013, 2012 and 2011, the Company incurred rent and other facility expenses of $918, $903 and $783, respectively.

The Company contracts with a shareholder to provide certain research and clinical services. During the years ended December 31, 2013, 2012 and 2011, the Company incurred total expenses for work performed under such contract of $152, $91 and $202, respectively, none of which was payable at December 31, 2013 and 2012.

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In 2011, the Company paid a transaction fee in conjunction with the closing of its Series E to a financial services firm who employs certain shareholders of the Company.

Transactions with ECC Parties

On January 6, 2011, in conjunction with the ECC with Ziopharm (Note 4), the Company purchased 2,426,235 shares of common stock at $4.80 per share at closing in a private placement. The Company agreed to purchase up to an additional $50,000 of common stock in conjunction with securities offerings that may be conducted by Ziopharm in the future, subject to certain conditions and limitations. On February 7, 2011, the Company purchased 1,910,000 shares of Ziopharm common stock at $5.75 per share in the first such securities offering. On January 20, 2012, the Company purchased 1,923,075 shares of Ziopharm common stock at $5.20 per share in another securities offering. On October 29, 2013, the Company purchased 2,857,143 shares of Ziopharm common stock at $3.50 per share in a securities offering. At December 31, 2013, the Company had approximately $19,000 remaining on its purchase commitment. In conjunction with the ECC and the initial share purchase, the CEO of the Company joined the board of directors of Ziopharm.

In conjunction with the ECC with Synthetic Biologics (Note 4), the Company is entitled to, at its election, purchase up to 19.99% of securities offerings that may be conducted by Synthetic Biologics in the future, subject to certain conditions and limitations. On December 17, 2013, the Company purchased 2,000,000 shares of Synthetic Biologics common stock at $1.00 per share in a securities offering under this right. The Company has been granted the right to make purchases of Synthetic Biologics common stock in the open market up to an additional 10% of Synthetic Biologics common stock, but has made no such purchases.

In conjunction with the ECC with Oragenics (Note 4), the Company is entitled to, at its election, purchase up to 30% of securities offerings that may be conducted by Oragenics in the future, subject to certain conditions and limitations. On November 20, 2013, the Company purchased 1,100,000 shares of Oragenics common stock at $2.50 per share under this right. On September 30, 2013, the Company purchased 1,300,000 shares of Oragenics common stock at $3.00 per share in a private transaction.

On October 1, 2013, the Company purchased 2,439,024 shares of Fibrocell common stock at $4.10 per share.

In conjunction with an ECC with another collaborator, the Company is entitled to, at its election, participate in securities offerings conducted by the collaborator in the future, subject to certain conditions and limitations. The Company has made no purchases of the collaborator s common stock.

16. Net Loss per Share

The following table presents the historical computation of basic and diluted net loss per share:

	Year ended December 31,		
	2013	**2012**	**2011**
Historical net loss per share:			
Numerator:			
Net loss	$ (38,980)	$ (81,874)	$ (85,280)

Add: Accretion of dividends on redeemable convertible preferred stock	(18,391)	(21,994)	(13,868)
Net loss attributable to common shareholders	(57,371)	(103,868)	(99,148)
Denominator:			
Weighted average shares outstanding, basic and diluted	40,951,952	5,533,690	5,240,647
Net loss attributable to common shareholders per share, basic and diluted	$ (1.40)	$ (18.77)	$ (18.92)

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The following potentially dilutive securities have been excluded from the computations of diluted weighted average shares outstanding as of December 31, 2013, 2012, and 2011, as they would have been anti-dilutive:

	December 31,		
	2013	2012	2011
Common shares issuable upon conversion of all Series Preferred		64,517,977	55,483,966
Options	2,840,648	2,313,526	3,614,530
Warrants	414,404	511,098	511,098
Total	3,255,052	67,342,601	59,609,594

In addition to the potentially dilutive securities in the table above, Series Preferred cumulative dividends convertible into common shares at a price per share equal to the fair market value of a common share at the time of conversion have been excluded from the computation of diluted weighted-average shares outstanding as of December 31, 2012 and 2011.

17. Quarterly Financial Information (Unaudited)

The following information has been derived from unaudited consolidated statements that, in the opinion of management, include all recurring adjustments necessary for a fair statement of such information.

	Three Months Ended			
	March 31, 2013	June 30, 2013	September 30, 2013	December 31, 2013
Total revenues	$ 3,885	$ 6,690	$ 6,042	$ 7,143
Operating loss	$ (14,006)	$ (14,254)	$ (12,037)	$ (17,726)
Net income (loss)	$ (36,362)	$ (6,519)	$ 14,991	$ (13,018)
Net income (loss) attributable to Intrexon	$ (36,311)	$ (5,905)	$ 15,440	$ (12,204)
Net income (loss) attributable to common shareholders per share, basic	$ (7.54)	$ (2.44)	$ 0.15	$ (0.13)
Net income (loss) attributable to common shareholders per share, diluted	$ (7.54)	$ (2.44)	$ 0.15	$ (0.13)

	Three Months Ended			
	March 31, 2012	June 30, 2012	September 30, 2012	December 31, 2012
Total revenues	$ 1,564	$ 2,716	$ 2,925	$ 6,569
Operating loss	$ (25,121)	$ (21,248)	$ (16,485)	$ (12,303)
Net loss	$ (13,912)	$ (16,535)	$ (20,490)	$ (30,937)
	$ (3.55)	$ (3.99)	$ (4.66)	$ (6.52)

Net loss attributable to common shareholders per share, basic and diluted

18. Defined Contribution Plan

The Company sponsors a defined contribution plan covering employees who meet certain eligibility requirements. The Company makes contributions to the plan in accordance with terms specified in the plan agreement. The Company s contributions to the plan were $598, $755 and $433 in 2013, 2012 and 2011, respectively.

19. Subsequent Events

The Company applies the provisions of ASC 855, Subsequent Events (ASC 855), which provides general standards of accounting for and disclosures of events that occur after the consolidated balance sheet date, but before consolidated financial statements are issued or are available to be issued. The Company evaluated subsequent events that occurred after December 31, 2013 up through the date the consolidated financial statements were issued.

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On March 4, 2014, the Company entered into a lease for lab operations. The lease term will begin on the later of September 1, 2014 or the date the facility is ready of occupancy and terminates approximately seven years from the lease commencement date. The Company is not required to pay rent the first six months of the lease term. Total annual rental payments, assuming a lease commencement date of November 1, 2014, are $575, $1,153, $1,188, $1,223 and $3,665 for the years ended December 31, 2015, 2016, 2017, and 2018 and period thereafter, respectively. The Company is also responsible for its pro-rata share of building operating expenses.

On March 6, 2014, the Company acquired California-based Medistem, Inc. (Medistem) for approximately $24,600 in cash and Company common stock. Under the terms of the agreement, Medistem stockholders received in exchange for each share of Medistem common stock $0.27 in cash and $1.08 worth of the Company s common stock, or approximately 0.03920 shares, based on the 20-day volume-weighted average price of the Company s common stock immediately prior to closing, subject to adjustment pursuant to the terms of the merger agreement.

On March 20, 2014, the Company acquired 19,040,366 additional shares of AquaBounty common stock for $10,000 in a private subscription offering, thereby increasing the Company s aggregate ownership in AquaBounty to 59.85% upon closing.

From January 1, 2014 through March 20, 2014, the Company granted 5,950,000 stock options from the 2013 Plan to employees and nonemployee directors. On March 20, 2014, the Company s board of directors authorized, subject to shareholder approval, the number of shares reserved for issuance under the 2013 Plan to be increased by 3,000,000 shares.

On March 26, 2014, the Company announced the formation of Intrexon Energy Partners, LLC (IEP), a joint venture between the Company and a select group of external investors, to scale-up the Company s gas-to-liquid bioconversion platform for the production of fuels and lubricants. The Company entered into a worldwide ECC with IEP and received a technology access fee of $25,000. Additionally, the Company entered into securities purchase agreements with the external investors in IEP for the private placement of 972,004 shares of the Company s common stock at a price per share of $25.72 for gross proceeds of $25,000.

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ZIOPHARM Oncology, Inc.

(a development stage enterprise)

Financial Statements

December 31, 2013, 2012 and 2011

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of

ZIOPHARM Oncology, Inc.

Boston, Massachusetts

We have audited the accompanying balance sheets of ZIOPHARM Oncology, Inc. (a development stage company) as of December 31, 2013 and 2012, and the related statements of operations, changes in preferred stock and stockholders equity, and cash flows for each of the three years in the period ended December 31, 2013, and for the period from September 9, 2003 (date of inception) through December 31, 2013. ZIOPHARM Oncology, Inc. s management is responsible for these financial statements. Our responsibility is to express an opinion on these financial statements based on our audits.

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

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of ZIOPHARM Oncology, Inc. as of December 31, 2013 and 2012, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2013 and from and from September 9, 2003 (date of inception) through December 31, 2013, in conformity with accounting principles generally accepted in the United States of America.

/s/ McGladrey LLP

Boston, Massachusetts

March 3, 2014

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ZIOPHARM Oncology, Inc. ***(a development stage enterprise)***

BALANCE SHEETS

(in thousands, except share and per share data)

	December 31, 2013	December 31, 2012
ASSETS		
Current assets:		
Cash and cash equivalents	$ 68,204	$ 73,306
Receivables	145	58
Prepaid expenses and other current assets	1,948	6,912
Total current assets	70,297	80,276
Property and equipment, net	801	1,994
Deposits	128	133
Other non current assets	528	1,001
Total assets	$ 71,754	$ 83,404
LIABILITIES AND STOCKHOLDERS EQUITY		
Current liabilities:		
Accounts payable	$ 422	$ 1,509
Accrued expenses	6,357	16,516
Deferred revenue current portion	800	800
Deferred rent current portion	212	39
Total current liabilities	7,791	18,864
Deferred revenue	1,933	2,733
Deferred rent	851	400
Warrant liabilities	11,776	12,962
Other long term liabilities	20	
Total liabilities	$ 22,371	$ 34,959
Commitments and contingencies (note 8)		
Stockholders equity:		
Preferred stock, $0.001 par value; 30,000,000 shares authorized and no shares issued and outstanding	$	$
Common stock, $0.001 par value; 250,000,000 shares authorized; 100,159,618 and 83,236,840 shares issued and outstanding at December 31, 2013 and 2012, respectively	100	83
Additional paid-in capital common stock	386,511	325,177
Additional paid-in capital warrants issued	3,603	6,909
Deficit accumulated during the development stage	(340,831)	(283,724)
Total stockholders equity	49,383	48,445
Total liabilities and stockholders equity	$ 71,754	$ 83,404

The accompanying notes are an integral part of these financial statements.

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ZIOPHARM Oncology, Inc. ***(a development stage enterprise)***

STATEMENTS OF OPERATIONS

(in thousands, except share and per share data)

	For the Year Ended December 31,			Period from September 9, 2003 (date of inception) through December 31, 2013
	2013	2012	2011	
Revenue	$ 800	$ 800	$ 667	$ 2,267
Operating expenses:				
Research and development	42,852	83,446	57,083	255,197
General and administrative	15,661	19,523	14,984	103,979
Total operating expenses	58,513	102,969	72,067	359,176
Loss from operations	(57,713)	(102,169)	(71,400)	(356,909)
Other income (expense), net	(579)	(13)	39	4,122
Change in fair value of warrants	1,185	6,050	7,583	11,956
Net loss	$ (57,107)	$ (96,132)	$ (63,778)	$ (340,831)
Basic and diluted net loss per share	$ (0.66)	$ (1.22)	$ (0.97)	
Weighted average common shares outstanding used to compute basic and diluted net loss per share	85,943,175	78,546,112	66,003,789	

The accompanying notes are an integral part of these financial statements.

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ZIOPHARM Oncology, Inc. ***(a development stage enterprise)***

STATEMENTS OF CHANGES IN PREFERRED STOCK

AND STOCKHOLDERS EQUITY (DEFICIT)

For the Period September 9, 2003 (date of inception) to December 31, 2013

(in thousands, except share and per share data)

	Preferred Stock and Warrants		Stockholders Equity (Deficit)					
	Series A Preferred Stock Shares	Amount	Warrants to Purchase Series A Preferred Stock Warrants	Common Stock Shares	Amount	Additional Paid-in Capital Common Stock	Additional Paid-in Capital Warrants	Deficit Accumulated During the Development Stage	Total Stockholders Equity/ (Deficit)
Stockholders contribution, September 9, 2003	$	$		250,487	$	$ 500	$	$	$ 500
Net loss								(160)	(160)
Balance at December 31, 2003				250,487		500		(160)	340
Issuance of common stock				2,254,389	2	4,498			4,500
Issuance of common stock for services				256,749	1	438			439
Fair value of options/warrants issued for nonemployee services						13	251		264
Net loss								(5,687)	(5,687)
Balance at December 31, 2004				2,761,625	3	5,449	251	(5,847)	(144)

The accompanying notes are an integral part of these financial statements.

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ZIOPHARM Oncology, Inc. ***(a development stage enterprise)***

STATEMENTS OF CHANGES IN CONVERTIBLE PREFERRED STOCK

AND STOCKHOLDERS EQUITY (DEFICIT) (Cont.)

For the Period September 9, 2003 (date of inception) to December 31, 2013

(in thousands, except share and per share data)

	Convertible Preferred Stock and Warrants			Stockholder s Equity (Deficit)					
	Series A Convertible Preferred Stock Shares	Series A Convertible Preferred Stock Amount	Warrants to Purchase Series A Convertible Preferred Stock Warrants	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital Common Stock	Additional Paid-in Capital Warrants	Deficit Accumulated During the Development Stage	Total Stockholders Equity/ (Deficit)
Issuance of Series A convertible preferred stock (net of expenses of $1,340 and warrant cost of $1,683)	4,197,946	15,077							15,077
Fair value of warrants to purchase Series A convertible preferred stock			1,683						1,683
Issuance of common stock to EasyWeb Stockholders				189,922					
Conversion of Series A convertible preferred stock @ $0.001 into $0.001 common stock on September 13,	(4,197,946)	(15,077)	(1,683)	4,197,823	4	15,073	1,683		

2005 at an exchange ratio of ..500974						
Issuance of common stock for options	98,622		4			4
Fair value of options/warrants issued for nonemployee services			54	45		99
Net loss					(9,517)	(9,517)
Balance at December 31, 2005	7,247,992	7	20,580	1,979	(15,364)	7,202

The accompanying notes are an integral part of these financial statements.

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ZIOPHARM Oncology, Inc. ***(a development stage enterprise)***

STATEMENTS OF CHANGES IN PREFERRED STOCK

AND STOCKHOLDERS EQUITY (DEFICIT) (Cont.)

For the Period September 9, 2003 (date of inception) to December 31, 2013

(in thousands, except share and per share data)

	Preferred Stock and Warrants		Stockholders Equity (Deficit)					
	Series A Preferred Stock Shares	Series A Preferred Stock Amount	Warrants to Purchase Series A Preferred Stock Warrants	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital Common Stock	Additional Paid-in Capital Warrants	Deficit Accumulated During the Development Stage	Total Stockholders Equity/ (Deficit)
Issuance of common stock in private placement, net of expenses $2,719				7,991,256	8	21,180			21,188
Issuance of warrants							13,092		13,092
Issuance of common stock for services rendered				25,000		106			106
Stock-based compensation for employees						2,777			2,777
Issuance of common stock due to exercise of stock options				5,845		25			25
Issuance of common stock due to exercise of stock warrants				2,806					
Net loss								(17,857)	(17,857)
Balance at December 31, 2006				15,272,899	15	44,668	15,071	(33,221)	26,533
Issuance of common stock in private placement, net of expenses $1,909				5,910,049	6	23,532			23,538
Issuance of warrants							5,433		5,433

Stock-based compensation for employees			1,318			1,318
Stock-based compensation for non-employee			120			120
Issuance of common stock for stock options	46,016		36			36
Issuance of restricted stock	70,000					
Net Loss					(26,608)	(26,608)
Balance at December 31, 2007	21,298,964	21	69,674	20,504	(59,829)	30,370

The accompanying notes are an integral part of these financial statements.

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ZIOPHARM Oncology, Inc. ***(a development stage enterprise)***

STATEMENTS OF CHANGES IN PREFERRED STOCK

AND STOCKHOLDERS EQUITY (DEFICIT) (Cont.)

