INTREXON CORP
Form 10-Q
August 09, 2016
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-Q
x QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the quarterly period ended June 30, 2016
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)
20374 Seneca Meadows Parkway Germantown, Maryland	20876
(Address of principal executive offices)	(Zip Code)

(301) 556-9900
(Registrant's telephone number, including area code)
(Former name, former address and former fiscal year, if changed since last report date)
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 ¨
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 whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.
Large accelerated filer x Accelerated filer ¨

Non-accelerated filer ¨ (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 July 31, 2016, 118,325,697 shares of common stock, no par value per share, were outstanding.

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Special Note Regarding Forward-Looking Statements

This Quarterly Report on Form 10-Q contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, which statements involve substantial risks and uncertainties. All statements, other than statements of historical facts, included in this Quarterly Report on Form 10-Q 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," "predict," "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"), license agreements and other collaborations;
- developments concerning our collaborators and licensees;
- 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' and licensees' 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 and licensees, to protect our intellectual property and other proprietary rights and technologies;
- our ability, and the ability of our collaborators and licensees, to adapt to changes in laws or regulations and policies;
- the ability of our collaborators and licensees to secure any necessary regulatory approvals to commercialize any products developed under the ECCs, license agreements and joint ventures;
- the ability of our collaborators and licensees to develop and successfully commercialize products enabled by our technologies;
- the rate and degree of market acceptance of any products developed by a collaborator under an ECC or through a joint venture or license under a license agreement;
- our ability to retain and recruit key personnel;
- the result of litigation proceedings that we face currently or may face in the future;
- our expectations related to the use of proceeds from our public offerings and other financing efforts; and
- our estimates regarding expenses, future revenue, capital requirements and needs for additional financing.

Forward-looking statements may also concern our expectations relating to our subsidiaries and other affiliates. We caution you that the foregoing list may not contain all of the forward-looking statements made in this Quarterly Report on Form 10-Q.

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

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cautionary statements included in this Quarterly Report on Form 10-Q, particularly in Part II, 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 Quarterly Report on Form 10-Q, the documents that we reference in this Quarterly Report on Form 10-Q, our Annual Report on Form 10-K for the year ended December 31, 2015 and the documents that we have filed as exhibits to our filings with the Securities and Exchange Commission 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. FINANCIAL INFORMATION
Item 1. Consolidated Financial Statements
Intrexon Corporation and Subsidiaries
Consolidated Balance Sheets
(Unaudited)

(Amounts in thousands, except share data)	June 30, 2016	December 31, 2015
Assets		
Current assets		
Cash and cash equivalents	$155,081	$ 135,782
Short-term investments	115,667	102,528
Receivables		
Trade, net	27,028	25,101
Related parties	14,394	23,597
Note, net	—	601
Other	2,294	2,995
Inventory	24,492	26,563
Prepaid expenses and other	6,701	6,634
Total current assets	345,657	323,801
Long-term investments	50,463	105,447
Equity securities	39,020	83,653
Investment in preferred stock	120,000	—
Property, plant and equipment, net	46,659	42,739
Intangible assets, net	244,314	247,535
Goodwill	161,257	165,169
Investments in affiliates	22,714	9,977
Other assets	1,028	3,725
Total assets	$1,031,112	$ 982,046

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

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Intrexon Corporation and Subsidiaries
Consolidated Balance Sheets
(Unaudited)

(Amounts in thousands, except share data)	June 30, 2016	December 31, 2015
Liabilities and Total Equity		
Current liabilities		
Accounts payable	$8,204	$ 4,967
Accrued compensation and benefits	9,474	19,050
Other accrued liabilities	13,295	7,949
Deferred revenue	53,863	35,366
Lines of credit	461	561
Current portion of long term debt	491	930
Current portion of deferred consideration	9,255	6,931
Related party payables	456	150
Total current liabilities	95,499	75,904
Long term debt, net of current portion	7,530	7,598
Deferred consideration, net of current portion	6,689	8,698
Deferred revenue, net of current portion	271,376	162,363
Deferred tax liabilities	18,680	21,802
Other long term liabilities	3,157	795
Total liabilities	402,931	277,160
Commitments and contingencies (Note 17)		
Total equity		
Common stock, no par value, 200,000,000 shares authorized as of June 30, 2016 and December 31, 2015; 118,269,920 and 116,658,886 shares issued and outstanding as of June 30, 2016 and December 31, 2015, respectively	—	—
Additional paid-in capital	1,297,103	1,249,559
Accumulated deficit	(656,222)	(542,729)
Accumulated other comprehensive loss	(21,651)	(12,752)
Total Intrexon shareholders' equity	619,230	694,078
Noncontrolling interests	8,951	10,808
Total equity	628,181	704,886
Total liabilities and total equity	$1,031,112	$ 982,046

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

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Intrexon Corporation and Subsidiaries
Consolidated Statements of Operations
(Unaudited)