For the Period September 9, 2003 (date of inception) to December 31, 2013

(in thousands, except share and per share data)

	Preferred Stock and Warrants		Stockholder s Equity (Deficit)					
	Series A Preferred Stock Shares	Series A Preferred Stock Amount	Warrants to Purchase Series A Preferred Stock Warrants	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital Common Stock	Additional Paid-in Capital Warrants	Deficit Accumulated During the Development Stage	Total Stockholders Equity/ (Deficit)
Stock-based compensation						1,600			1,600
Issuance of restricted common stock				586,500	1	(1)			
Forfeiture of unvested restricted common stock				(25,000)					
Other						1		(1)	
Net loss								(25,231)	(25,231)
Balance at December 31, 2008				21,860,464	22	71,274	20,504	(85,061)	6,739
Cumulative effect of a change in accounting principle January 1, 2009 reclassification of warrants to warrant liabilities							(1,638)	1,566	(72)
Stock-based compensation						2,181			2,181
Forfeiture of unvested restricted common stock				(69,500)					
Issuance of common stock and warrants in a private placement, net				2,772,337	3	385	4,207		4,595

of expenses $465						
Issuance of common stock and warrants in a registered direct offering, net of commission and expenses of $2,802 and warrants of $22,860	15,484,000	15	22,323			22,338
Exercise of warrants to purchase common stock	136,986		279			279
Exercise of employee stock options	102,564		73			73
Issuance of restricted common stock	1,400,500	2	(2)			
Repurchase of shares of restricted common stock	(103,823)		(380)			(380)
Net loss					(7,649)	(7,649)
Balance at December 31, 2009	41,583,528	42	96,133	23,073	(91,144)	28,104

The accompanying notes are an integral part of these financial statements.

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ZIOPHARM Oncology, Inc. ***(a development stage enterprise)***

STATEMENTS OF CHANGES IN PREFERRED STOCK

AND STOCKHOLDERS EQUITY (DEFICIT) (Cont.)

For the Period September 9, 2003 (date of inception) to December 31, 2013

(in thousands, except share and per share data)

	Preferred Stock and Warrants		Stockholders Equity (Deficit)					
	Series A Preferred Stock Shares	Series A Preferred Stock Amount	Warrants to Purchase Series A Preferred Stock Warrants	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital Common Stock	Additional Paid-in Capital Warrants	Deficit Accumulated During the Development Stage	Total Stockholders Equity/ (Deficit)
Stock-based compensation						3,637			3,637
Issuance of common stock in a registered direct offering, net of commission and expenses of $2,203				7,000,000	7	32,797			32,804
Exercise of warrants to purchase common stock				39,225		360	(239)		121
Exercise of employee stock options				196,167		225			225
Issuance of restricted common stock				115,000					
Repurchase of shares of restricted common stock				(416,108)	(1)	(1,667)			(1,668)
Cancelled restricted stock				(51,250)					
Expired warrants						45	(45)		
Net loss								(32,670)	(32,670)
Balance at December 31, 2010				48,466,562	48	131,530	22,789	(123,814)	30,553
Stock-based compensation						2,759			2,759

Issuance of common stock in a securities offering, net of commission and expenses of $245	11,040,000	11	59,795			59,806
Issuance of common stock in a collaboration agreement net of commission and expenses of $86	6,063,161	6	28,852			28,858
Exercise of warrants to purchase common stock	2,377,571	2	21,766	(9,067)		12,701
Exercise of employee stock options	479,666	1	980			981
Exercise of non-employee stock options	6,904					
Issuance of restricted common stock	848,406	1	(1)			
Repurchase of shares of restricted common stock	(59,559)		(273)			(273)
Cancelled restricted stock	(16,667)					
Expired warrants			1,111	(1,111)		
Net loss					(63,778)	(63,778)
Balance at December 31, 2011	69,206,044	69	246,519	12,611	(187,592)	71,607

The accompanying notes are an integral part of these financial statements.

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ZIOPHARM Oncology, Inc. ***(a development stage enterprise)***

STATEMENTS OF CHANGES IN PREFERRED STOCK

AND STOCKHOLDERS EQUITY (DEFICIT) (Cont.)

For the Period September 9, 2003 (date of inception) to December 31, 2013

(in thousands, except share and per share data)

	Preferred Stock and Warrants		Stockholders Equity (Deficit)					
	Series A Preferred Stock Shares	Series A Preferred Stock Amount	Warrants to Purchase Series A Preferred Stock Warrants	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital Common Stock	Additional Paid-in Capital Warrants	Deficit Accumulated During the Development Stage	Total Stockholders Equity/ (Deficit)
Stock-based compensation						4,880			4,880
Issuance of common stock in a securities offering, net of commission and expenses of $3,426				10,114,401	11	49,159			49,170
Exercise of warrants to purchase common stock				259,660		1,011	(269)		742
Exercise of employee stock options				8,300		30			30
Issuance of restricted common stock				258,032					
Repurchase of shares of restricted common stock				(123,153)		(546)			(546)
Cancelled restricted stock				(123,370)					
Expired warrants						5,433	(5,433)		
Issuance of common stock in a collaboration agreement				3,636,926	3	18,691			18,694

Net Loss							(96,132)	(96,132)
Balance at December 31, 2012	$	$	83,236,840	$ 83	$ 325,177	$ 6,909	$ (283,724)	$ 48,445

The accompanying notes are an integral part of these financial statements.

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ZIOPHARM Oncology, Inc. ***(a development stage enterprise)***

STATEMENTS OF CHANGES IN PREFERRED STOCK

AND STOCKHOLDERS EQUITY (DEFICIT) (Cont.)

For the Period September 9, 2003 (date of inception) to December 31, 2013

(in thousands, except share and per share data)

	Series A Preferred Stock Shares	Series A Preferred Stock Amount	Purchase Warrants	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital Common Stock	Additional Paid-in Capital Warrants	Deficit Accumulated During the Development Stage	Total Stockholders Equity/ (Deficit)
Stock-based compensation						3,507			3,507
Issuance of common stock, net of commission and expenses of $3,678				16,445,000	16	53,864			53,880
Exercise of warrants to purchase common stock				112,808		396	(196)		200
Exercise of employee stock options				570,168	1	955			956
Issuance of restricted common stock				75,272					
Repurchase of shares of restricted common stock				(116,723)		(498)			(498)
Cancelled of restricted stock				(163,747)					
Expired warrants						3,110	(3,110)		
Net Loss								(57,107)	(57,107)
Balance at December 31, 2013	$	$		100,159,618	$ 100	$ 386,511	$ 3,603	$ (340,831)	$ 49,383

The accompanying notes are an integral part of these financial statements.

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ZIOPHARM Oncology, Inc. ***(a development stage enterprise)***

STATEMENTS OF CASH FLOWS

(in thousands)

	For the Year Ended December 31,			Period from September 9, 2003 (date of inception) through December 31, 2013
	2013	2012	2011	
Cash flows from operating activities:				
Net loss	$ (57,107)	$ (96,132)	$ (63,778)	$ (340,831)
Adjustments to reconcile net loss to net cash used in operating activities:				
Depreciation and amortization	738	658	268	3,313
Stock-based compensation	3,507	4,880	2,759	23,688
Change in fair value of warrants	(1,185)	(6,050)	(7,583)	(11,956)
Loss on disposal of fixed assets	585	48		641
Common stock issued in exchange for in-process research and development		18,694	17,457	36,151
Change in operating assets and liabilities:				
(Increase) decrease in:				
Receivables	(87)	21	(79)	(145)
Prepaid expenses and other current assets	4,964	(5,599)	(889)	(1,948)
Other noncurrent assets	473	(230)	(407)	(528)
Deposits	4	(43)	(4)	(128)
Increase (decrease) in:				
Accounts payable	(1,087)	(218)	696	422
Accrued expenses	(10,159)	5,695	8,283	6,357
Deferred revenue	(800)	(800)	4,333	2,733
Deferred rent	625	244	109	1,063
Other noncurrent liabilities	20			20
Net cash used in operating activities	(59,509)	(78,832)	(38,835)	(281,148)
Cash flows from investing activities:				
Purchases of property and equipment	(132)	(1,559)	(1,156)	(4,758)
Proceeds from sale of property and equipment	1			2
Net cash used in investing activities	(131)	(1,559)	(1,156)	(4,756)
Cash flows from financing activities:				
Stockholders capital contribution				500
Proceeds from exercise of stock options	956	30	980	2,329
Payments to employees for repurchase of restricted common stock	(498)	(546)	(274)	(3,364)
Proceeds from exercise of warrants	200	330	12,399	13,278

Proceeds from issuance of common stock and warrants, net	53,880	49,170	71,207	324,605
Proceeds from issuance of preferred stock, net				16,760
Net cash provided by financing activities	54,538	48,984	84,312	354,108
Net increase (decrease) in cash and cash equivalents	(5,102)	(31,407)	44,321	68,204
Cash and cash equivalents, beginning of period	73,306	104,713	60,392	
Cash and cash equivalents, end of period	$ 68,204	$ 73,306	$ 104,713	$ 68,204
Supplementary disclosure of cash flow information:				
Cash paid for interest	$	$	$	$
Cash paid for income taxes	$	$	$	$
Supplementary disclosure of noncash investing and financing activities:				
Warrants issued to placement agents and investors	$	$	$	$ 47,276
Preferred stock conversion to common stock	$	$	$	$ 16,760
Exercise of equity-classified warrants to common shares	$ 196	$ 269	$ 9,067	$ 9,789
Exercise of liability-classified warrants to common shares	$	$ 412	$ 303	$ 764

The accompanying notes are an integral part of these financial statements.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

1. Organization

ZIOPHARM Oncology, Inc., which we refer to as ZIOPHARM or the Company , is a biopharmaceutical company that seeks to acquire, develop and commercialize, on its own or with commercial partners, a diverse portfolio of cancer therapies that can address unmet medical needs through synthetic biology.

The Company s operations to date have consisted primarily of raising capital and conducting research and development. Accordingly, the Company is considered to be in the development stage at December 31, 2013. The Company s fiscal year ends on December 31.

The Company has operated at a loss since its inception in 2003 and has minimal revenues. The Company anticipates that losses will continue for the foreseeable future. At December 31, 2013, the Company s accumulated deficit was approximately $340.8 million. Based upon our current plans, we anticipate that our cash resources will be sufficient to fund our operations into the second quarter of 2015. The Company s ability to continue operations after its current cash resources are exhausted depends on its ability to obtain additional financing or to achieve profitable operations, as to which no assurances can be given. Cash requirements may vary materially from those now planned because of changes in the Company s focus and direction of its research and development programs, competitive and technical advances, patent developments, regulatory changes or other developments. Additional financing will be required to continue operations after the Company exhausts its current cash resources and to continue its long-term plans for clinical trials and new product development. There can be no assurance that any such financing can be obtained by the Company, or if obtained, what the terms thereof may be, or that any amount that the Company is able to raise will be adequate to support the Company s working capital requirements until it achieves profitable operations.

2. Financings

On October 23, 2013, the Company entered into an underwriting agreement with J. P. Morgan Securities LLC, as representative of the several underwriters named therein, relating to the issuance and sale of 14,300,000 shares of our common stock. The price to the public in the offering was $3.50 per share, and the underwriters agreed to purchase the shares from the Company pursuant to the underwriting agreement at a purchase price of $3.29 per share. Under the terms of the underwriting agreement, the Company also granted the underwriters an option, exercisable for 30 days, to purchase up to an additional 2,145,000 shares of common stock at a purchase price of $3.29 per share, and the underwriters elected to exercise such option in full. The offering was made pursuant to the Company s effective registration statement on Form S-3 (Registration Statement No. 333-177793) previously filed with the SEC, and a prospectus supplement thereunder. The underwriters purchased the 14,300,000 shares and the additional 2,145,000 shares on October 29, 2013. The net proceeds from the offering were approximately $53.9 million after deducting underwriting discounts and estimated offering expenses payable by the Company.

On January 20, 2012, the Company entered into an underwriting agreement with J. P. Morgan Securities LLC, as representative of the several underwriters named therein, relating to the issuance and sale of 9,650,000 shares of our common stock. The price to the public in the offering was $5.20 per share, and the underwriters agreed to purchase the shares from the Company pursuant to the underwriting agreement at a purchase price of $4.888 per share. Under the terms of the underwriting agreement, the Company also granted the underwriters an option, exercisable for 30 days, to

purchase up to an additional 1,447,500 shares of common stock at a purchase price of $4.888 per share. The offering was made pursuant to the Company s effective registration statement on Form S-3 (Registration Statement No. 333-177793) previously filed with the SEC, and a prospectus supplement thereunder. The underwriters purchased the 9,650,000 shares on January 25, 2012 and purchased an additional 464,401 shares on January 31, 2012 pursuant to the partial exercise of their option to purchase additional shares, resulting in our issuing a total of 10,114,401 shares. The net proceeds from the offering were approximately $49.2 million after deducting underwriting discounts and estimated offering expenses payable by the Company.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

2. Financings (Continued)

On February 3, 2011, the Company entered into an underwriting agreement with Barclays Capital Inc., or Barclays, relating to the issuance and sale of 9,600,000 shares of the Company s common stock in a public offering. The price to the public in the offering was $5.75 per share, and Barclays, as the sole underwriter for the offering, agreed to purchase the shares from the Company pursuant to the underwriting agreement at a purchase price of $5.425 per share. Under the terms of the underwriting agreement, the Company also granted Barclays an option, exercisable for 30 days, to purchase up to an additional 1,440,000 shares of the Company s common stock at a purchase price of $5.425 per share. On February 8, 2011, the transactions contemplated by the underwriting agreement were completed. In connection with the closing, Barclays exercised in full its option to purchase the additional 1,440,000 shares, resulting in the Company issuing a total of 11,040,000 shares at the closing. The net proceeds from the offering were approximately $59.8 million after deducting underwriting discounts and offering expenses.

On January 6, 2011, and in conjunction with the Company s execution and delivery of the Channel Agreement with Intrexon Corporation, or Intrexon, the Company entered into a Stock Purchase Agreement and Registration Rights Agreement with Intrexon. On January 12, 2011, and pursuant to that Stock Purchase Agreement, Intrexon purchased 2,426,235 shares of the Company s common stock in a private placement for a total purchase price of $11.6 million, or $4.80 per share. The Company simultaneously issued to Intrexon an additional 3,636,926 shares of its common stock for a cash purchase price equal to the $0.001 par value of such shares, which price was deemed paid in partial consideration for the execution and delivery of the Channel Agreement. This resulted in a non-cash expense of approximately $17.5 million for the in process research and development. Under the terms of the Stock Purchase Agreement, the Company agreed to issue to Intrexon an additional 3,636,926 shares of its common stock under certain conditions upon dosing of the first patient in a ZIOPHARM-conducted Phase 2 clinical trial in the Unites States, or similar study as the parties may agree in a country other than the United States, of a product candidate that is created, produced, developed or identified directly or indirectly by us during the term of the Channel Agreement and that, subject to certain exceptions, involves DNA administered to humans for expression of anti-cancer effectors for the purpose of treatment or prophylaxis of cancer. These shares were issued on November 7, 2012 (See Note 11 to the financial statements, Preferred Stock and Stockholders Equity), and when issued, the purchase price for such shares was equal to the $0.001 par value of such shares, which price was deemed paid in partial consideration for the execution and delivery of the Channel Agreement, in accordance with the terms of the Stock Purchase Agreement. Pursuant to the Registration Rights Agreement, the Company has filed a registration statement with the SEC registering the resale of the shares that we have issued or may issue to Intrexon under the Stock Purchase Agreement.

Also under the Stock Purchase Agreement, if requested by the Company and subject to certain conditions, restrictions and limitations, Intrexon has agreed to purchase the Company s securities in conjunction with qualified securities offerings that are conducted by the Company while the Channel Agreement remains in effect. In conjunction with a qualified offering, Intrexon has committed to purchase up to 19.99% of the securities offered and sold therein (exclusive of Intrexon s purchase) if requested to do so by the Company. Intrexon will not be obligated to purchase securities in a qualified securities offering unless the Company is then in substantial compliance with its obligations under the Channel Agreement and, with respect to a qualified offering that is completed following January 6, 2012, the Company confirms its intent that 40% of the offering s net proceeds shall have been spent, or in the next year will

be spent, by the Company under the Channel Agreement. In the case of a qualified offering that is completed after January 6, 2013, Intrexon s purchase commitment was limited to an amount equal to one-half of the proceeds spent or to be spent by the Company under the Channel Agreement. Intrexon s aggregate purchase commitment for all future qualified offerings is capped at $50.0 million. The Company and Intrexon subsequently amended the Stock Purchase Agreement to clarify that gross proceeds from the sale of Company securities to Intrexon in a qualified offering

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

2. Financings (Continued)

will apply against Intrexon s $50.0 million purchase commitment regardless of whether Intrexon participates voluntarily or at the request of the Company. As a result of Intrexon s purchase of securities in our February 2012 and October 2013 public offerings, the remaining maximum amount of Intrexon s equity purchase commitment is approximately $19.0 million.