(Amounts in thousands, except share and per share data)	Three Months Ended June 30,		Six Months Ended June 30,	
	2016	2015	2016	2015
Revenues				
Collaboration and licensing revenues	$27,481	$ 17,181	$51,554	$ 31,964
Product revenues	10,884	14,266	19,439	23,199
Service revenues	13,927	13,255	24,592	23,212
Other revenues	209	189	354	365
Total revenues	52,501	44,891	95,939	78,740
Operating Expenses				
Cost of products	10,753	11,764	20,315	20,439
Cost of services	6,332	6,503	12,004	11,865
Research and development	28,375	20,381	54,231	99,688
Selling, general and administrative	30,263	23,673	73,144	51,301
Total operating expenses	75,723	62,321	159,694	183,293
Operating loss	(23,222)	(17,430)	(63,755)	(104,553)
Other Income (Expense), Net				
Unrealized and realized appreciation (depreciation) in fair value of equity securities	(23,469)	(20,609)	(45,800)	94,845
Interest expense	(267)	(359)	(532)	(702)
Interest income	713	344	1,323	644
Other income (expense), net	676	(326)	1,237	(59)
Total other income (expense), net	(22,347)	(20,950)	(43,772)	94,728
Equity in net loss of affiliates	(5,053)	(2,180)	(10,696)	(4,136)
Loss before income taxes	(50,622)	(40,560)	(118,223)	(13,961)
Income tax benefit (expense)	591	(934)	2,872	(1,729)
Net loss	$(50,031)	$ (41,494)	$(115,351)	$ (15,690)
Net loss attributable to the noncontrolling interests	967	831	1,858	2,124
Net loss attributable to Intrexon	$(49,064)	$ (40,663)	$(113,493)	$ (13,566)
Net loss attributable to Intrexon per share, basic and diluted	$(0.42)	$ (0.37)	$(0.97)	$ (0.13)
Weighted average shares outstanding, basic and diluted	118,141,377	109,318,471	117,501,264	107,720,040

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
(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
(Amounts in thousands)	2016	2015	2016	2015
Net loss	$(50,031)	$(41,494)	$(115,351)	$(15,690)
Other comprehensive income (loss):				
Unrealized gain (loss) on investments	152	(8)	739	19
Foreign currency translation adjustments	(10,370)	848	(9,672)	(2,272)
Comprehensive loss	(60,249)	(40,654)	(124,284)	(17,943)
Comprehensive loss attributable to the noncontrolling interests	969	843	1,892	2,096
Comprehensive loss attributable to Intrexon	$(59,280)	$(39,811)	$(122,392)	$(15,847)

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
(Unaudited)

(Amounts in thousands, except share data)	Common Stock Shares	Amount	Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total Intrexon Shareholders Equity	Noncontrolling Interests	Total Equity
Balances at December 31, 2015	116,658,886	$ —	$1,249,559	$ (12,752)	$ (542,729)	$ 694,078	$ 10,808	$ 704,886
Stock-based compensation expense	—	—	19,783	—	—	19,783	35	19,818
Exercises of stock options and warrants	1,258,327	—	17,671	—	—	17,671	—	17,671
Shares issued as payment for services	216,367	—	5,689	—	—	5,689	—	5,689
Shares issued in asset acquisition	136,340	—	4,401	—	—	4,401	—	4,401
Net loss	—	—	—	—	(113,493)	(113,493)	(1,858)	(115,351)
Other comprehensive loss	—	—	—	(8,899)	—	(8,899)	(34)	(8,933)
Balances at June 30, 2016	118,269,920	$ —	$1,297,103	$ (21,651)	$ (656,222)	$ 619,230	$ 8,951	$ 628,181

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
(Unaudited)

	Six Months Ended June 30,	
(Amounts in thousands)	2016	2015
Cash flows from operating activities		
Net loss	$(115,351)	$(15,690)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	11,674	7,358
Loss on disposal of property, plant and equipment	225	201
Unrealized and realized (appreciation) depreciation on equity securities	45,800	(94,845)
Amortization of discount/premium on investments	598	196
Equity in net loss of affiliates	10,696	4,136
Stock-based compensation expense	19,839	18,139
Shares issued as payment for services	5,689	480
Shares issued as consideration for license agreement	—	59,579
Provision for bad debts	1,183	984
Deferred income taxes	(2,659)	952
Other noncash items	391	542
Changes in operating assets and liabilities:		
Receivables:		
Trade	(2,463)	(127,516)
Related parties	9,203	213
Note	(24)	(20)
Other	626	210
Inventory	2,071	(1,212)
Prepaid expenses and other	1,299	(1,669)
Other assets	2,697	(4,876)
Accounts payable	2,834	(125)
Accrued compensation and benefits	(9,543)	4,099
Other accrued liabilities	4,807	839
Deferred revenue	(6,078)	60,909
Related party payables	331	57,370
Other long term liabilities	106	188
Net cash used in operating activities	(16,049)	(29,558)

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
(Unaudited)

	Six Months Ended June 30,	
(Amounts in thousands)	2016	2015
Cash flows from investing activities		
Maturities of investments	41,987	48,000
Purchases of equity securities and warrants	(1,167)	(14,900)
Acquisitions of businesses, net of cash received	—	(39,501)
Acquisition of noncontrolling interest	—	(1,566)
Investments in affiliates	(5,054)	(3,334)
Cash paid in asset acquisition	(7,244)	—
Purchases of property, plant and equipment	(10,038)	(6,740)
Proceeds from sale of property, plant and equipment	140	233
Net cash provided by (used in) investing activities	18,624	(17,808)
Cash flows from financing activities		
Proceeds from issuance of shares in public offerings, net of issuance costs	—	110,041
Advances from lines of credit	1,540	11,680
Repayments of advances from lines of credit	(1,640)	(13,080)
Proceeds from long term debt	—	44
Payments of long term debt	(685)	(678)
Proceeds from stock option exercises	17,671	10,382
Net cash provided by financing activities	16,886	118,389
Effect of exchange rate changes on cash and cash equivalents	(162)	410
Net increase in cash and cash equivalents	19,299	71,433
Cash and cash equivalents		
Beginning of period	135,782	27,466
End of period	$155,081	$98,899
Supplemental disclosure of cash flow information		
Cash paid during the period for interest	$140	$99
Significant noncash financing and investing activities		
Note receivable as consideration for collaboration agreement	$—	$5,000
Stock received as consideration for collaboration agreements	13,666	—
Preferred stock received as consideration for collaboration amendments	120,000	—
Stock issued in business combinations	—	70,668
Stock issued to acquire noncontrolling interest	—	9,412
Stock issued in asset acquisition	4,401	—
Contingent consideration assumed in asset acquisition	3,660	—
Noncash dividend to shareholders	—	172,419
Purchases of equipment included in accounts payable and other accrued liabilities	1,118	1,064

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

1. Organization

Intrexon Corporation ("Intrexon"), a Virginia corporation, forms collaborations to create biologically based products and processes using synthetic biology. Intrexon's primary domestic operations are in California, Florida, Maryland, and Virginia, and its primary international operations are in Belgium and Hungary. There have been no commercialized products derived from Intrexon's collaborations to date.

Trans Ova Genetics, L.C. ("Trans Ova"), a provider of bovine reproductive technologies and other genetic processes to cattle breeders and producers, is a wholly owned subsidiary of Intrexon with primary operations in Iowa, Maryland, Missouri, Oklahoma, and Texas.

ViaGen, L.C. ("ViaGen"), a provider of genetic preservation and cloning technologies, and Exemplar Genetics, LLC ("Exemplar"), a provider of genetically engineered swine for medical and genetic research, are wholly owned subsidiaries with primary operations in Texas and Iowa, respectively.

Intrexon Produce Holdings, Inc. ("IPHI") is a wholly owned subsidiary of Intrexon. Okanagan Specialty Fruits, Inc. ("Okanagan"), a company which developed and received regulatory approval for the world's first non-browning apple without the use of any flavor-altering chemical or antioxidant additives, is a wholly owned subsidiary of IPHI with primary operations in Canada. Fruit Orchard Holdings, Inc. ("FOHI") is a wholly owned subsidiary of IPHI with primary operations in Washington.

Oxitec Limited ("Oxitec"), a pioneering company in biological insect control solutions, is a wholly owned subsidiary of Intrexon with primary operations in England and Brazil.

As of June 30, 2016, Intrexon owned approximately 63% of AquaBounty Technologies, Inc. ("AquaBounty"), a company focused on improving productivity in commercial aquaculture, and approximately 51% of Biological & Popular Culture, Inc. ("BioPop"), a company developing artwork, children's toys and novelty goods that are derived from living organisms or enabled by synthetic biology.

Intrexon Corporation and its consolidated subsidiaries are hereinafter referred to as the "Company."

2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying interim consolidated financial statements are unaudited and have been prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"). Certain information and footnote disclosures normally included in the Company's annual financial statements have been condensed or omitted. These interim consolidated financial statements, in the opinion of management, reflect all normal recurring adjustments necessary for fair statement of the Company's financial position as of June 30, 2016 and results of operations and cash flows for the interim periods ended June 30, 2016 and 2015. The year-end consolidated balance sheet data was derived from the Company's audited financial statements but does not include all disclosures required by U.S. GAAP. These interim financial results are not necessarily indicative of the results to be expected for the year ending December 31, 2016, or for any other future annual or interim period. The accompanying interim unaudited consolidated financial statements should be read in conjunction with the audited consolidated financial statements and related notes thereto included in the Company's Annual Report on Form 10-K for the year ended December 31, 2015. The accompanying consolidated financial statements reflect the operations of the Company and its subsidiaries. All intercompany accounts and transactions have been eliminated.

Investment in Preferred Stock

The Company holds preferred stock received from one of its collaborators, ZIOPHARM Oncology, Inc. ("ZIOPHARM"), which may be converted to common stock upon the occurrence of certain events in the future (Note 7). The Company elected

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the fair value option to account for its investment in preferred stock whereby the value of preferred stock is adjusted to fair value as of each reporting date and unrealized gains and losses are reported in the consolidated statement of operations. This investment is subject to fluctuation in the future due to, among other things, the likelihood and timing of conversion of the preferred stock into common stock, the volatility of ZIOPHARM's common stock, and changes in general economic and financial conditions of ZIOPHARM. The investment is classified as noncurrent in the consolidated balance sheet because the Company does not intend to sell the investment or expect it to be converted into shares of common stock within one year.