On May 27, 2010, the Company entered into an underwriting agreement with Jefferies & Company, Inc. (the Representative) relating to the issuance and sale of 7,000,000 shares of the Company s common stock, par value $0.001 per share. The Representative, on behalf of itself and JMP Securities LLC, as underwriters for the offering, purchased 7,000,000 shares from the Company pursuant to the underwriting agreement and offered the shares to the public at a price of $5.00, and to certain dealers at that price less a concession not in excess of $0.18 per share of common stock. The net proceeds to the Company from this offering were $32.8 million, after deducting underwriting discounts, commissions and other offering expenses of $2.2 million. The offering was completed on June 2, 2010. Under the terms of the underwriting agreement, the Company granted the Representative an option, exercisable for 30 days, to purchase up to an additional 1,050,000 shares of common stock to cover over-allotments, if any. The overallotment expired on July 2, 2010, without being exercised.

On December 4, 2009, the Company entered into an underwriting agreement in which JMP Securities LLC and Rodman & Renshaw, LLC agreed to serve as co-lead managers (together, the Underwriters) in connection with a public offering and sale by the Company of 15,484,000 units at a price to the public of $3.10 per unit for gross proceeds of $48.0 million. The Company paid $2.8 million in commissions and offering expenses and expects to use the remaining net proceeds of $45.2 million for general corporate purposes, which include ongoing research and development activities. Each unit sold in the offering consisted of one share of our common stock and an investor warrant to purchase 0.5 of a share of common stock. The shares of common stock and investor warrants were immediately separable. The closing of the transaction occurred on December 9, 2009.

In connection with a 2009 underwritten public offering, the Company issued warrants to purchase an aggregate of 8,206,520 shares of common stock (including the investor warrants and 464,520 warrants issued to the Underwriters). The investor warrants are exercisable immediately and the underwriter warrants exercisable six months after the date of issuance. The warrants have an exercise price of $4.02 per share and have a five year term. The fair value of the warrants was estimated at $22.9 million using a Black-Scholes model with the following assumptions: expected volatility of 105%, risk free interest rate of 2.14%, expected life of five years and no dividends.

The Company assessed whether the warrants require accounting as derivatives. The Company determined that the warrants were not indexed to the Company s own stock in accordance with Financial Accounting Standards Board, or FASB, Accounting Standards Codification, or ASC, Topic 815, *Derivatives and Hedging*. As such, the Company has concluded the warrants did not meet the scope exception for determining whether the instruments require accounting as derivatives and should be classified as liabilities (see Note 9 to the financial statements, Warrants).

On September 9, 2009, the Company entered into a securities purchase agreement with certain investors pursuant to which it sold a total of 2,772,337 units (the 2009 Private Placement), each unit consisting of one share of common stock and a warrant to purchase one share of common stock for a purchase price of $1.825 per unit. The closing of the transaction occurred on September 15, 2009. In connection with the 2009 Private Placement, the Company raised approximately $5.1 million in gross proceeds. After paying $455 thousand in placement agent fees and offering expenses, the net proceeds were $4.6 million.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

2. Financings (Continued)

In connection with a 2009 private placement, the Company issued warrants to purchase an aggregate of 2,910,954 shares of common stock (including 138,617 warrants issued to the placement agents) which are exercisable immediately. The warrants have an exercise price of $2.04 per share and have a five year term. The fair value of the warrants was estimated at $4.2 million using a Black-Scholes model with the following assumptions: expected volatility of 105%, risk free interest rate of 2.41%, expected life of five years and no dividends. The fair value of the warrants was recorded in the equity section of the balance sheet.

The Company assessed whether the warrants require accounting as derivatives. The Company determined that the warrants were indexed to the Company s own stock in accordance with FASB ASC Topic 815, *Derivatives and Hedging*. As such, the Company has concluded the warrants meet the scope exception for determining whether the instruments require accounting as derivatives and should be classified in stockholders equity.

In connection with the 2009 Private Placement, the Company entered into a registration rights agreement with each of the investors. The registration rights agreement requires that the Company file a resale registration statement covering all of the shares issued in the 2009 Private Placement and the shares issuable upon exercise of the warrants issued in the 2009 Private Placement, up to the maximum number of shares able to be registered pursuant to applicable Securities and Exchange Commission (SEC) regulations, within 30 days of the closing of the 2009 Private Placement. The Company filed the registration statement with the SEC on September 28, 2009 (File No. 333-162160). Under the terms of the registration rights agreement, the Company is obligated to maintain the effectiveness of the resale registration statement until all securities therein are sold or are otherwise can be sold pursuant to Rule 144, without any restrictions. A cash penalty at the rate of 1% of the purchase price per month, capped at a maximum of 10% of the purchase price (or $506 thousand), will be triggered for any filing or effectiveness failures or if, at any time after six months following the closing of the 2009 Private Placement, the Company ceases to be current in periodic reports with the SEC.

In December 2006, the FASB issued an accounting standard, which addresses an issuer s accounting for registration payment arrangements. The accounting standard specifies that the contingent obligation to make future payments or otherwise transfer consideration under a registration payment arrangement, whether issued as a separate agreement or included as a provision of a financial instrument or other agreement, should be separately recognized and measured in accordance with FASB guidance in Accounting for Contingencies. The accounting standard further clarifies that a financial instrument subject to a registration payment arrangement should be accounted for in accordance with US GAAP without regard to the contingent obligation to transfer consideration pursuant to the registration payment arrangement. The Company applied the recognition and measurement provisions of the accounting standard to the registration rights associated with the registration rights agreement. As result, the Company believes that the contingent obligation to make future payments is not probable and as such has recorded no liability associated with these registration rights.

On February 23, 2007, pursuant to subscription agreements between the Company and certain institutional and other accredited investors, the Company completed the sale of an aggregate of 5,910,049 shares of the Company s common

stock at a price of $5.225 per share in a private placement (the 2007 Offering). In addition to these shares sold in the 2007 Offering, the Company also issued to each investor a five-year warrant to purchase, at an exercise price of $5.75 per share, an additional number of shares of common stock equal to 20 percent of the shares purchased by such investor in the 2007 Offering. In the aggregate, these warrants entitle investors to purchase an additional 1,182,015 shares of common stock. The Company estimated the fair value of these warrants at $4.7 million using the Black-Scholes model, using an assumed risk-free rate of 4.71% and an expected life of 5 years, volatility of 93%, and a dividend yield of 0%. The total gross proceeds resulting from the 2007 Offering was approximately $30.9 million, before deducting selling commissions and expenses.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

2. Financings (Continued)

The Company assessed whether the warrants require accounting as derivatives. The Company determined that the warrants were indexed to the Company s own stock in accordance with ASC Topic 815, *Derivatives and Hedging*. As such, the Company has concluded the warrants meet the scope exception for determining whether the instruments require accounting as derivatives and should be classified in stockholders equity.

The Company engaged Paramount BioCapital, Inc. (Paramount), Oppenheimer & Co. Inc., and Griffin Securities, Inc. (together, the 2007 Placement Agents) as placement agents in connection with the 2007 Offering. In consideration for their services, the Company paid the 2007 Placement Agents aggregate cash commissions of $1.6 million (of which $1.0 million was paid to Paramount; see Note 7 to the financial statements, Related Party Transactions) and issued 5-year warrants to the 2007 Placement Agents and their designees to purchase an aggregate of 156,058 shares of the Company s common stock at an exercise price of $5.75 per share. In connection with the 2007 Offering, the Company also made cash payments of $222 thousand and issued 5-year warrants to purchase 21,244 shares of the Company s common stock, at an exercise price of $5.75 per share, to a financial consultant pursuant to the non-circumvention provision of a prior agency agreement. The Company estimated the fair value of these 177,302 warrants at $709 thousand using the Black-Scholes model, using an assumed risk-free rate of 4.71% and an expected life of 5 years, volatility of 93%, and a dividend yield of 0%.

The Company assessed whether the warrants require accounting as derivatives. The Company determined that the warrants were indexed to the Company s own stock in accordance with ASC Topic 815, *Derivatives and Hedging*. As such, the Company has concluded the warrants meet the scope exception for determining whether the instruments require accounting as derivatives and should be classified in stockholders equity.

Pursuant to the 2007 Offering, the Company agreed to use its best efforts to (i) file a registration statement covering the resale of the shares sold in the 2007 Offering and the common stock issuable upon exercise of the investor warrants and placement agent warrants issued in the 2007 Offering within 45 days following the closing date of the 2007 Offering, and (ii) use reasonable commercial efforts to cause the registration statement to be effective within 120 days after such final closing date.

With respect to each investor in the 2007 Offering, the Company also agreed to use reasonable commercial efforts to cause the registration statement to remain effective until the earliest of (i) the date on which the investor may sell all of the shares and shares issuable upon exercise of the warrants then held by the investor pursuant to then-Rule 144 of the Securities Act of 1933 without regard to volume restrictions; and (ii) such time as all of the securities held by the investor and registered under the registration statement have been sold pursuant to a registration statement, or in a transaction exempt from the registration and prospectus delivery requirements of the Securities Act of 1933 under Section 4(1) thereof so that all transfer restrictions and restrictive legends are removed upon the consummation of such sale. The 2007 Placement Agents have been afforded equivalent registration rights as the investors in the 2007 Offering with respect to the shares issuable upon exercise of the placement agent warrants. Effective January 1, 2007, the Company adopted a new accounting standard which requires that instruments subject to registration payments are accounted for without regard to the contingent obligation to make registration payments. As a result, the Company has

determined that no contingent loss exists based on its history of timely annual, quarterly and registration filings. The Company intends to continue the timely compliance with all SEC filing requirements, which will keep the Company current and the shares registered. On March 1, 2007, the Company filed a registration statement on Form S-3 with the Securities and Exchange Commission. The registration statement was declared effective on March 26, 2007, rendering the resale of the shares issued in the 2007 Offering registered under the Securities Exchange Act of 1933 and no penalty was recorded.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

2. Financings (Continued)

On May 3, 2006, pursuant to subscription agreements, the Company and certain institutional and other accredited investors, the Company completed the sale of an aggregate of 7,991,256 shares of the Company s common stock at a price of $4.63 per share in a private placement (the 2006 Offering). In addition to the shares, the Company also issued to each investor a five-year warrant to purchase, at an exercise price of $5.56 per share, an additional number of shares of common stock equal to 30 percent of the shares purchased by such investor in the 2006 Offering. In the aggregate, these Warrants entitle investors to purchase an additional 2,397,392 shares of common stock. The Company estimated the fair value of these warrants at $9.6 million using the Black-Scholes model, using an assumed risk-free rate of 5.01% and an expected life of 5 years, volatility of 100%, and a dividend yield of 0%. The total gross proceeds resulting from the 2006 Offering was approximately $37 million, before deducting selling commissions and expenses.

The Company assessed whether the warrants require accounting as derivatives. The Company determined that the warrants were both (1) indexed to the Company s own stock and (2) classified in stockholders equity in accordance with ASC Topic 815, *Derivatives and Hedging*. As such, the Company has concluded the warrants meet the scope exception for determining whether the instruments require accounting as derivatives and should be classified in stockholders equity.

The Company engaged Paramount BioCapital, Inc. and Griffin Securities, Inc. (together, the 2006 Placement Agents) as co-placement agents in connection with the 2006 Offering. In consideration for their services, the Company paid the 2006 Placement Agents and certain selected dealers engaged by the 2006 Placement Agents and their designees aggregate cash commissions of $2.6 million (of which $1.7 million was paid to Paramount; see Note 7 to the financial statements, Related Party Transactions) and issued 7-year warrants to the 2006 Placement Agents and their designees to purchase an aggregate of 799,126 shares of the Company s common stock (10 percent of the shares sold in the 2006 Offering) at an exercise price of $5.09 per share. The Company estimated the fair value of these warrants at $3.5 million using the Black-Scholes model, using an assumed risk-free rate of 5.01% and an expected life of 7 years, volatility of 100% and a dividend yield of 0%. The Company made reimbursements of $100 thousand to the 2006 Placement Agents for their expenses incurred in connection with the 2006 Offering.

Pursuant to the 2006 Offering, the Company agreed to use its best efforts to (i) file a registration statement covering the resale of the shares issued in the 2006 Offering and the common stock issuable upon exercise of the warrants issued in the 2006 Offering (including the placement agent warrants) within 30 days following the closing date of the 2006 Offering, and (ii) use its reasonable commercial efforts to cause the registration statement to be effective within 120 days after such final closing date.

With respect to each investor in the 2006 Offering, the Company also agreed to use its reasonable commercial efforts to cause the registration statement to remain effective until the earliest of (i) the date on which the investor may sell all of the shares issued in the 2006 Offering and shares issuable upon exercise of the warrants then held by the investor pursuant to then-Rule 144 of the Securities Act of 1933 without regard to volume restrictions; and (ii) such time as all of the securities held by the investor and registered under the registration statement have been sold pursuant to a registration statement, or in a transaction exempt from the registration and prospectus delivery requirements of the

Securities Act of 1933 under Section 4(1) thereof so that all transfer restrictions and restrictive legends are removed upon the consummation of such sale. The 2006 Placement Agents have been afforded equivalent registration rights as the investors in the 2006 Offering with respect to the shares issuable upon exercise of the placement agent warrants. Warrants issued in the 2006 Offering are classified as equity. On May 19, 2006, the Company filed a registration statement on Form S-3 with the Securities and Exchange Commission. The registration statement was declared effective on May 30, 2006, rendering the resale of the shares issued in the 2006 Offering registered under the Securities Exchange Act of 1933 and no penalties were recorded.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

2. Financings (Continued)

On August, 3, 2005, the Company entered into an Agreement and Plan of Merger dated as of August 3, 2005 (the Merger Agreement) with EasyWeb, Inc., a Delaware corporation (EasyWeb), and ZIO Acquisition Corp., a Delaware corporation and wholly-owned subsidiary of EasyWeb (ZIO Acquisition). EasyWeb was a company that was incorporated in September 1998 and had been in the business of designing, marketing, selling and maintaining customized and template turnkey sites on the Internet that are hosted by third parties. At the time of the Merger (as defined below), however, EasyWeb had no operating business and had limited assets and liabilities. Pursuant to the Merger Agreement, ZIO Acquisition merged with and into ZIOPHARM, with ZIOPHARM remaining as the surviving company and a wholly-owned subsidiary of EasyWeb (the Merger). In connection with the Merger, which was effective as of September 13, 2005, ZIO Acquisition ceased to exist and the surviving company changed its corporate name to ZIOPHARM, Inc. Based upon an Exchange Ratio, as defined in the Merger Agreement, in exchange for all of their shares of capital stock in ZIOPHARM, the ZIOPHARM stockholders received a number of shares of common stock of EasyWeb such that, upon completion of the Merger, the then-current ZIOPHARM stockholders held approximately 96.8% of the outstanding shares of common stock of EasyWeb on a fully-diluted basis. Upon completion of the Merger, EasyWeb ceased all of its remaining operations and adopted and continued implementing the business plan of ZIOPHARM. Further, effective upon the Merger, the then current officers and directors of EasyWeb resigned, and the then current officers and directors of ZIOPHARM were appointed officers and directors of EasyWeb. In conjunction with the Merger, ZIOPHARM made payments of approximately $425,000 to certain affiliates of EasyWeb in the third quarter of 2005. Subsequently, on September 14, 2005, ZIOPHARM merged into EasyWeb, and EasyWeb changed its name to ZIOPHARM Oncology, Inc.

Although EasyWeb was the legal acquirer in the transaction, ZIOPHARM became the registrant with the Securities and Exchange Commission. Under generally accepted accounting principles, the transaction was accounted for as a reverse acquisition, whereby ZIOPHARM was considered the acquirer of EasyWeb for financial reporting purposes because ZIOPHARM s stockholders controlled more than 50% of the post-transaction combined entity, the management and the board were that of ZIOPHARM after the transaction, EasyWeb had no operating activity and limited assets and liabilities as of the transaction date, and the continuing operations of the entity are those of ZIOPHARM.