The Company is entitled to a monthly dividend payable in additional shares of preferred stock.

Equity Method Investments

The Company accounts for its investments in each of its joint ventures and for its investments in start-up entities backed by the Harvest Intrexon Enterprise Fund I, LP ("Harvest") (Note 18) using the equity method of accounting because the Company has the ability to exercise significant influence, but not control, over the operating activities of these entities. The Company's investments in these entities are included in investments in affiliates in the accompanying consolidated balance sheets.

The Company determined that it had significant influence over Oragenics, Inc. ("Oragenics"), a collaborator, as of June 30, 2016 and December 31, 2015, based on its ownership interest and other qualitative factors. The Company accounts for its investment in Oragenics using the fair value option.

The fair value of the Company's equity securities of Oragenics was $6,626 and $16,601 as of June 30, 2016 and December 31, 2015, respectively, and is included as equity securities in the accompanying consolidated balance sheets. The Company's ownership percentage of Oragenics was 29.5% and 30.7% at June 30, 2016 and December 31, 2015, respectively. Unrealized appreciation (depreciation) in the fair value of these securities was $(4,797) and $2,943 for the three months ended June 30, 2016 and 2015, respectively, and $(11,142) and $3,879 for the six months ended June 30, 2016 and 2015, respectively.

Summarized unaudited financial data as of June 30, 2016 and December 31, 2015 and for the three and six months ended June 30, 2016 and 2015, for the Company's equity method investments are shown in the following tables. Summarized unaudited financial data for ZIOPHARM has been included for the three and six months ended June 30, 2015 as the Company determined it had significant influence over ZIOPHARM until the Company distributed all of its common stock held in ZIOPHARM to its shareholders in June 2015.

	June 30, 2016	December 31, 2015
Current assets	$70,182	$ 28,123
Non-current assets	11,059	1,539
Total assets	81,241	29,662
Current liabilities	7,633	6,274
Net assets	$73,608	$ 23,388

	Three Months Ended June 30,		Six Months Ended June 30,	
	2016	2015	2016	2015
Revenues	$47	$514	$329	$1,150
Operating expenses	14,383	25,424	32,043	109,493
Operating loss	(14,336)	(24,910)	(31,714)	(108,343)
Other	1,424	4	1,427	3
Net loss	$(12,912)	$(24,906)	$(30,287)	$(108,340)

Variable Interest Entities

As of June 30, 2016 and December 31, 2015, the Company determined that certain of its collaborators and joint ventures as well as Harvest were variable interest entities ("VIE" or "VIEs"). The Company was not the primary beneficiary for these entities since it did not have the power to direct the activities that most significantly impact the economic performance of the

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VIEs. The Company's aggregate investment balances of these VIEs as of June 30, 2016 and December 31, 2015 was $137,920 and $3,598, respectively, which represents the Company's maximum risk of loss related to the identified VIEs.

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, 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

While the Company generates revenues from multiple sources, including collaboration agreements, licensing, and products and services associated with bovine reproduction, management is organized around a singular research and development focus to further the development of the Company's underlying synthetic biology technologies. Accordingly, the Company has determined that it operates in one segment. As of June 30, 2016 and December 31, 2015, the Company had $5,666 and $3,877, respectively, of long-lived assets in foreign countries. The Company recognized revenues derived in foreign countries totaling $2,680 and $925 for the three months ended June 30, 2016 and 2015, respectively, and $5,176 and $2,263 for the six months ended June 30, 2016 and 2015, respectively.

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.

Recently Issued Accounting Pronouncements

In March 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2016-09, Stock Compensation (Topic 718) - Improvements to Employee Share-Based Payment Accounting ("ASU 2016-09"). The provisions of ASU 2016-09 simplify various aspects of the accounting for employee share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. The guidance is effective for annual periods and interim periods within those annual periods beginning after December 15, 2016, with early adoption permitted, and is effective for the Company for the year ending December 31, 2017. The Company is currently evaluating the impact that the implementation of this standard will have on the Company's consolidated financial statements.

In March 2016, the FASB issued ASU 2016-07, Investments-Equity Method and Joint Ventures (Topic 323) - Simplifying the Transition to the Equity Method of Accounting ("ASU 2016-07"). The provisions of ASU 2016-07 eliminate the requirement that when an investment qualifies for use of the equity method as a result of an increase in the level of ownership interest or degree of influence, an adjustment must be made to the investment, results of operations, and retained earnings retroactively on a step-by-step basis as if the equity method had been in effect during all previous periods that the investment had been held. The guidance is effective for annual periods and interim periods within those annual periods beginning after December 15, 2016, with early adoption permitted, and is effective for the Company for the year ending December 31, 2017. The Company is currently evaluating the impact that the implementation of this standard will have on the Company's consolidated financial statements.