Accordingly, the equity of EasyWeb was adjusted to reflect a recapitalization of the stock and the equity of ZIOPHARM was adjusted to reflect a financing transaction with the proceeds equal to the net asset value of EasyWeb immediately prior to the Merger. The historical financial statements of ZIOPHARM became the historical financial statements of the Company. The historical stockholders equity was retroactively restated to adjust for the exchange of shares pursuant to the Merger Agreement. All share and per share information included in the accompanying financial statements and notes give effect to the exchange, except as otherwise stated.

On June 6, 2005, the Company completed an offering (the 2005 Offering) of Series A Convertible Preferred Stock (Series A Preferred Stock). The Company issued 4,197,946 shares at $4.31 for gross proceeds of approximately $18.1 million. In connection with the 2005 Offering, the Company compensated Paramount, placement agent for the 2005 Offering, or its affiliates for its services through the payment of (a) cash commissions equal to 7% of the gross

proceeds from the sale of the shares of Series A Preferred Stock, and (b) placement warrants to acquire 419,794 shares of Series A Preferred Stock (the Series A Stock Warrants), exercisable for a period of 7 years from the closing date at a per-share exercise price equal to 110% of the price

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

2. Financings (Continued)

per share sold in the 2005 Offering. These commissions are also payable on additional sales by the Company of securities (other than in a public offering) to investors introduced to the Company by Paramount during the twelve (12) month period subsequent to the final closing of the Offering. The Company also paid Paramount an expense allowance of $50 thousand to reimburse Paramount for its out-of-pocket expenses. Also, for a period of 36 months from the final Closing, Paramount has the right of first refusal to act as the placement agent for any private sale of the Company s securities. On September 13, 2005, the Series A Preferred Stock was converted to 4,197,946 of the Company s common stock. Lastly, the Company has agreed to indemnify Paramount against certain liabilities, including liabilities under the Securities Act (see Note 7 to the financial statements, Related Party Transactions).

The Company valued the Series A Stock Warrants using the Black-Scholes model and recorded a charge of $1.7 million against additional paid-in capital. The Company has estimated the fair value of such warrants using the Black-Scholes model, using an assumed risk-free rate of 3.93% and expected life of 7 years, volatility of 134% and dividend yield of 0%. The net proceeds from the 2005 Offering were used for research and development, licensing fees and expenses, and for working capital and general corporate purposes.

3. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP).

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Although the Company regularly assesses these estimates, actual results could differ from those estimates. Changes in estimates are recorded in the period in which they become known.

The Company s most significant estimates and judgments used in the preparation of our financial statements are:

Clinical trial expenses;

Fair value measurements for stock based compensation and warrants; and

Income taxes.

Subsequent Events

The Company evaluated all events and transactions that occurred after the balance sheet date through the date of this filing. During this period, the Company did not identify any material events that require accounting or disclosure in these financial statements.

Cash and Cash Equivalents

Cash equivalents consist primarily of demand deposit accounts and deposits in short-term U.S. treasury money market mutual funds. Cash equivalents are stated at cost, which approximates fair market value.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

3. Summary of Significant Accounting Policies (Continued)

Concentrations of Credit Risk

Financial instruments which potentially subject the Company to concentrations of credit risk consist principally of cash and cash equivalents. The Company maintains cash accounts in commercial banks, which may, at times, exceed federally insured limits. The Company has not experienced any losses in such accounts. The Company believes it is not exposed to any significant credit risk on cash and cash equivalents.

Property and Equipment

Property and equipment are recorded at cost. Expenditures for maintenance and repairs are charged to expense while the costs of significant improvements are capitalized. Depreciation is provided using the straight-line method over the following estimated useful lives of the related assets, which is between three and five years. Upon retirement or sale, the cost of the assets disposed of and the related accumulated depreciation are eliminated from the balance sheets and related gains or losses are reflected in the statements of operations.

Restricted Cash

Current assets include $200 thousand that is restricted for the Company s former line of credit. Other non-current assets include cash of $409 thousand that is restricted as collateral for the Company s facility leases and subleases and $103 thousand that is restricted as collateral for a line of credit.

Long-Lived Assets

The Company reviews the carrying values of its long-lived assets for possible impairment whenever events or changes in circumstances indicate that the carrying amounts of the assets may not be recoverable. Any long-lived assets held for disposal are reported at the lower of their carrying amounts or fair values less costs to sell.

Warrants

The Company applies the accounting standard which provides guidance in assessing whether an equity-based financial instrument is indexed to an entity s own stock for purposes of determining whether a financial instrument should be treated as a derivative. In applying the methodology the Company concluded that certain warrants issued by the Company have terms that do not meet the criteria to be considered indexed to the Company s own stock and therefore are classified as liabilities in the Company s balance sheet. The liability classified warrants are subject to re-measurement at each balance sheet date and any change in fair value is recognized as a component of Other income, net in the accompanying Statement of Operations. Fair value is measured using the binomial valuation model. In December 2011, the Company switched from the Black-Scholes valuation model to the binomial valuation model as it provides a better evaluation of the fair market value of the Company s liability-classified warrants.

Fair Value Measurements

We have certain financial assets and liabilities recorded at fair value which have been classified as Level 1, 2 or 3 within the fair value hierarchy as described in the accounting standards for fair value measurements.

Level 1 Quoted prices in active markets for identical assets or liabilities.

Level 2 Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

3. Summary of Significant Accounting Policies (Continued)

Level 3 Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

Assets and liabilities measured at fair value on a recurring basis as of December 31, 2013 and 2012 are as follows:

($ in thousands)		Fair Value Measurements at Reporting Date Using		
Description	Balance as of December 31, 2013	Quoted Prices in Active Markets for Identical Assets/Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Cash equivalents	$ 66,794	$ 66,794	$	$
Warrant liability	$ 11,776	$	$ 11,776	$

($ in thousands)		Fair Value Measurements at Reporting Date Using		
Description	Balance as of December 31, 2012	Quoted Prices in Active Markets for Identical Assets/Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Cash equivalents	$ 72,002	$ 72,002	$	$
Warrant liability	$ 12,962	$	$ 12,962	$

The cash equivalents consist primarily of short term U.S. treasury money market mutual funds which are actively traded. The warrants were valued using a binomial valuation model. See Note 9 to the financial statements, Warrants, for additional disclosure on the valuation methodology and significant assumptions.

Revenue Recognition

The Company receives revenue from a collaboration agreement (see Note 8 to the financial statements, Commitments and Contingencies). Collaboration arrangements typically include payments for one or more of the following: non-refundable, upfront license fees, funding of research and development efforts, milestone payments if specified objectives are achieved and/or profit-sharing or royalties on product sales. Arrangements containing multiple elements are divided into separate units of accounting if certain criteria are met, including whether the delivered element has stand-alone value to the collaborative partner. The consideration received is then allocated among the separate units based on their respective fair values and the applicable revenue recognition criteria are applied to each of the separate units.

Revenue from non-refundable, upfront research and development fees is reported as research and development revenue and is recognized on a straight-line basis over the contracted or estimated period of performance, which is typically the development term. Research and development funding is earned over the period of effort.

Milestone payments are recognized as research and development revenue upon achievement of the milestone only if (1) the milestone payment is non-refundable, (2) substantive effort is involved in achieving the milestone and (3) the amount of the milestone is reasonable in relation to the effort expended or the risk associated with achievement of the milestone. If any of these conditions are not met, the milestone payment is deferred and recognized as revenue over the estimated remaining period of performance under the contract as the Company completes its performance obligations.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

3. Summary of Significant Accounting Policies (Continued)

Research and Development Costs

Research and development expenditures are charged to the statement of operations as incurred. Such costs include proprietary research and development activities, purchased research and development, and expenses associated with research and development contracts, whether performed by the Company or contracted with independent third parties.

Income Taxes

Income taxes are accounted for under the liability method. Deferred tax assets and liabilities are recognized for the estimated future tax consequences of temporary differences between the financial statement carrying amounts and their respective tax bases. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the year in which the temporary differences are expected to be recovered or settled. The Company evaluates the realizability of our deferred tax assets and establishes a valuation allowance when it is more likely than not that all or a portion of deferred tax assets will not be realized.

The Company accounts for uncertain tax positions using a more-likely-than-not threshold for recognizing and resolving uncertain tax positions. The evaluation of uncertain tax positions is based on factors including, but not limited to, changes in tax law, the measurement of tax positions taken or expected to be taken in tax returns, the effective settlement of matters subject to audit, new audit activity and changes in facts or circumstances related to a tax position. The Company evaluates this tax position on an annual basis. The Company also accrues for potential interest and penalties, related to unrecognized tax benefits in income tax expense (see Note 10 to the financial statements, Income Taxes).

Accounting for Stock-Based Compensation

Stock-based compensation cost is measured at the grant date, based on the estimated fair value of the award, and is recognized as expense over the employee s requisite service period. Stock-based compensation expense is based on the number of awards ultimately expected to vest and is therefore reduced for an estimate of the awards that are expected to be forfeited prior to vesting. Consistent with prior years, the Company uses the Black-Scholes option pricing model which requires estimates of the expected term option holders will retain their options before exercising them and the estimated volatility of the Company s common stock price over the expected term.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

3. Summary of Significant Accounting Policies (Continued)

The Company recognizes the full impact of its share-based employee payment plans in the statements of operations for each of the years ended December 31, 2013, 2012, and 2011 and did not capitalize any such costs on the balance sheets. The Company recognized $2.3 million, $3.1 million, and $2.1 million of compensation expense related to vesting of employee stock options during the years ended December 31, 2013, 2012, and 2011, respectively. In the years ended December 31, 2013, 2012, and 2011, the Company recognized $1.2 million, $1.7 million, and $635 thousand of compensation expense, respectively, related to vesting of restricted stock (see Note 12 to the financial statements, Stock Option Plan). In the years ended December 31, 2013, 2012, and 2011, the Company recognized $3.5 million, $4.9 million, and $2.8 million of compensation expense, respectively, related to vesting of all employee and director awards. The following table presents share-based compensation expense included in the Company s Statements of Operations:

	Year ended December 31,		
(in thousands)	**2013**	**2012**	**2011**
Research and development	$ 792	$ 1,917	$ 890
General and administrative	2,715	2,963	1,869
Share based employee compensation expense before tax	3,507	4,880	2,759
Income tax benefit			
Net share based employee compensation expense	$ 3,507	$ 4,880	$ 2,759

Prior to the adoption of the current accounting standards in 2006, the Company previously accounted for stock-based awards to employees using the intrinsic value method and had elected the disclosure-only alternative. All stock-based awards to nonemployees were accounted for at their fair value. The Company had recorded the fair value of each stock option issued to non-employees as determined at the date of grant using the Black-Scholes option pricing model.

The following table illustrates the effect on net loss and earnings per share if the Company had applied the fair value recognition provisions of current accounting standards to stock-based awards from September 9, 2003 (date of inception) to December 31, 2005:

(in thousands, except per share data)	**September 9, 2003 (date of inception) to December 31, 2005**
Net loss:	
As reported	$ (15,364)
Stock-based compensation expense included in reported net loss	802

Stock-based compensation expense under the fair-value based method		(1,756)
Pro forma net loss	$	(16,318)
Basic and diluted net loss per share:		
As reported	$	(3.75)
Pro forma	$	(3.98)

The fair value of each stock option is estimated at the date of grant using the Black-Scholes option pricing model. The estimated weighted-average fair value of stock options granted to employees in 2013, 2012, and 2011 was approximately $2.51, $3.06, and $4.04 per share, respectively. Assumptions regarding volatility, expected term, dividend yield and risk-free interest rate are required for the Black-Scholes model. The volatility assumption is based on the Company s historical experience. The risk-free interest rate is based on a U.S. treasury note with a

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

3. Summary of Significant Accounting Policies (Continued)

maturity similar to the option award s expected life. The expected life represents the average period of time that options granted are expected to be outstanding. The Company calculated expected term using the simplified method described in SEC Staff Accounting Bulletin, or SAB, No. 107 and No. 110. The assumptions for volatility, expected life, dividend yield and risk-free interest rate are presented in the table below:

	2013	2012	2011
Weighted average risk-free interest rate	1.00 - 2.10%	0.79 - 1.13%	1.09 - 2.69%
Expected life in years	6	6	6
Expected volatility	83.40 - 95.96%	83.36 - 83.53%	83.26 - 87.29%
Expected dividend yield	0	0	0

Net Loss Per Share

Basic net loss per share is computed by dividing net loss by the weighted average number of common shares outstanding for the period. The Company s potential dilutive shares, which include outstanding common stock options, unvested restricted stock and warrants, have not been included in the computation of diluted net loss per share for any of the periods presented as the result would be antidilutive. Such potential common shares at December 31, 2013, 2012, and 2011 consist of the following:

	December 31,		
	2013	2012	2011
Stock options	6,747,303	7,147,303	5,138,486
Unvested restricted stock	352,865	733,739	950,906
Warrants	10,539,767	11,197,454	13,117,264
	17,639,935	19,078,496	19,206,656

New Accounting Pronouncements

In January 2013, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update, or ASU, No. 2013-01, *Balance Sheet (Topic 210): Clarifying the Scoping of Disclosures about Offsetting Assets and Liabilities* (ASU 2013-01) which clarifies the scope of ASU No. 2011-11 requiring an entity to disclose information about offsetting and related arrangements to enable users of its financial statements to understand the effect of those arrangements on its financial position. This ASU was effective for fiscal years beginning on or after January 1, 2013 and interim periods within those annual periods. The adoption of this standard did not have an impact on our financial position or results of operations.

In February 2013, the FASB issued ASU No. 2013-02, *Comprehensive Income (Topic 220): Reporting of Amounts Reclassified Out of Accumulated Other Comprehensive Income* (ASU 2013-02) which requires an entity to provide information about the amounts reclassified out of accumulated other comprehensive income by component. In addition, an entity is required to present, either on the face of the statement where net income is presented or in the notes, significant amounts reclassified out of accumulated other comprehensive income by the respective line items of net income but only if the amount reclassified is required under U.S. GAAP to be reclassified to net income in its entirety in the same reporting period. For other amounts that are not required under U.S. GAAP to be reclassified in their entirety to net income, an entity is required to cross-reference to other disclosures required under U.S. GAAP that provide additional detail about those amounts. This ASU was effective for reporting periods beginning after December 15, 2012 and did not have an impact on our financial position or results of operations.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

4. Restructuring

The Company underwent restructuring activities during the year ended December 31, 2013 which included a reduction in workforce and office space, resulting in sublease agreements in Boston and New York. As a result, the Company incurred restructuring charges of $1.7 million, $0.6 million was included in general and administrative expenses and $1.1 million was included in research and development expenses. The Company also incurred charges for exit and disposal activities from the Boston and New York sublease agreements which resulted in an aggregate loss of $0.8 million recorded in general and administrative expenses, and a loss on the disposal of fixed assets of $0.6 million, recorded in Other income in the Statement of Operations for the year ended December 31, 2013 and the period from inception (September 9, 2003) through December 31, 2013.

On October 17, 2013, the Company entered into a sublease agreement to lease 7,259 square feet in our New York office to a subtenant. The Company remains primarily liable to pay rent on the original lease. We recorded a loss on the sublease in the amount of $729 thousand for the year ended December 31, 2013, representing the remaining contractual obligation of $2.3 million, less $1.6 million in payments from our subtenant. We retired assets in this subleased area as a result of this sublease with a net book value of $392 thousand, and recorded a loss on disposal of fixed assets for the same amount for the year ended December 31, 2013.

On August 30, 2013, the Company entered into a sublease agreement to lease 5,249 square feet in our Boston office to a subtenant. In accordance with the sublease agreement, the subtenant provided the Company with a security deposit of $20 thousand, which is recorded in other non-current assets and other liabilities on the balance sheet for the year ended December 31, 2013. The Company remains primarily liable to pay rent on the original lease. We recorded a loss on the sublease in the amount of $42 thousand for the year ended December 31, 2013, representing the remaining contractual obligation of $367 thousand, less $325 thousand in payments from our subtenant. We retired assets in this subleased area as a result of this sublease with a net book value of $194 thousand, and recorded a loss on disposal of fixed assets for the same amount for the year ended December 31, 2013.