In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842) ("ASU 2016-02"). The provisions of ASU 2016-02 set out the principles for the recognition, measurement, presentation and disclosure of leases for both parties to a contract (i.e. lessees and lessors). The new standard requires lessees to apply a dual approach, classifying leases as either finance or operating leases based on the principle of whether or not the lease is effectively a financed purchase by the lessee. This classification will determine whether lease expense is recognized based on an effective interest method or on a straight line basis over the term of the lease, respectively. A lessee is also required to record a right-of-use asset and a lease liability for all leases with a term of greater than 12 months regardless of their

classification. Leases with a term of 12 months or less will be accounted for in a similar manner as under existing guidance for operating leases today. ASU 2016-02 supersedes the previous lease standard, Topic 840 Leases. The guidance is effective for annual periods and interim periods within those annual periods

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beginning after December 15, 2018, and is effective for the Company for the year ending December 31, 2019. The Company is currently evaluating the impact that the implementation of this standard will have on the Company's consolidated financial statements.

In January 2016, the FASB issued ASU 2016-01, Financial Instruments - Overall (Subtopic 825-10) - Recognition and Measurement of Financial Assets and Financial Liabilities ("ASU 2016-01"). The provisions of ASU 2016-01 make targeted improvements to enhance the reporting model for financial instruments to provide users of financial statements with more decision-useful information, including certain aspects of recognition, measurement, presentation, and disclosure of financial instruments. The guidance is effective for annual periods and interim periods within those annual periods beginning after December 15, 2017, and is effective for the Company for the year ending December 31, 2018. The Company is currently evaluating the impact that the implementation of this standard will have on the Company's consolidated financial statements.

In November 2015, the FASB issued ASU 2015-17, Income Taxes (Topic 740) - Balance Sheet Classification of Deferred Taxes ("ASU 2015-17"). The provisions of ASU 2015-17 simplify the presentation of deferred income taxes by requiring an entity to classify deferred tax liabilities and assets as noncurrent on a classified balance sheet. The Company elected to early adopt this guidance during the first quarter of 2016 and applied it prospectively, and there was no significant impact on the Company's consolidated financial statements.

In July 2015, the FASB issued ASU 2015-11, Inventory (Topic 330) - Simplifying the Measurement of Inventory ("ASU 2015-11"). The provisions of ASU 2015-11 provide guidance for simplifying the calculation for subsequent measurement of inventory measured using the first-in-first-out or average cost methods. The guidance is effective for annual periods and interim periods within those annual periods beginning after December 15, 2016, and is effective for the Company for the year ending December 31, 2017. The Company is currently evaluating the impact that the implementation of this standard will have on the Company's consolidated financial statements.

In May 2014, the FASB issued ASU 2014-09, Revenue from Contracts with Customers ("ASU 2014-09"). The FASB issued ASU 2014-09 to clarify the principles for recognizing revenue and to develop a common revenue standard for U.S. GAAP. The standard outlines a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers and supersedes the most current revenue recognition guidance. This guidance was originally effective for annual periods and interim periods within those annual periods beginning after December 15, 2016 and early adoption was not permitted. In August 2015, the FASB issued ASU 2015-14, Revenue from Contracts with Customers (Topic 606) - Deferral of the Effective Date ("ASU 2015-14"), which deferred the effective date of the guidance in ASU 2014-09 by one year to December 15, 2017 for interim and annual reporting periods beginning after that date and permitted early adoption of the standard, but not before the original effective date of December 15, 2016, and is effective for the Company for the year ending December 31, 2018. In March, April and May 2016, the FASB clarified the implementation guidance on principal versus agent, identifying performance obligations, licensing, narrow-scope improvements and practical expedients by issuing ASU 2016-08, Revenue from Contracts with Customers (Topic 606) - Principal versus Agent Considerations ("ASU 2016-08"), ASU 2016-10, Revenue from Contracts with Customers (Topic 606) - Identifying Performance Obligations and Licensing ("ASU 2016-10"), and ASU 2016-12, Revenue from Contracts with Customers (Topic 606) - Narrow-Scope Improvements and Practical Expedients ("ASU 2016-12"). The Company is currently evaluating the impact that the implementation of this standard will have on the Company's consolidated financial statements.

Reclassifications

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

3. Mergers and Acquisitions

Oxitec Acquisition

In September 2015, pursuant to a Stock Purchase Agreement (the "Oxitec Purchase Agreement"), the Company acquired 100% of the issued outstanding share capital of Oxitec. The aggregated consideration paid consisted of (i) 1,359,343 shares of the Company's common stock (the "Stock Consideration") and (ii) $90,199 in cash (the "Cash Consideration"), inclusive of net cash and working capital adjustments, as defined in the Oxitec Purchase Agreement, totaling $9,449. Stock Consideration totaling 480,422 shares and Cash Consideration totaling $1,991 were withheld as

escrow at closing and are issuable and payable, respectively, eighteen months after closing, subject to reduction for satisfaction of any claims for indemnification made by the Company under the Oxitec Purchase Agreement. Cash Consideration withheld is included in deferred

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consideration as of June 30, 2016. The results of Oxitec's operations subsequent to the acquisition date have been included in the consolidated financial statements.