On July 16, 2012, the Company announced that it restructured its management team and closed its Germantown, MD office. As a result of this action, the Company recorded a restructuring charge, consisting primarily of severance, stock based compensation associated with stock option modifications (see Note 12 to the financial statements, Stock Option Plan) and health benefit continuation costs of approximately $1.3 million. These costs are included in general and administrative expense for the year ended December 31, 2012 and the period from inception (September 9, 2003) through December 31, 2013.

5. Property and Equipment, net

Property and equipment, net consist of the following:

(in thousands)	December 31, 2013	2012

Office and computer equipment	$ 1,076	$ 1,552
Software	884	856
Leasehold improvements	841	1,357
Manufacturing equipment	153	153
	2,954	3,918
Less: accumulated depreciation	(2,153)	(1,924)
Property and equipment, net	$ 801	$ 1,994

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

5. Property and Equipment, net (Continued)

Depreciation and amortization charged to the Statement of Operations for the years ended December 31, 2013, 2012, 2011 and from September 9, 2003 (date of inception) to December 31, 2013 (in thousands) was: $738, $658, $268, and $3,313, respectively.

6. Accrued Expenses

Accrued expenses consist of the following:

	December 31,	
(in thousands)	**2013**	**2012**
Professional services	$ 582	$ 835
Clinical consulting services	3,751	9,628
Preclinical services	513	411
Manufacturing services	547	3,217
Accrued vacation	227	452
Other consulting services	230	903
Payroll taxes and benefits	255	585
Severance		474
Employee compensation	252	11
Accrued expenses	$ 6,357	$ 16,516

7. Related Party Transactions

During 2005, the Company engaged Paramount to assist in placing shares of Series A Preferred Stock on a best efforts basis. Lindsay A. Rosenwald, M.D. is Chairman and Chief Executive Officer of Paramount. Dr. Rosenwald is also a managing member of Horizon BioMedical Ventures, LLC, or Horizon. On December 30, 2004, Horizon authorized the distribution of 2,428,911 (4,848,376 pre-Merger) shares of the Company s common stock (such shares, the Horizon Distributed Shares), in equal installments of 1,214,456 (2,424,188 pre-Merger) shares of common stock to Mibars, LLC, or Mibars, and to Dr. Rosenwald and his designees, which we refer to as the Designated Shares . The disposition of the Designated Shares will be subject to certain restrictions as agreed to among Dr. Rosenwald and Dr. Rosenwald s designees. Among other things, under certain circumstances set forth in pledge agreements between Dr. Rosenwald and his designees, Dr. Rosenwald has the right to re-acquire the Designated Shares from his designees. As a result of those rights, Dr. Rosenwald may be deemed to be an affiliate of the Company.

In connection with the December 22, 2004 Option Agreement with Southern Research Institute, or SRI, the Company entered into a Finders Agreement, dated December 23, 2004, with Paramount pursuant to which the Company has

agreed to compensate Paramount, for services in connection with the Company s introduction to SRI through the payment of (a) a cash fee of $60 thousand and (b) warrants to purchase 62,621 (125,000 pre-Merger) shares of the Company s common stock at a price equal to $4.75 ($2.38 pre-Merger) per share. The Company has estimated the fair value of such warrants using the Black-Scholes model, using an assumed risk-free rate of 3.93%, and expected life of 7 years, volatility of 134% and dividend yield of 0%. In December 2004, the Company expensed the $60 thousand that was payable to Paramount and recognized compensation expense in the amount of $251 thousand for the issuance of the warrants. These warrants expired on December 23, 2011.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

7. Related Party Transactions (Continued)

In connection with the Series A Preferred Stock Offering, the Company and Paramount entered into an Introduction Agreement in January 2005, pursuant to which the Company had agreed to compensate Paramount for its services in connection with the Offering through the payment of (a) cash commissions equal to 7% of the gross proceeds from the sale of the shares of Series A Preferred Stock, and (b) placement warrants to acquire a number of shares of Series A Preferred Stock equal to 10% of the number of shares of Series A Preferred Stock issued in the Offering, exercisable for a period of 7 years from the Closing Date at a per Share exercise price equal to 110% of the price per Share sold in the Offering. These commissions are also payable on additional sales by the Company of securities (other than in a public offering) to investors introduced to the Company by Paramount during the 12 month period subsequent to the final closing of the Offering. The Company also agreed to pay to Paramount a non-accountable expense allowance of $50 thousand to reimburse Paramount for its out-of-pocket expenses. Also, for a period of 36 months from the final Closing, Paramount has the right of first refusal to act as the placement agent for the private sale of the Company s securities. Lastly, the Company has agreed to indemnify Paramount against certain liabilities, including liabilities under the Securities Act.

In connection with the 2006 Offering, on May 3, 2006, the Company paid Paramount a cash commission equal to 7% of the gross proceeds from the sale of the Shares sold by Paramount in the 2006 Offering, resulting in a cash payment of approximately $1.7 million. In addition, the Company issued 7-year warrants to the 2006 Placement Agents and their designees to purchase an aggregate of 799,126 shares (10% of the Shares sold in the Offering) of the Company s common stock, of which 532,750 were issued to Paramount at an exercise price of $5.09 per share.

On December 18, 2006 the Company paid Paramount a cash settlement of $180 thousand in exchange for Paramount s agreement to terminate certain of its rights under the 2005 and 2004 agreements. This amount was expensed in the year ended December 31, 2006.

Mr. Timothy McInerney, who is a member of the Board of Directors of the Company, was a full-time employee of Paramount from 1992 through March 2007. In addition, Michael Weiser, a current member of the Board of Directors of the Company, and David M. Tanen, who was a member of the Board of Directors of the Company, were full-time employees of Paramount from July 1998 through November 2006, and July 1996 through August 2004, respectively. Mr. John Knox, our former Treasurer, was also a full-time Paramount employee.

In connection with the 2007 Offering, on February 23, 2007, the Company paid Paramount cash commissions equal to 6% of the gross proceeds from the sale of the shares sold by Paramount in the 2007 Offering, resulting in a cash payment of approximately $1.0 million. In addition, the Company issued 5-year warrants to the placement agents in the 2007 Offering and their designees to purchase an aggregate of 177,302 shares (3% of the shares sold in the 2007 Offering) of the Company s common stock at an exercise price of $5.75 per share, of which 97,536 were issued to Paramount.

During the year ended December 31, 2008, there were no related party transactions.

Mr. Timothy McInerney, who is a member of the Board of Directors of the Company, has been a Partner at Riverbank Capital Securities, Inc. since June 2007. In connection with the 2009 Private Placement, on September 15, 2009, the Company paid Riverbank Capital Securities, Inc. cash commissions equal to 3.325% of the gross proceeds from the sale of the shares sold by Riverbank Capital Securities, Inc. in the 2009 Private Placement, resulting in a payment of approximately $168 thousand. In addition, the Company issued 5-year warrants to the placement agents in the 2009 Private Placement and their designees to purchase an aggregate of 138,617 shares of the Company s common stock (5% of the shares sold in the September 2009 Offering) at an exercise price of $2.04 per share, of which 65,843 were issued to Riverbank Capital Securities, Inc.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

7. Related Party Transactions (Continued)

On January 6, 2011, the Company entered into an Exclusive Channel Partner Agreement, or Channel Agreement, with Intrexon Corporation, or Intrexon (see Note 8 to the financial statements, Commitments and Contingencies, for additional disclosure relating to the Channel Agreement). Our director, Randall J. Kirk, is the CEO, a director, and the largest stockholder of Intrexon. During the year ended December 31, 2012, the Company paid Intrexon approximately $11.4 million, of which $6.6 million was for services already incurred and the remaining $4.8 million was for services expected to be incurred within a year. This amount was included as part of prepaid expenses and other current assets on the balance sheet as of December 31, 2012. During the year ended December 31, 2013, the Company expensed $7.8 million for services performed by Intrexon, of which $4.8 million was applied to the prepaid balance in other current assets, $2.4 million was paid to Intrexon and $0.6 million was recorded in accrued expenses. As of December 31, 2013, the prepaid balance in other current assets on the accompanying balance sheet has been reduced to $0.

On January 25, 2012, Intrexon purchased 1,923,075 shares of common stock in the Company s public offering (see Note 2 to the financial statements, Financings).

On November 7, 2012, the Company issued 3,636,926 shares of common stock to Intrexon (see Note 11 to the financial statements, Preferred Stock and Stockholders Equity).

On October 29, 2013, Intrexon purchased 2,857,143 shares of common stock in the Company s public offering (see Note 2 to the financial statements, Financings).

8. Commitments and Contingencies

Operating Leases

Prior to December 31, 2012, the Company entered into an operating lease in New York, NY, consisting of 6,251 square feet of office space. In accordance with this agreement, the Company entered into a letter of credit in the amount of $388 thousand, naming the Company s landlord as beneficiary. In January 2012, the Company amended the lease agreement, adding 1,008 square feet of office space. As of December 31, 2012, the Company occupied 7,259 square feet of space in New York, NY, and maintained a $388 thousand letter of credit. The collateral for the letter of credit is recorded in other non-current assets on the balance sheet as of December 31, 2012. The lease for office space in New York, NY expires in October 2018.

On October 17, 2013, the Company entered into a sublease agreement to lease 7,259 square feet in our New York office to a subtenant. The Company remains primarily liable to pay rent on the original lease. We recorded a loss on the sublease in the amount of $729 thousand for the year ended December 31, 2013, representing the remaining contractual obligation of $2.3 million, less $1.6 million in payments from our subtenant. We retired assets in this subleased area as a result of this sublease with a net book value of $392 thousand, and recorded a loss on disposal of

fixed assets for the same amount for the year ended December 31, 2013. The Company continues to maintain a $388 thousand letter of credit. The collateral for the letter of credit is recorded in other non-current assets on the balance sheet as of December 31, 2013. The lease for office space in New York, NY expires in October 2018.

Prior to December 31, 2012, the Company entered into separate operating lease agreements for various spaces in a building in Boston, MA. That space consisted of 5,249 square feet on the first floor, 8,538 square feet on the second floor, and 6,959 square feet on the third floor. In June 2012, the Company re-negotiated a master lease for the entire Boston office space, added 9,800 square feet of office space on the fourth floor, surrendered 4,113

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

8. Commitments and Contingencies (Continued)

square feet from the second floor, and incorporated all floors lease agreements under the same master agreement expiring in August 2016. The Company provided an additional $41 thousand security deposit for the additional space on the fourth floor. As of December 31, 2012, a total security deposit of $127 thousand was paid to its landlord for security deposits for these agreements.

On August 30, 2013, the Company entered into a sublease agreement to lease 5,249 square feet in our Boston office to a subtenant. The Company remains primarily liable to pay rent on the original lease. We recorded a loss on the sublease in the amount of $42 thousand for the year ended December 31, 2013, representing the remaining contractual obligation of $367 thousand, less $325 thousand in payments from our subtenant. We retired assets in this subleased area as a result of this sublease with a net book value of $194 thousand, and recorded a loss on disposal of fixed assets. In accordance with the sublease agreement, the subtenant provided the Company with a security deposit of $20 thousand, which is recorded in other non-current assets and other liabilities on the balance sheet for the year ended December 31, 2013.

As of December 31, 2013, the Company occupies 21,184 square feet of space in its Boston, MA office and has paid a total of $127 thousand for security deposits, which are recorded in other non-current assets on the balance sheet.

In April 2011, the Company entered into an operating lease for office space in Germantown, MD, consisting of 2,227 square feet. As of December 31, 2011, the Company recorded the $4 thousand security deposit in other non-current assets on the balance sheet. The lease would have expired in March 2014; however, on July 16, 2012, the Germantown, Maryland office was closed. In June 2013, we paid off the remainder of the Germantown, Maryland lease obligation.

Future net minimum lease payments under operating leases as of December 31, 2013 are as follows (in thousands):

2014	$ 1,196
2015	1,236
2016	997
2017	501
2018	424
	4,354
Less: contractual sublease income	(1,883)
Future minimum lease payments, net	$ 2,471

Total rent expense was approximately $1.0 million, $1.1 million, $647 thousand, and $5.2 million for the years ended December 31, 2013, 2012, 2011 and from September 9, 2003 (date of inception) to December 31, 2013, respectively.

The Company records rent expense on a straight-line basis over the term of the lease. Accordingly, the Company has recorded a liability for deferred rent at December 31, 2013 and 2012 of $1.1 million ($212 thousand current and $851 long-term) and $439 thousand ($39 thousand current and $400 thousand long-term), respectively, which is recorded in deferred rent on the balance sheet.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

8. Commitments and Contingencies (Continued)

License Agreements

Patent and Technology License Agreement The University of Texas M. D. Anderson Cancer Center and the Texas A&M University System.

On August 24, 2004, the Company entered into a patent and technology license agreement with The Board of Regents of the University of Texas System, acting on behalf of The University of Texas M. D. Anderson Cancer Center and the Texas A&M University System, which the Company refers to, collectively, as the Licensors. Under this agreement, the Company was granted an exclusive, worldwide license to rights (including rights to U.S. and foreign patent and patent applications and related improvements and know-how) for the manufacture and commercialization of two classes of organic arsenicals (water- and lipid-based) for human and animal use. The class of water-based organic arsenicals includes darinaparsin.

As partial consideration for the license rights obtained, the Company made an upfront payment in 2004 of $125 thousand and granted the Licensors 250,487 shares of the Company s common stock. In addition, the Company issued options to purchase an additional 50,222 shares outside the 2003 Stock Option Plan for $0.002 per share following the successful completion of certain clinical milestones, which vested with respect to 12,555 shares upon the filing of an Investigation New Drug application, or IND, for darinaparsin in 2005 and vested with respect to another 25,111 shares upon the completion of dosing of the last patient for both Phase 1 clinical trials in 2007. The Company recorded $120 thousand of stock based compensation expense related to the vesting in 2007. The remaining 12,556 shares will vest upon enrollment of the first patient in a multi-center pivotal clinical trial i.e. a human clinical trial intended to provide the substantial evidence of efficacy necessary to support the filing of an approvable New Drug Application, or NDA. In addition, the Licensors are entitled to receive certain milestone payments, including $100 thousand that was paid in 2005 upon the commencement of Phase 1 clinical trial and $250 thousand that was paid in 2006 upon the dosing of the first patient in the Registrant-sponsored Phase 2 clinical trial for darinaparsin. The Company may be required to make additional payments upon achievement of certain other milestones in varying amounts which on a cumulative basis could total up to an additional $4.5 million. In addition, the Licensors are entitled to receive single digit percentage royalty payments on sales from a licensed product and will also be entitled to receive a portion of any fees that the Company may receive from a possible sublicense under certain circumstances. In addition, the Company also paid the Licensors $100 thousand in 2006 and 2007 to conduct scientific research with the Company obtaining exclusive right to all resulting intellectual property rights. The sponsored research agreements governing this research and any related extensions expired in February 2008 with no payments being made subsequent to that date.

The license agreement also contains other provisions customary and common in similar agreements within the industry, such as the right to sublicense the Company rights under the agreement. However, if the Company sublicenses its rights prior to the commencement of a pivotal study i.e. a human clinical trial intended to provide the substantial evidence of efficacy necessary to support the filing of an approvable NDA, the Licensors will be entitled to receive a share of the payments received by the Company in exchange for the sublicense (subject to certain exceptions). The term of the license agreement extends until the expiration of all claims under patents and patent

applications associated with the licensed technology, subject to earlier termination in the event of defaults by the Company or the Licensors under the license agreement, or if the Company becomes bankrupt or insolvent. No milestones under the license agreement were reached or expensed during the years ended December 31, 2013, 2012 or 2011.

License Agreement with DEKK-Tec, Inc.