The fair value of the total consideration transferred was $146,394. The acquisition date fair value of the Stock Consideration and Cash Consideration is presented below:

Cash	$90,199
Common shares	56,195
	$146,394

The fair value of the shares of the Company common stock issued was based on the quoted closing price of the Company's common stock as of the closing date of the acquisition. The estimated fair value of assets acquired and liabilities assumed at the acquisition date is shown below:

Cash	$3,780
Trade receivables	125
Other receivables	7,395
Prepaid expenses and other	121
Property, plant, and equipment	1,198
Intangible assets	96,854
Total assets acquired	109,473
Accounts payable	1,187
Accrued compensation and benefits	246
Other accrued liabilities	210
Deferred revenue	120
Deferred tax liabilities	12,584
Total liabilities assumed	14,347
Net assets acquired	95,126
Goodwill	51,268
Total consideration	$146,394

The acquired intangible assets primarily include in-process research and development, the fair value of which was determined using the multi-period excess earning method, which is a variation of the income approach that converts future cash flows to single discounted present value amounts. The in-process research and development are currently indefinite-lived intangible assets and, accordingly, are not being amortized. Goodwill, which is not expected to be deductible for tax purposes, represents the assembled workforce and the potential for future Oxitec products and technologies.

The Company incurred $1,675 of acquisition-related costs which were included in selling, general and administrative expenses in the consolidated statements of operations for the related periods.

Okanagan Acquisition

In April 2015, pursuant to a Stock Purchase Agreement (the "Okanagan Purchase Agreement"), the Company acquired 100% of the outstanding shares of Okanagan. Pursuant to the Okanagan Purchase Agreement, the former shareholders of Okanagan received an aggregate of 707,853 shares of the Company's common stock, and $10,000 cash in exchange for all shares in Okanagan. The results of Okanagan's operations subsequent to the acquisition date have been included in the consolidated financial statements.

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The fair value of the total consideration transferred was $40,933. The acquisition date fair value of each class of consideration transferred is presented below:

Cash	$10,000
Common shares	30,933
	$40,933

The fair value of the shares of the Company's common stock issued was based on the quoted closing price of the Company's common stock as of the closing date of the acquisition. The estimated fair value of assets acquired and liabilities assumed at the acquisition date is shown below:

Cash	$58
Trade receivables	16
Other receivables	49
Property, plant, and equipment	32
Intangible assets	36,500
Total assets acquired	36,655
Accounts payable	181
Deferred revenue	181
Deferred tax liabilities	8,847
Total liabilities assumed	9,209
Net assets acquired	27,446
Goodwill	13,487
Total consideration	$40,933

The acquired intangible assets primarily include developed technology, patents and know-how and the fair values of the acquired assets were determined using the with-and-without method, which is a variation of the income approach that utilizes estimated cash flows with all assets in place at the valuation date and estimated cash flows with all assets in place except the intangible assets at the valuation date. The intangible assets are being amortized over a useful life of fourteen years. Goodwill, which is not expected to be deductible for tax purposes, represents potential future applications of Okanagan's technology to other fruits, including additional apple varietals, and anticipated buyer-specific synergies arising from the combination of the Company's and Okanagan's technologies.

The Company incurred $341 of acquisition-related costs, of which $104 and $267 are included in selling, general and administrative expenses in the accompanying consolidated statements of operations for the three and six months ended June 30, 2015, respectively.

ActoGeniX Acquisition

In February 2015, the Company acquired 100% of the membership interests of ActoGeniX NV ("ActoGeniX"), a European biopharmaceutical company, pursuant to a Stock Purchase Agreement (the "ActoGeniX Purchase Agreement"). ActoGeniX's platform technology complements the Company's suite of proprietary technologies available for current and future collaborators. Pursuant to the ActoGeniX Purchase Agreement, the former members of ActoGeniX received an aggregate of 965,377 shares of the Company's common stock and $32,739 in cash in exchange for all membership interests of ActoGeniX. The results of ActoGeniX's operations subsequent to the acquisition date have been included in the consolidated financial statements.

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The fair value of the total consideration transferred was $72,474. The acquisition date fair value of each class of consideration transferred is presented below:

Cash	$32,739
Common shares	39,735
	$72,474

The fair value of the shares of the Company's common stock issued was based on the quoted closing price of the Company's common stock as of the closing date of the acquisition. The estimated fair value of assets acquired and liabilities assumed at the acquisition date is shown below:

Cash	$3,180
Other receivables	305
Prepaid expenses and other	31
Property, plant and equipment	209
Intangible assets	68,100
Other non-current assets	23
Total assets acquired	71,848
Accounts payable	230
Accrued compensation and benefits	196
Other accrued liabilities	253
Deferred revenue	732
Deferred tax liabilities	612
Total liabilities assumed	2,023
Net assets acquired	69,825
Goodwill	2,649
Total consideration	$72,474

The acquired intangible assets primarily include in-process research and development, the fair value of which was determined using the multi-period excess earnings and with-and-without methods, which are both variations of the income approach that convert future cash flows to single discounted present value amounts. In August 2015, the Company re-evaluated the acquired in-process research and development and determined that it was placed in service as developed technology and began amortizing the original amount capitalized using a useful life of eighteen years. Goodwill, which is not expected to be deductible for tax purposes, represents the assembled workforce and anticipated buyer-specific synergies arising from the combination of the Company's and ActoGeniX's technologies.

The Company incurred $418 of acquisition-related costs, of which $381 is included in selling, general and administrative expenses in the accompanying consolidated statement of operations for the six months ended June 30, 2015.

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Unaudited Condensed Pro Forma Financial Information

The results of operations of the 2015 acquisitions discussed above are included in the consolidated statements of operations beginning on the day after their respective acquisition dates. The following unaudited condensed pro forma financial information for the three and six months ended June 30, 2015 is presented as if the acquisitions had been consummated on January 1, 2014:

	Three Months Ended June 30, 2015	Six Months Ended June 30, 2015
	Pro Forma	
Revenues	$45,083	$79,310
Loss before income taxes	(42,832)	(22,584)
Net loss	(43,723)	(23,176)
Net loss attributable to the noncontrolling interests	831	2,124
Net loss attributable to Intrexon	(42,892)	(21,052)

4. Investments in Joint Ventures

Intrexon T1D Partners

In March 2016, the Company and certain investors (the "T1D Investors"), including affiliates of Third Security, LLC ("Third Security"), entered into a Limited Liability Company Agreement which governs the affairs and conduct of business of Intrexon T1D Partners, LLC ("Intrexon T1D Partners"), a joint venture formed to utilize the Company's proprietary ActoBiotics platform to develop and commercialize products to treat type 1 diabetes. The Company also entered into an ECC with Intrexon T1D Partners which provides the exclusive rights to the Company's technology for use in the field, as a result of which the Company received a technology access fee of $10,000 while retaining a 50% membership interest in Intrexon T1D Partners. The T1D Investors made initial capital contributions, totaling $10,000 in the aggregate, in exchange for pro rata membership interests in Intrexon T1D Partners totaling 50%. Intrexon has committed to make capital contributions of up to $5,000, and the T1D Investors, as a group and pro rata in accordance with their respective membership interests in Intrexon T1D Partners, have committed to make additional capital contributions of up to $5,000, at the request of Intrexon T1D Partners' board of managers (the "Intrexon T1D Partners Board") and subject to certain limitations. Intrexon T1D Partners is governed by the Intrexon T1D Partners Board, which has five members. Two members of the Intrexon T1D Partners Board are designated by the Company and three members are designated by a majority of the T1D Investors. The Company and the T1D Investors have the right, but not the obligation, to make additional capital contributions above these limits when and if solicited by the Intrexon T1D Partners Board.

EnviroFlight

In February 2016, the Company entered into a series of transactions involving EnviroFlight, LLC ("Old EnviroFlight"), Darling Ingredients Inc. ("Darling") and a newly formed venture between the Company and Darling ("New EnviroFlight"). The Company determined that the series of integrated transactions to acquire substantially all of the assets of Old EnviroFlight for cash, common stock, and contingent consideration should be accounted for as a single transaction, which constituted a business, and considered New EnviroFlight to be the accounting acquirer pursuant to Accounting Standards Codification ("ASC") 805, Business Combinations. Consideration paid to Old EnviroFlight was $4,244 in cash, 136,340 shares of the Company's common stock valued at $4,401 and contingent consideration estimated at $3,660. Contemporaneously, all the assets acquired from Old EnviroFlight, with the exception of certain developed technology, and $3,000 of cash were contributed to New EnviroFlight in exchange for a non-controlling, 50% membership interest in New EnviroFlight. The Company's contributions to New EnviroFlight included an exclusive license to the developed technology that was retained by the Company. Darling received the remaining 50% membership interest in New EnviroFlight as consideration for terminating rights previously held in the developed technology with Old EnviroFlight. New EnviroFlight was formed to generate high-nutrition, low environmental impact animal and fish feed, as well as fertilizer products. The Company and Darling as members have

each agreed to make additional capital contributions of up to $5,000 to fund ongoing operations of New EnviroFlight. All of the employees of Old EnviroFlight became employees of New EnviroFlight.

The Company determined that its investment in New EnviroFlight should be accounted for using the equity method of accounting. The Company recorded an estimated fair value of $5,425 for its investment in New EnviroFlight and $9,880 for the retained developed technology intangible asset. The developed technology will be amortized over a period of twenty-one years.

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The contingent consideration liability payable to the members of Old EnviroFlight is considered a freestanding financial instrument in accordance with ASC 480, Distinguishing Liabilities and Equity, and will be recorded at fair value each reporting period. The value of this liability was estimated at $3,660 as of June 30, 2016. The members of Old EnviroFlight may receive contingent consideration of up to $5,500 of additional shares of the Company's common stock if certain regulatory and commercial milestones are met prior to February 2019.

The Company's investment in New EnviroFlight was $4,973 as of June 30, 2016 and is included in investments in affiliates in the accompanying consolidated balance sheet.