On October 15, 2004, the Company entered into a license agreement with DEKK-Tec, Inc., pursuant to which it was granted an exclusive, worldwide license for palifosfamide. As part of the signing of license agreement with DEKK-Tec, the Company expensed an upfront $50 thousand payment to DEKK-Tec in 2004.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

8. Commitments and Contingencies (Continued)

In consideration for the license rights, DEKK-Tec is entitled to receive payments upon achieving certain milestones in varying amounts which on a cumulative basis may total $4.0 million. Of the aggregate milestone payments, most will be creditable against future royalty payments as referenced below. The Company expensed a $100 thousand milestone payment upon achieving Phase 2 milestones during the year ended December 31, 2006. Additionally, in 2004 the Company issued DEKK-Tec an option to purchase 27,616 shares of the Company s common stock for $0.02 per share. Upon the execution of the license agreement, 6,904 shares vested and were subsequently exercised in 2005 and the remaining options will vest upon certain milestone events, culminating with final FDA approval of the first NDA submitted by the Company (or by its sublicensee) for palifosfamide. DEKK-Tec is entitled to receive single digit percentage royalty payments on the sales of palifosfamide should it be approved for commercial sale. On March 16, 2010, the Company expensed a $100 thousand milestone payment upon receiving a United States Patent for palifosfamide. There were no payments made during 2009. In December 2010, the Company expensed a $300 thousand milestone payment and vested 6,904 stock options upon achieving Phase 3 milestones. These options were subsequently exercised in 2011. The Company s obligation to pay royalties will terminate on a country-by-country basis upon the expiration of all valid claims of patents in such country covering licensed product, subject to earlier termination in the event of defaults by the parties under the license agreement. No milestones under the license agreement have been reached or expensed since 2010.

License Agreement with Southern Research Institute

On December 22, 2004, the Company entered into an Option Agreement with the Southern Research Institute, or SRI, pursuant to which the Company was granted an exclusive option to obtain an exclusive license to SRI s interest in certain intellectual property, including exclusive rights related to certain isophosphoramide mustard analogs.

Also on December 22, 2004, the Company entered into a Research Agreement with SRI pursuant to which the Company agreed to spend a sum not to exceed $200 thousand between the execution of the agreement and December 21, 2006, including a $25 thousand payment that was made simultaneously with the execution of the agreement, to fund research and development work by SRI in the field of isophosphoramide mustard analogs. The option agreement was exercised on February 13, 2007. Under the license agreement entered into upon exercise of the option, the Company is required to remit minimum annual royalty payments of $25 thousand until the first commercial sale of a licensed product. These payments were made for the years ended December 31, 2013, 2012, 2011, 2010, 2009 and 2008. The Company may be required to make payments upon achievement of certain milestones in varying amounts which on a cumulative basis could total up to $775,000. In addition, SRI will be entitled to receive single digit percentage royalty payments on the sales of a licensed product in any country until all licensed patents rights in that country which are utilized in the product have expired. No milestones under the license agreement were reached or expensed since the agreement s inception.

License Agreement with Baxter Healthcare Corporation

On November 3, 2006, the Company entered into a definitive Asset Purchase Agreement for indibulin and a License Agreement to proprietary nanosuspension technology with affiliates of Baxter Healthcare S.A. The purchase included the entire indibulin intellectual property portfolio as well as existing drug substance and capsule inventories. The terms of the Asset Purchase Agreement included an upfront cash payment of approximately $1.1 million and an additional $100 thousand payment for existing inventory, both of which were expensed in 2006. In addition to the upfront costs, the Asset Purchase Agreement includes additional diligence and milestone payments that could amount to approximately $8 million in the aggregate and royalties on net

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

8. Commitments and Contingencies (Continued)

sales of products covered by a valid claim of a patent for the life of the patent on a country-by-country basis. The Company expensed a $625 thousand milestone payment upon the successful U.S. IND application for indibulin in 2007. The License Agreement requires payment of a $15 thousand annual patent and license prosecution/maintenance fee through the expiration of the last of the licensed patents which is expected to expire in 2025, and single digit royalties on net sales of licensed products covered by a valid claim of a patent for the life of the patent on a country-by-country basis. The term of the license agreement extends until the expiration of the last to expire of the patents covering the licensed products, subject to earlier termination in the event of defaults by the parties under the license agreement.

In October 2009, the Baxter License Agreement was amended to allow the Company to manufacture indibulin. No milestones under the license agreement were reached or expensed during the years ended December 31, 2011 or 2010. During each of the years ended December 31, 2013 and 2012, milestones of $250 thousand were reached and expensed.

Exclusive Channel Partner Agreement with Intrexon Corporation

On January 6, 2011, we entered into an Exclusive Channel Partner Agreement, or the Channel Agreement, with Intrexon that governs a channel partnering arrangement in which we use Intrexon s technology directed towards *in vivo* expression of effectors in connection with the development of Ad-RTS-IL-12 + veledimex and DC-RTS-IL-12 + veledimex and generally to research, develop and commercialize products, in each case in which DNA is administered to humans for expression of anti-cancer effectors for the purpose of treatment or prophylaxis of cancer, which we collectively refer to as the Cancer Program. The Channel Agreement establishes committees comprised of representatives of us and Intrexon that govern activities related to the Cancer Program in the areas of project establishment, chemistry, manufacturing and controls, clinical and regulatory matters, commercialization efforts and intellectual property.

The Channel Agreement grants us a worldwide license to use patents and other intellectual property of Intrexon in connection with the research, development, use, importing, manufacture, sale, and offer for sale of products involving DNA administered to humans for expression of anti-cancer effectors for the purpose of treatment or prophylaxis of cancer, which we collectively refer to as the ZIOPHARM Products. Such license is exclusive with respect to any clinical development, selling, offering for sale or other commercialization of ZIOPHARM Products, and otherwise is non-exclusive. Subject to limited exceptions, we may not sublicense the rights described without Intrexon s written consent.

Under the Channel Agreement, and subject to certain exceptions, we are responsible for, among other things, the performance of the Cancer Program, including development, commercialization and certain aspects of manufacturing of ZIOPHARM Products. Intrexon is responsible for the costs of establishing manufacturing capabilities and facilities for the bulk manufacture of products developed under the Cancer Program, certain other aspects of manufacturing and costs of discovery-stage research with respect to platform improvements and costs of filing, prosecution and

maintenance of Intrexon s patents.

Subject to certain expense allocations and other offsets provided in the Channel Agreement, we will pay Intrexon on a quarterly basis 50% of net profits derived in that quarter from the sale of ZIOPHARM Products, calculated on a ZIOPHARM Product-by- ZIOPHARM Product basis. We have likewise agreed to pay Intrexon on a quarterly basis 50% of revenue obtained in that quarter from a sublicensor in the event of a sublicensing arrangement. In addition, in partial consideration for each party s execution and delivery of the Channel Agreement, we entered into a Stock Purchase Agreement with Intrexon (see Note 2 to the financial statements, Financings).

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

8. Commitments and Contingencies (Continued)

Following the first 24 months of the agreement, Intrexon had the option to terminate the Channel Agreement, if we failed to use diligent efforts to develop and commercialize ZIOPHARM Products or if we elected not to pursue the development of a Cancer Program identified by Intrexon that is a Superior Therapy as defined in the Channel Agreement. Also following the first 24 months of the agreement, we had the option to voluntarily terminate the Channel Agreement, upon 90 days written notice to Intrexon. The 24 month termination period expired during the year ended December 31, 2013.

Upon termination of the Channel Agreement, we may continue to develop and commercialize any ZIOPHARM Product that, at the time of termination:

- Is being commercialized by us;
- Has received regulatory approval;
- Is a subject of an application for regulatory approval that is pending before the applicable regulatory authority; or
- Is the subject of at least an ongoing Phase 2 clinical trial (in the case of a termination by Intrexon due to an uncured breach or a voluntary termination by us), or an ongoing Phase 1 clinical trial in the field (in the case of a termination by us due to an uncured breach or a termination by Intrexon following an unconsented assignment by us or our election not to pursue development of a Superior Therapy).

Our obligation to pay 50% of net profits or revenue described above with respect to these retained products will survive termination of the Channel Agreement.

Collaboration Agreement with Harmon Hill, LLC

On April 8, 2008, the Company signed a collaboration agreement for Harmon Hill, LLC, or Harmon Hill, to provide consulting and other services for the development and commercialization of oncology therapeutics by ZIOPHARM. Under the agreement the Company has agreed to pay Harmon Hill $20 thousand per month for the consulting services and has further agreed to pay Harmon Hill (a) $500 thousand upon the first patient dosing of the Specified Drug, as defined in the collaboration agreement, in a pivotal trial, which trial uses a dosing Regime introduced by Harmon Hill; and (b) provided that the Specified Drug receives regulatory approval from the FDA, the European Medicines Agency or another regulatory agency for the marketing of the Specified Drug, a 1% royalty of the Company s net sales will be awarded to Harmon Hill.

If the Specified Drug is sublicensed to a third party, the agreement entitles Harmon Hill to 1% award of royalties or other payments received from a sublicense. Subject to renewal or extension by the parties, the term of the agreement was for a one year period that expired April 8, 2009. Following such expiration, the parties continued to operate under the terms of the agreement and, during 2010, the agreement was formally extended through April 8, 2011 and again through April 8, 2012. The agreement was extended through November 8, 2012 and has now expired. The Company expensed $240 thousand during the years ended December 31, 2011 and 2010 and expensed $200 thousand during the year ended December 31, 2012 for consulting services per the aforementioned agreement. No milestones under the collaboration agreement were reached or expensed during the years ended December 31, 2013, 2012, 2011 or 2010.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

8. Commitments and Contingencies (Continued)

On June 27, 2013, the Company signed a new collaboration agreement with Harmon Hill to provide consulting and other services for the development and commercialization of oncology therapeutics by ZIOPHARM, effective April 1, 2013. Under the agreement the Company has agreed to pay Harmon Hill $15 thousand per month for the consulting services. Subject to renewal or extension by the parties, the term of the agreement is for a one year period. The Company expensed $135 thousand for the year ended December 31, 2013.

Collaboration Agreement with Solasia Pharma K.K.

On March 7, 2011, the Company entered into a License and Collaboration Agreement with Solasia Pharma K.K., or Solasia.

Pursuant to the License and Collaboration Agreement, the Company granted Solasia an exclusive license to develop and commercialize darinaparsin in both IV and oral forms and related organic arsenic molecules, in all indications for human use in a pan- Asian/Pacific territory comprised of Japan, China, Hong Kong, Macau, Republic of Korea, Taiwan, Singapore, Australia, New Zealand, Malaysia, Indonesia, Philippines and Thailand.

As consideration for the license, the Company received an upfront payment of $5.0 million to be used exclusively for further clinical development of darinaparsin outside of the pan-Asian/Pacific territory, and will be entitled to receive additional payments of up to $32.5 million in development-based milestones and up to $53.5 million in sales-based milestones. The Company will also be entitled to receive double digit royalty payments from Solasia based upon net sales of licensed products in the applicable territories, once commercialized, and a percentage of sublicense revenues generated by Solasia.

The upfront payment for research and development funding is earned over the period of effort. The Company currently estimates this period to be 75 months, which could be adjusted in the future.

Under the License and Collaboration Agreement, the Company provides Solasia with drug product to conduct clinical trials. These transfers are accounted for as a reduction of research and development costs and an increase in collaboration receivables.

The agreement provides that Solasia will be responsible for the development and commercialization of darinaparsin in the pan-Asian/Pacific territory.

CRO Services Agreement with PPD Development, L. P.

The Company is party to a Master Clinical Research Organization Services Agreement with PPD Development, L. P., or PPD, dated January 29, 2010, a related work order dated June 25, 2010 and a related work order dated April 8, 2011 under which PPD provides clinical research organization, or CRO, services in support of the Company s clinical trials. PPD is entitled to cumulative payments of up to $20.0 million under these arrangements, which is payable by

the Company in varying amounts upon PPD achieving specified milestones. During the year ended December 31, 2010, the Company expensed $1.8 million upon contract execution and $1.1 million upon a clinical study commencement of enrollment in North America. During the year ended December 31, 2011, additional milestones related to commencing enrollment in Europe, Latin America and Asia along with enrollment based milestones were met and the Company recorded an aggregate $4.0 million expense. During the year ended December 31, 2012, additional enrollment-based and contract modification milestones were met and expensed totaling $3.8 million. During the year ended December 31, 2013, patient progression and data based milestones totaling $9.2 million were met and expensed.

CRO Services Agreement with Pharmaceutical Research Associates, Inc.

On December 13, 2011, we entered into a Master Clinical Research Organization Services Agreement with Pharmaceutical Research Associates, Inc., or PRA, under which PRA provides CRO services in support of our

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

8. Commitments and Contingencies (Continued)

clinical trials. PRA is entitled to cumulative payments of up to $9.5 million under these arrangements, which is payable by us in varying amounts upon PRA achieving specified milestones. During the year ended December 31, 2012, we expensed $7.3 million upon the achievement of various letter of intent and enrollment-based milestones. During the year ended December 31, 2013, contract modification and patient enrollment based milestones totaling $2.2 million were met and expensed.

CRO Services Agreement with Novella Clinical, Inc.

On December 4, 2008, we entered into a Master Clinical Research Organization Services Agreement with Novella Clinical, Inc., or Novella, under which PRA provides CRO services in support of our clinical trials. The work order for the newest trial being conducted by Novella was signed on November 2, 2012. Novella is entitled to cumulative payments of up to $790 thousand under these arrangements, which is payable by us in varying amounts upon Novella achieving specified milestones. During the year ended December 31, 2012, we expensed $256 thousand upon the achievement of various milestones. During the year ended December 31, 2013, two database related milestones and one site activation related milestone were met and expensed totaling $136 thousand.

9. Warrants

The Company has issued both warrants that are accounted for as liabilities and warrants that are accounted for as equity instruments.

The Company follows accounting standards that provide guidance in assessing whether an equity-issued financial instrument is indexed to an entity s own stock for purposes of determining whether a financial instrument should be treated as a derivative and classified as a liability. Accounting standards require that liability classified warrants be recorded at their fair value at each financial reporting period and the resulting gain or loss be recorded as other income (expense) in the Statements of Operations. Fair value is measured using the binomial valuation model.

In May 2005, the Company issued 419,786 warrants to placement agents for services performed in connection with the 2005 Offering, 11,083 of which were subsequently exercised. The remaining 408,703 warrants were originally valued at $1.6 million. Subject to certain exceptions, these warrants provide for anti-dilution protection should common stock or common stock equivalents be subsequently issued at a price less than the exercise price of the warrants then in effect, which was initially $4.75 per share. This provision was triggered in 2006 when stock was sold at $4.63 per share in the 2006 Offering. Accordingly, the warrants were re-priced at $4.69. The provision was triggered a second time with 2009 Private Placement when stock was sold at $1.825 per share and the warrants were subsequently re-priced at $4.25. The provision was triggered again with the Company s December 2009 public offering when stock was sold at $3.10 per share and the warrants were subsequently re-priced at $3.93. Using a Black-Scholes model, the warrants were valued at $72 thousand on January 1, 2009, when the accounting standard was adopted. The reclassification attributed to adoption of the standard had the following cumulative effect on the

Balance Sheets:

(in thousands)	Liabilities	Stockholders Equity	
	Warrants	Warrants	Deficit Accumulated During the Development Stage
As reported on December 31, 2008	$	$ 20,504	$ (85,061)
Re-classification	72	(1,638)	1,566
Balance on January 1, 2009	$ 72	$ 18,866	$ (83,495)

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

9. Warrants (Continued)

The following Black-Scholes pricing assumptions were used at January 1, 2009:

	January 1, 2009
Risk-free interest rate	1.55%
Expected life in years	3.42
Expected volatility	102%
Expected dividend yield	0

Also, in connection with the December 2009 public offering, the Company issued warrants to purchase an aggregate of 8,206,520 shares of common stock (including the investor warrants and 464,520 warrants issued to the Underwriters). The investor warrants are exercisable immediately and the underwriter warrants exercisable six months after the date of issuance. The warrants have an exercise price of $4.02 per share and have a 5 year term. The fair value of the warrants was estimated at $22.9 million using a Black-Scholes model with the following assumptions: expected volatility of 105%, risk free interest rate of 2.14%, expected life of 5 years and no dividends.

Subject to certain exceptions, these warrants provide for anti-dilution protection should common stock or common stock equivalents be subsequently issued at a price less than the exercise price of the warrants then in effect, which was initially $4.02 per share. This provision was triggered in 2013 when stock was sold at $3.50 per share in our 2013 public offering. Accordingly, the outstanding warrants were increased by 184,367 warrants to 8,235,076 warrants.

The Company assessed whether the 2005 Warrants and the 2009 Warrants require accounting as derivatives. The Company determined that the warrants were not indexed to the Company s own stock in accordance with accounting standards codification Topic 815, *Derivatives and Hedging*. As such, the Company has concluded the warrants did not meet the scope exception for determining whether the instruments require accounting as derivatives and should be classified in liabilities.

On December 31, 2013, the liability-classified warrants were valued at $11.8 million using a Binomial/Monte Carlo valuation model. The decrease in the fair value of the warrant liabilities of $1.2 million for the year ended December 31, 2013 was charged to Other income, net in the Statements of Operations.

On December 31, 2012, the liability-classified warrants were valued at $13.0 million using a Binomial/Monte Carlo valuation model. The decrease in the fair value of the warrant liabilities of $6.1 million for the year ended December 31, 2012 was charged to Other income, net in the Statements of Operations.

On December 31, 2011, the liability-classified warrants were valued at $19.4 million using a Binomial/Monte Carlo valuation model. The decrease in the fair value of the warrant liabilities of $7.6 million for the year ended December 31, 2011 was charged to Other income, net in the Statements of Operations. Additionally, $0.3 million of the decrease resulted from the exercise of warrants.

The following pricing assumptions were used in the Binomial/Monte Carlo valuation model at December 31, 2013, 2012 and 2011:

	December 31, 2013	December 31, 2012	December 31, 2011
Risk-free interest rate	0.13%	0.25%	0.05 - 0.35%
Expected life in years	0.94	1.94	0.42 - 2.92
Expected volatility	80%	70%	64 - 80%
Expected dividend yield	0	0	0

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

9. Warrants (Continued)

Warrants accounted for as equity instruments include the following issuances:

During 2004, the Company issued warrants to purchase 62,621 shares of the Company s common stock to Paramount as compensation for services rendered in connection with our entering into an option agreement with Southern Research Institute. In connection with the warrants issued, the Company recorded a charge of $251 thousand to general and administrative expense. The Company has estimated the fair value of such options using the Black-Scholes model, using an assumed risk-free rate of 3.93%, and expected life of 7 years, volatility of 134% and dividend yield of 0%.

In 2005, the Company issued performance warrants to purchase 50,000 shares of the Company s common stock for services to be rendered to its investor relations consultant as compensation. In connection with the warrant issuance, 12,500 shares were exercisable immediately and the Company recorded a charge of $45 thousand to general and administrative expense in the year ended December 31, 2005. The Company has estimated the fair value of such options using the Black-Scholes model, using an assumed risk-free rate of 4.39%, an expected life of 5 years, volatility of 109%, and dividend yield of 0%. The remaining 37,500 warrants were cancelled in the year ended December 31, 2006 due to performance objectives not being obtained at the expiration of agreement.

In connection with the 2006 Offering completed on May 3, 2006, the Company issued warrants to purchase 2,397,392 shares of common stock to investors and 799,126 warrants to purchase common stock to the 2006 Placement Agents and their designees. The Company estimated the fair value of the warrants at $9.6 million and $3.5 million, respectively, using the Black-Scholes model, using an assumed risk-free rate of 5.01% and an expected life of 5 and 7 years, volatility of 100% and a dividend yield of 0%.

On February 23, 2007, as part of the 2007 Offering, the Company issued warrants to purchase 1,182,015 shares of common stock to investors and 177,302 warrants to purchase common stock to the placement agents in connection with the Company s 2007 private placement, their designees and a previously-engaged financial consultant. The Company estimated the fair value of the warrants at $4.7 million and $709 thousand respectively, using the Black-Scholes model, using an assumed risk-free rate of 4.71% and an expected life of 5 years, volatility of 93% and a dividend yield of 0%.

In connection with its 2009 private placement, the Company issued warrants to purchase an aggregate of 2,910,954 shares of common stock (including 138,617 warrants issued to the placement agents) which were exercisable immediately. The warrants have an exercise price of $2.04 per share and have a 5 year term. The fair value of the warrants was estimated at $4,207 thousand using a Black-Scholes model with the following assumptions: expected volatility of 105%, risk free interest rate of 2.41%, expected life of 5 years and no dividends. The fair value of the warrants was recorded in the equity section of the balance sheet. In October 2009, 136,986 of these warrants were exercised.

During 2010, no new warrants were issued. However, 95,505 warrants were exercised for 39,225 shares of common stock. Of these warrants, 70,738 were equity-classified and 24,767 were liability-classified. Additionally, 12,500 equity-classified warrants expired without being exercised.

During 2011, no new warrants were issued. However, 2,516,968 warrants were exercised for 2,377,571 shares of common stock. Of these warrants, 2,351,417 were equity-classified and 165,551 were liability-classified. Additionally, 277,910 equity-classified warrants expired without being exercised.

During 2012, no new warrants were issued. However, 553,914 warrants were exercised for 259,660 shares of common stock. Of these warrants, 186,297 were equity-classified and 373,617 were liability-classified. Additionally, 1,359,317 equity-classified warrants and 579 liability-classified warrants expired without being exercised.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

9. Warrants (Continued)

During 2013, no new warrants were issued. However 135,346 warrants were exercised for 112,808 shares of common stock. Of these warrants, all 135,346 were equity-classified; there were no liability-classified warrants exercised. Additionally, 706,708 equity-classified warrants expired without being exercised. All warrants will expire during the year ending December 31, 2014.

The following is a summary of warrants outstanding as of December 31, 2013.

Number of Warrants	Issued in Connection With	Exercise Price	Expiration Date
2,264,393	Investor warrants	$ 2.04	September 15, 2014
40,298	Placement warrants for services performed	2.04	September 15, 2014
8,235,076	Investor warrants	4.02	December 9, 2014
10,539,767			

10. Income Taxes

There is no provision for income taxes because the Company has incurred operating losses since inception. The reported amount of income tax expense for the years differs from the amount that would result from applying domestic federal statutory tax rates to pretax losses primarily because of the changes in the valuation allowance. Significant components of the Company s deferred tax assets at December 31, 2013 and 2012 are as follows:

	December 31,	
(in thousands)	**2013**	**2012**
Net operating loss carryforwards	$ 66,209	$ 42,715
Start-up and organizational costs	41,529	44,262
Research and development credit carryforwards	25,058	18,388
Stock compensation	1,028	991
Capitalized acquisition costs	12,323	13,270
Deferred revenue	1,074	1,388
Depreciation	129	331
Other	1,254	998
	148,604	122,343
Less valuation allowance	(148,604)	(122,343)
Net deferred tax assets	$	$

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amount of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. At December 31, 2013, the Company has aggregate net operating loss carryforwards for federal tax purposes of approximately $197.0 million available to offset future federal taxable income to the extent permitted under the Internal Revenue Code of 1986, as amended, or IRC, expiring in varying amounts through 2032. Additionally, the Company has approximately $25.0 million of research and development credits at December 31, 2013, expiring in varying amounts through 2032, which may be available to reduce future taxes.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

10. Income Taxes (Continued)

Under the IRC Section 382, certain substantial changes in the Company s ownership may limit the amount of net operating loss carryforwards that can be utilized in any one year to offset future taxable income. The net operating loss carryforwards for the year ended December 31, 2013 includes approximately $4.2 million resulting from excess tax deductions from stock options. Pursuant to ASC 740, the deferred tax asset relating to excess tax benefits generated from exercises of stock options was not recognized for financial statement purposes.

Section 382 of the IRC provides limits to which a corporation that has undergone a change in ownership (as defined) can utilize any net operating loss, or NOL, and general business tax credit carryforwards it may have. The Company commissioned an analysis to determine whether Section 382 could limit the use of its carryforwards in this manner. After completing the analysis, it was determined an ownership change had occurred in February 2007. As a result of this change, the Company s NOL s and general business tax credits from February 23, 2007 and prior would be completely limited under IRC Section 382. The deferred tax assets related to NOL s and general business credits have been reduced by $11.2 million and $636 thousand, respectively, as a result of the change. The Company updated the IRC Section 382 analysis through December 31, 2013. It was determined a change of ownership occurred on February 28, 2011. The Company s NOL s were not further limited as a result of the change.

The Company has provided a valuation allowance for the full amount of these net deferred tax assets, since it is more likely than not that these future benefits will not be realized. However, these deferred tax assets may be available to offset future income tax liabilities and expenses. The valuation allowance increased by $26.3 million primarily due to net operating loss carryforwards, start-up and organizational costs, and the increase in research and development credits.

A reconciliation of income tax expense (benefit) at the statutory federal income tax rate and income taxes as reflected in the financial statements is as follows:

	Year Ended December 31,		
(in thousands)	**2013**	**2012**	**2011**
Federal income tax at statutory rates	34%	34%	34%
State income tax, net of federal tax benefit	4%	5%	6%
Research and development credits	9%	10%	11%
Stock compensation	-2%	-1%	-1%
Uncertain tax position adjustment	0%	0%	0%
Change in warrant value	1%	2%	4%
Federal R&D tax grant	0%	0%	0%
Other	0%	0%	0%
Increase in valuation allowance	-46%	-49%	-54%
Effective tax rate	0%	0%	0%

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

10. Income Taxes (Continued)

The Company adopted ASC740, Accounting for Uncertain Tax Positions on January 1, 2007. ASC740 clarifies the accounting for uncertainty in income taxes recognized in an enterprise s financial statements in accordance with FASB Statement No. 109, Accounting for Income Taxes. ASC 740 prescribes a recognition threshold and measurement of a tax position taken or expected to be taken in a tax return. The Company did not establish any additional reserves for uncertain tax liabilities upon adoption of ASC 740. A summary of the company s adjustments to its uncertain tax positions in the years ended December 31, 2013, 2012, and 2011 are as follows:

(in thousands)	
Balance at December 31, 2010	$ 275
Increase/Decrease for tax positions related to the current year	
Increase/Decrease for tax positions related to prior years	
Decreases for settlements with applicable taxing authorities	
Decreases for lapses of statute of limitations	
Balance at December 31, 2011	$ 275
Increase/Decrease for tax positions related to the current year	
Increase/Decrease for tax positions related to prior years	
Decreases for settlements with applicable taxing authorities	
Decreases for lapses of statute of limitations	
Balance at December 31, 2012	$ 275
Increase/Decrease for tax positions related to the current year	
Increase/Decrease for tax positions related to prior years	(37)
Decreases for settlements with applicable taxing authorities	
Decreases for lapses of statute of limitations	
Balance at December 31, 2013	$ 238

The Company has not recognized any interest and penalties in the statement of operations because of the Company s net operating losses and tax credits that are available to be carried forward. When necessary, the Company will account for interest and penalties related to uncertain tax positions as part of its provision for federal and state income taxes. The Company does not expect the amounts of unrecognized benefits will change significantly within the next twelve months.

The Company is currently open to audit under the statute of limitations by the Internal Revenue Service and state jurisdictions for the years ended December 31, 1999 through 2013.

11. Preferred Stock and Stockholders Equity

On April 26, 2006, the date of the Company s annual stockholders meeting that year, the shareholders approved the adoption of an Amended and Restated Certificate of Incorporation pursuant to which the Company has 280,000,000 shares of authorized capital stock, of which 250,000,000 shares are designated as common stock (par value $.001 per share), and 30,000,000 shares are designated as preferred stock (par value $.001 per share), which the Company refers to as the Preferred Stock.

Common Stock

In September 2003, the Company issued 1,001,949 shares of common stock at $0.50 per share for gross proceeds of $500 thousand.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

11. Preferred Stock and Stockholders Equity (Continued)

In January 2004, the Company issued 9,017,538 shares of common stock at $0.50 per share for gross proceeds of $4.5 million.

In February 2004, the Company amended its articles of incorporation to provide for the combination of the Company s common stock, par value $0.001 per share on a 1-for-4 basis.

On June 6, 2005, the Company completed the 2005 Offering (see Note 2 to the financial statements, Financings). As a result of the Merger, all shares of the Series A Preferred Stock were automatically converted into the number of shares of common stock that the holders of Series A Preferred Stock would have received if their shares of Series A Preferred Stock had been converted into common stock immediately prior to the Merger.

On May 3, 2006, pursuant to subscription agreements between the Company and certain institutional and other accredited investors, the Company completed the sale of an aggregate of 7,991,256 shares of the Company s common stock at a price of $4.63 per share in the 2006 Offering. The total gross proceeds resulting from the 2006 Offering was approximately $37 million, before deducting selling commissions and expenses.

On February 23, 2007, pursuant to subscription agreements between the Company and certain institutional and other accredited investors, the Company completed the sale of an aggregate of 5,910,049 shares of the Company s common stock at a price of $5.225 per share in a private placement. The total gross proceeds resulting from the 2007 Offering was approximately $30.9 million, before deducting selling commissions and expenses.

On September 15, 2009, pursuant to subscription agreements between the Company and certain institutional and other accredited investors, the Company completed the sale of an aggregate of 2,772,337 shares of the Company s common stock at a price of $1.825 per share in a private placement. The total gross proceeds resulting from the September 2009 Offering was approximately $5.1 million, before deducting selling commissions and expenses (see Note 2 to the financial statements, Financings).

On December 9, 2009, pursuant to underwriting agreement between the Company and certain brokers, the Company completed the sale of an aggregate of 15,484,000 shares of the Company s common stock at a price of $3.10 per share in a private placement. The total gross proceeds resulting from the 2009 public offering was approximately $48.0 million, before deducting selling commissions and expenses (see Note 2 to the financial statements, Financings).

On June 2, 2010, pursuant to underwriting agreement between the Company and certain brokers, the Company completed the sale of an aggregate of 7,000,000 shares of the Company s common stock at a price of $5.00 per share in a public offering. The total gross proceeds resulting from the 2010 public offering were approximately $35.0 million, before deducting selling commissions and expenses (see Note 2 to the financial statements, Financings).

On January 6, 2011, and in conjunction with the Company s execution and delivery of a Channel Agreement, the Company entered into a Stock Purchase Agreement and Registration Rights Agreement. On January 12, 2011, and

pursuant to that Stock Purchase Agreement, the Company sold 2,426,235 shares of the Company s common stock in a private placement for a total purchase price of $11.6 million, or $4.80 per share. The Company simultaneously issued an additional 3,636,926 shares of its common stock for a cash purchase price equal to the $0.001 par value of such shares, which price was deemed paid in partial consideration for the execution and delivery of the Channel Agreement (see Note 2, Financings).

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

11. Preferred Stock and Stockholders Equity (Continued)

On February 3, 2011, pursuant to underwriting agreement between the Company and certain brokers, the Company completed the sale of an aggregate of 11,040,000 shares of the Company s common stock at a price of $5.75 per share in a public offering. The total gross proceeds resulting from the 2011 public offering were approximately $63.5 million, before deducting selling commissions and expenses (see Note 2 to the financial statements, Financings).

On January 20, 2012, pursuant to an underwriting agreement between the Company and J. P. Morgan Securities LLC, as representative of the several underwriters named therein, the Company completed the sale of an aggregate 10,114,401 shares of the Company s common stock at a price of $5.20 per share in a public offering. The total gross proceeds resulting from the 2012 public offering were approximately $52.6 million, before deducting selling commissions and expenses (see Note 2 to the financial statements, Financings).

On November 7, 2012, the Company issued 3,636,926 shares of our common stock, which we refer to as the Milestone Shares, to Intrexon under the terms of its Stock Purchase Agreement with Intrexon dated January 6, 2011. Under the terms of the Stock Purchase Agreement with Intrexon, the Company agreed to issue the Milestone Shares under certain conditions upon dosing of the first patient in a ZIOPHARM-conducted Phase 2 clinical trial in the Unites States, or similar study as the parties may agree in a country other than the United States, of a product candidate that is created, produced, developed or identified directly or indirectly by us during the term of the Channel Agreement and that, subject to certain exceptions, involves DNA administered to humans for expression of anti-cancer effectors for the purpose of treatment or prophylaxis of cancer. On October 24, 2012, the Company initiated dosing in a Phase 2 study of Ad-RTS-IL-12 + veledimex for unresectable Stage III or IV melanoma, triggering the issuance of the Milestone Shares.

On October 29, 2013, pursuant to an underwriting agreement between the Company and J. P. Morgan Securities LLC, as representative of the several underwriters named therein, the Company completed the sale of an aggregate 16,445,000 shares of the Company s common stock at a price of $3.50 per share in a public offering. The total gross proceeds resulting from this public offering were approximately $57.6 million, before deducting selling commissions and expenses (see Note 2 to the financial statements, Financings).

As of December 31, 2013, the Company had 100,159,618 shares of common stock issued and outstanding and no shares of Preferred Stock issued and outstanding.

Series A Preferred Stock

All shares of Series A Preferred Stock have been converted into shares of common stock of the Company.

Preferred Stock

The Company s Board of Directors are authorized to designate any series of Preferred Stock, to fix and determine the variations in relative rights, preferences, privileges and restrictions as between and among such series.

12. Stock Option Plan

The Company adopted the 2003 Stock Option Plan, or the 2003 Plan, in 2003, under which the Company initially reserved for the issuance of 1,252,436 shares of its common stock. The 2003 Plan was approved by the Company s stockholders on December 21, 2004. On June 23, 2010, June 4, 2009, April 25, 2007 and April 26,

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

12. Stock Option Plan (Continued)

2006, the dates of the Company s annual stockholders meetings during such years, the Company s stockholders approved amendments to the 2003 Plan increasing the total shares reserved by 3,000,000, 2,000,000, 2,000,000 and 750,000 shares, respectively, for a total of 9,002,436 shares. Upon approval of the 2012 Equity Incentive Plan, no additional stock awards may be granted under the 2003 Plan.

The Company adopted the 2012 Equity Incentive Plan, or the 2012 Plan, in May 2012, under which the Company initially reserved for the issuance of 4,000,000 shares of its common stock. The 2012 Plan was approved by the Company s stockholders on June 20, 2012.

As of December 31, 2013, the Company had outstanding options issued to its employees to purchase up to 5,834,408 shares of the Company s common stock, to its directors to purchase up to 912,645 shares of the Company s common stock, as well as options to consultants in connection with services rendered to purchase up to 250 shares of the Company s common stock.

Stock options to employees generally vest ratably over three years and have contractual terms of ten years. Stock options to directors generally vest ratably over two or three years and have contractual terms of ten years. Stock options are valued using the Black-Scholes option pricing model and compensation is recognized based on such fair value over the period of vesting on a straight-line basis. The Company has also reserved an aggregate of 45,823 additional shares for issuance under options granted outside of the 2003 Stock Option Plan. The options were granted to The University of Texas M. D. Anderson Cancer Center and DEKK-Tec, Inc. (see Note 8 to the financial statements, Commitments and Contingencies). During the year ended December 31, 2007, the Company recorded a $120 thousand stock compensation expense in connection with the Company achieving a predetermined development milestone, which triggered the vesting of 25,111 of the options granted outside of the 2003 Stock Option Plan. The 25,111 options were exercised on August 13, 2007. Proceeds from this exercise amounted to $50 thousand and the intrinsic value of these options amounted to $104 thousand. During 2010, the Company recorded an expense of $27 thousand when 6,904 DEKK-Tec stock options vested upon achieving Phase 3 milestones.

Proceeds from the 2013, 2012, and 2011 exercises amounted to $956 thousand, $30 thousand, and $980 thousand, respectively. The intrinsic value of these options amounted to $1.4 million, $11 thousand and $2.5 million for years ended December 31, 2013, 2012 and 2011, respectively.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

12. Stock Option Plan (Continued)

Transactions under the Plan for the years ending December 31, 2013, 2012, and 2011 were as follows:

(in thousands, except share and per share data)	Number of Shares	Weighted-Average Exercise Price	Weighted-Average Contractual Term (Years)	Aggregate Intrinsic Value
Outstanding, December 31, 2010	4,566,935	$ 2.82		
Granted	1,894,300	5.65		
Exercised	(479,666)	2.04		
Cancelled	(843,083)	5.01		
Outstanding, December 31, 2011	5,138,486	4.08		
Granted	2,309,650	4.36		
Exercised	(8,300)	3.61		
Cancelled	(292,533)	5.70		
Outstanding, December 31, 2012	7,147,303	4.11		
Granted	2,649,900	3.28		
Exercised	(570,168)	1.68		
Cancelled	(2,479,732)	4.58		
Outstanding, December 31, 2013	6,747,303	$ 3.81	7.17	$ 5,339
Vested and unvested expected to vest at December 31, 2013	6,711,969	$ 4.01	5.03	$ 5,311
Options exercisable, December 31, 2013	3,471,935	$ 4.01	5.03	$ 2,654
Options exercisable, December 31, 2012	3,683,786	$ 3.56	5.28	$ 3,972
Options available for future grant	416,964			

At December 31, 2013, total unrecognized compensation costs related to non-vested stock options outstanding amounted to $8.5 million. The cost is expected to be recognized over a weighted-average period of 1.84 years.

Restricted Stock

In December 2013, the Company issued 75,272 shares of restricted stock to its non-employee directors, which vested in their entirety on the one year anniversary of the grant date. In January, February and May 2012, the Company issued 101,500, 43,802 and 25,000 shares of restricted stock to employees, which vested ratably in annual installments over three years, respectively, commencing on the first anniversary of the grant date. In December 2012, the Company also issued 87,730 shares of restricted stock to its non-employee directors, which vested ratably in annual installments over three years, commencing on the first anniversary of the grant date. In July and December 2011, the Company

issued 50,000 and 720,675 shares of restricted stock to employees, which vested ratably in annual installments over three years, respectively, commencing on the first anniversary of the grant date. In January and December 2011, the Company also issued 25,000 and 52,731 shares of restricted stock to its non-employee directors, which vested in their entirety on the one year anniversary of the grant date and ratably in annual installments over three years, respectively, commencing on the first anniversary of the grant date. In March and April 2010, the Company issued 90,000 and 25,000 shares of restricted stock to its non-employee directors, respectively, all of which vested in their entirety on the one year anniversary of the grant date. In December 2009, the Company issued 347,500 shares of restricted stock to employees and 45,000 shares

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

12. Stock Option Plan (Continued)

of restricted stock to its non-employee directors, which vested ratably in annual installments over three and two years, respectively, commencing on the first anniversary of the grant date. In September 2009, the Company issued 828,000 shares of restricted stock to employees and 180,000 shares of restricted stock to its board of directors, all of which vested in their entireties on the one year anniversary of the grant date. In December 2008, the Company issued 396,500 shares of restricted stock to employees and 90,000 shares of restricted stock to its board of directors, all of which vested in December 2009. Also, in January 2008, the Company issued 100,000 shares of restricted stock to one employee which vested ratably over a three-year period. In 2007, the Company issued 70,000 shares of restricted stock to several employees which vested in December 2008. During the years ended December 31, 2013, 2012 and 2011, $1.2 million, $1.7 million, and $635 thousand of compensation expense was recognized, respectively.

In January, March, May and December 2013, the Company repurchased 52,018, 5,400, 2,623, and 56,683 shares at average prices of $4.28, $4.50, $1.65 and $4.37 per share, respectively, to cover payroll taxes. In July and December 2012, the Company repurchased 15,740 and 107,413 shares at $6.06 and $4.19 per share, respectively, to cover payroll taxes. In January and December 2011, the Company repurchased 15,190 shares and 44,369 shares at $5.14 and $4.41 per share, respectively, to cover payroll taxes. In January, September and December 2010, the Company repurchased 15,283 shares, 349,710 shares and 51,116 shares at $3.10, $3.95 and $4.66 per share, respectively, to cover payroll taxes. In December 2009, the Company repurchased 103,823 shares of vested restricted stock from employees at $3.66 per share to cover payroll taxes. A summary of the status of non-vested restricted stock as of December 31, 2013, 2012 and 2011 is as follows:

	Number of Shares	Weighted-Average Grant Date Fair Value
Non-vested, December 31, 2010	348,753	$ 2.30
Granted	848,406	4.52
Vested	(229,586)	3.56
Cancelled	(16,667)	2.85
Non-vested, December 31, 2011	950,906	4.34
Granted	258,032	4.39
Vested	(351,829)	4.32
Cancelled	(123,370)	4.34
Non-vested, December 31, 2012	733,739	4.37
Granted	75,272	4.34
Vested	(292,399)	4.31
Cancelled	(163,747)	4.42
Non-vested, December 31, 2013	352,865	$ 4.38

As of December 31, 2013, there was $1.3 million of total unrecognized stock-based compensation expense related to non-vested restricted stock arrangements. The expense is expected to be recognized over a weighted-average period of

1.45 years.

13. Employee Benefit Plan

The Company sponsors a qualified 401(k) Retirement Plan under which employees are allowed to contribute certain percentages of their pay, up to the maximum allowed under Section 401(k) of the IIRC. The Company may make contributions to this plan at its discretion. The Company contributed approximately $139 thousand, $266 thousand, and $38 thousand to this plan during the years ended December 31, 2013, 2012, and 2011, respectively.

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ZIOPHARM Oncology, Inc. (a development stage enterprise)

NOTES TO FINANCIAL STATEMENTS

14. Selected Quarterly Information (Unaudited)

(in thousands, except per share amount)

Year Ended December 31, 2013	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Revenue	$ 200	$ 200	$ 200	$ 200
Total operating expenses	23,783	18,496	9,315	6,919
Loss from operations	(23,583)	(18,296)	(9,115)	(6,719)
Change in fair value of warrants	10,788	(403)	(7,407)	(1,793)
Net (loss)	(12,799)	(18,692)	(16,713)	(8,903)
Loss per share, basic and diluted	$ (0.15)	$ (0.22)	$ (0.20)	$ (0.09)

Year Ended December 31, 2012	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Revenue	$ 200	$ 200	$ 200	$ 200
Total operating expenses	18,833	23,166	21,927	39,043
Loss from operations	(18,633)	(22,966)	(21,727)	(38,843)
Change in fair value of warrants	(5,811)	(650)	3,945	8,566
Net (loss)	(24,470)	(23,613)	(17,824)	(30,225)
Loss per share, basic and diluted	$ (0.32)	$ (0.30)	$ (0.23)	$ (0.37)

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Exhibit index

Exhibit number	Description of exhibit
2.1*	Agreement and Plan of Merger, dated as of December 19, 2013 by and among Intrexon, Medistem Inc. and XON Cells, Inc.(7)
2.2*	First Amendment to Agreement and Plan of Merger, dated as of January 29, 2014, by and among Intrexon, Medistem Inc. and XON Cells, Inc.(9)
3.1*	Amended and Restated Articles of Incorporation(4)
3.2*	Bylaws(4)
4.1*	Specimen certificate evidencing shares of common stock(2)
4.2*	Warrants to purchase shares of common stock(2)
4.3*	Eighth Amended and Restated Investors Rights Agreement, dated March 1, 2013, by and among Intrexon and the holders of the Company s preferred stock and certain holders of Intrexon s common stock and Joinder thereto(1)
9.1*	Voting Agreement, dated as of December 19, 2013, by and among Intrexon, Medistem Inc. and certain holders of Medistem common(7)
10.1 *	Intrexon Corporation Amended and Restated 2008 Equity Incentive Plan and Form of Incentive Stock Option Agreement(2)
10.2 *	Intrexon Corporation 2013 Omnibus Incentive Plan and Forms of Award Agreements(2)
10.3#*	Exclusive Channel Partner Agreement, dated as of January 6, 2011, between Intrexon and ZIOPHARM Oncology, Inc., as amended(1)
10.4*	Stock Purchase Agreement, dated as of January 6, 2011, between Intrexon and ZIOPHARM Oncology, Inc.(1)
10.5#*	Exclusive Channel Collaboration Agreement, dated as of June 5, 2012, between Intrexon and Oragenics, Inc.(1)
10.6#*	Exclusive Channel Collaboration Agreement, dated as of August 6, 2012, between Intrexon and Synthetic Biologics, Inc.(1)
10.7#*	Exclusive Channel Collaboration Agreement, dated as of October 5, 2012, between Intrexon and Fibrocell Science, Inc.(1)
10.7A*	First Amendment to Exclusive Channel Collaboration Agreement, dated as of June 28, 2013, between Intrexon and Fibrocell Science, Inc.(1)
10.7B*	Second Amendment to Exclusive Channel Collaboration Agreement, dated as of January 10, 2014, between Intrexon and Fibrocell Science, Inc.(8)
10.7C*	

	Supplemental Stock Issuance Agreement, dated as of January 10, 2014, between Fibrocell Science, Inc. and Intrexon(8)
10.8#*	Exclusive Channel Collaboration Agreement, dated as of February 14, 2013, between Intrexon and AquaBounty Technologies, Inc.(1)
10.9*	Relationship Agreement, dated as of December 5, 2012, between Intrexon and AquaBounty Technologies, Inc.(1)
10.10#*	Exclusive Channel Collaboration Agreement, dated as of March 29, 2013, between Intrexon and Genopaver, LLC(1)
10.11 *	Second Amended and Restated Employment Agreement, dated as of August 31, 2006, between Intrexon and Thomas D. Reed(2)
10.12#*	Collaboration and License Agreement, dated as of June 6, 2011, between Intrexon and Halozyme, Inc.(3)
10.13#*	Exclusive Channel Collaboration Agreement, dated as of September 30, 2013, between Intrexon and Oragenics, Inc.(5)

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10.14#*	Exclusive Channel Collaboration Agreement, dated as of September 30, 2013, between Intrexon and S & I Ophthalmic, LLC(6)
10.15#*	Limited Liability Company Agreement, dated as of September 30, 2013, among Intrexon, Caraco Pharmaceutical Laboratories Ltd. and S & I Ophthalmic, LLC(6)
21.1	List of Subsidiaries of Intrexon
23.1	Consent of PricewaterhouseCoopers LLP
23.2	Consent of McGladrey LLP
31.1	Certification of Randal J. Kirk, Chairman and Chief Executive Officer (Principal Executive Officer) of Intrexon Corporation, pursuant to Rules 13a-14(a) and 15d-14(a) promulgated under the Securities Exchange Act of 1934, as amended, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2	Certification of Rick L. Sterling, Chief Financial Officer (Principal Financial Officer) of Intrexon Corporation, pursuant to Rules 13a-14(a) and 15d-14(a) promulgated under the Securities Exchange Act of 1934, as amended, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1**	Certification of Randal J. Kirk, Chairman and Chief Executive Officer (Principal Executive Officer) of Intrexon Corporation, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.2**	Certification of Rick L. Sterling, Chief Financial Officer (Principal Financial Officer) of Intrexon Corporation, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101**	Interactive Data File (Intrexon Corporation and Subsidiaries Consolidated Financial Statements for the years ended December 31, 2013, 2012 and 2011, furnished in XBRL (eXtensible Business Reporting Language)). Attached as Exhibit 101 are the following documents formatted in XBRL: (i) the Consolidated Balance Sheets at December 31, 2013 and 2012, (ii) the Consolidated Statements of Operations for the years ended December 31, 2013, 2012 and 2011, (iii) the Consolidated Statements of Shareholders and Total Deficit for the years ended December 31, 2013 and 2012, (iv) the Consolidated Statements of Cash Flows for the years ended December 31, 2013 and 2012 and (v) the Notes to Consolidated Financial Statements for the years ended December 31, 2013, 2012 and 2011. Users of this data are advised pursuant to Rule 406T of Regulation S-T that this interactive data file is deemed not filed or part of a registration statement or prospectus for purposes of sections 11 or 12 of the Securities Act of 1933, is deemed not filed for purposes of section 18 of the Securities and Exchange Act of 1934, and otherwise is not subject to liability under these sections. Users of this data are advised pursuant to Rule 406T of Regulation S-T that this interactive data file is deemed not filed or part of a registration statement or prospectus for purposes of sections 11 or 12 of the Securities Act of 1933, is deemed not filed for purposes of section 18 of the Securities and Exchange Act of 1934, and otherwise is not subject to liability under these sections.

* Previously filed and incorporated by reference to the exhibit indicated in the following filings by Intrexon:

(1) Registration Statement on Form S-1, filed with the Securities and Exchange Commission on July 9, 2013.

(2) Amendment No. 1 to Registration Statement on Form S-1, filed with the Securities and Exchange Commission on July 29, 2013.

(3) Amendment No. 2 to Registration Statement on Form S-1, filed with the Securities and Exchange Commission on August 6, 2013.
(4) Current Report on Form 8-K, filed with the Securities and Exchange Commission on August 15, 2013.
(5) Current Report on Form 8-K, filed with the Securities and Exchange Commission on October 1, 2013.
(6) Current Report on Form 8-K/A, filed with the Securities and Exchange Commission on October 30, 2013.
(7) Current Report on Form 8-K, filed with the Securities and Exchange Commission on December 23, 2013.

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(8) Current Report on Form 8-K, filed with the Securities and Exchange Commission on January 13, 2014.
(9) Current Report on Form 8-K, filed with the Securities and Exchange Commission on January 30, 2014.
** Furnished herewith
Indicates management contract or compensatory plan.
Portions of the exhibit (indicated by asterisks) have been omitted pursuant to a confidential treatment order granted by the Securities and Exchange Commission.