Intrexon Energy Partners II

In December 2015, the Company and certain investors (the "IEPII Investors"), including Harvest, entered into a Limited Liability Company Agreement which governs the affairs and conduct of business of Intrexon Energy Partners II, LLC ("Intrexon Energy Partners II"), a joint venture formed to utilize the Company's natural gas bioconversion platform for the production of 1,4-butanediol, an industrial chemical used to manufacture spandex, polyurethane, plastics, and polyester. The Company also entered into an ECC with Intrexon Energy Partners II which provides exclusive rights to the Company's technology for use in the field, as a result of which the Company received a technology access fee of $18,000 while retaining a 50% membership interest in Intrexon Energy Partners II. The IEPII Investors made initial capital contributions, totaling $18,000 in the aggregate, in exchange for pro rata membership interests in Intrexon Energy Partners II totaling 50%. In December 2015, the owners of Intrexon Energy Partners II made a capital contribution of $4,000, half of which was paid by the Company. Intrexon has committed to make additional capital contributions of up to $10,000, and the IEPII Investors, as a group and pro rata in accordance with their respective membership interests in Intrexon Energy Partners II, have committed to make additional capital contributions of up to $10,000, at the request of Intrexon Energy Partners II's board of managers (the "Intrexon Energy Partners II Board") and subject to certain limitations. Intrexon Energy Partners II is governed by the Intrexon Energy Partners II Board which has five members. One member of the Intrexon Energy Partners II Board is designated by the Company and four members are designated by a majority of the IEPII Investors. The Company and the IEPII Investors have the right, but not the obligation, to make additional capital contributions above the initial limits when and if solicited by the Intrexon Energy Partners II Board.

The Company's investment in Intrexon Energy Partners II was $1,777 and $2,000 as of June 30, 2016 and December 31, 2015, respectively, and is included in investments in affiliates in the accompanying consolidated balance sheets.

Intrexon Energy Partners

In March 2014, the Company and certain investors (the "IEP Investors"), including an affiliate of Third Security, entered into a Limited Liability Company Agreement which governs the affairs and conduct of business of Intrexon Energy Partners, LLC ("Intrexon Energy Partners"), a joint venture formed to optimize and scale-up the Company's gas-to-liquid bioconversion platform for the production of certain fuels and lubricants. The Company also entered into an ECC with Intrexon Energy Partners providing exclusive rights to the Company's technology for the use in bioconversion, as a result of which the Company received a technology access fee of $25,000 while retaining a 50% membership interest in Intrexon Energy Partners. The IEP Investors made initial capital contributions, totaling $25,000 in the aggregate, in exchange for pro rata membership interests in Intrexon Energy Partners totaling 50%. In addition, Intrexon has committed to make capital contributions of up to $25,000, and the IEP 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 $25,000, at the request of Intrexon Energy Partners' board of managers (the "Intrexon Energy Partners Board") and subject to certain limitations. As of June 30, 2016, the Company's remaining commitment was $14,378. Intrexon Energy Partners is governed by the Intrexon Energy Partners Board which has five members. Two members of the Intrexon Energy Partners Board are designated by the Company and three members are designated by a majority of the IEP Investors. The Company and the IEP Investors have the right, but not the obligation, to make additional capital contributions above the initial limits when and if solicited by the Intrexon Energy Partners Board.

The Company's investment in Intrexon Energy Partners was $(483) and $(1,270) as of June 30, 2016 and December 31, 2015, respectively, and is included in other accrued liabilities in the accompanying consolidated

balance sheets.

OvaXon

In December 2013, the Company and OvaScience, Inc. ("OvaScience"), a life sciences company focused on the discovery, development and commercialization of new treatments for infertility, entered into a Limited Liability Company Agreement ("OvaXon LLC Agreement") to form OvaXon, LLC ("OvaXon"), a joint venture to create new applications for improving human and animal health. Both the Company and OvaScience made an initial capital contribution of $1,500 in January 2014

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for a 50% membership interest in OvaXon. OvaXon is governed by the OvaXon board of managers ("OvaXon Board") which has four members, two each from the Company and OvaScience. In cases in which the OvaXon Board determines that additional capital contributions are necessary in order for OvaXon to conduct business and comply with its obligations, each of the Company and OvaScience has the right, but not the obligation, to make additional capital contributions to OvaXon subject to the OvaXon LLC Agreement.

The Company's investment in OvaXon was $(201) and $(144) as of June 30, 2016 and December 31, 2015, respectively, and is included in other accrued liabilities in the accompanying consolidated balance sheets.

S & I Ophthalmic

In September 2013, the Company entered into a Limited Liability Company Agreement ("Sun LLC Agreement") with Caraco Pharmaceutical Laboratories, Ltd. ("Sun Pharmaceutical Subsidiary"), an indirect subsidiary of Sun Pharmaceutical Industries Ltd. ("Sun Pharmaceutical"), an international specialty pharmaceutical company focused on chronic diseases, to form S & I Ophthalmic, LLC ("S & I Ophthalmic"). The Sun LLC Agreement governs the affairs and the conduct of business of S & I Ophthalmic. 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. S & I Ophthalmic is governed by a board of managers ("S & I Ophthalmic Board") which has four members, two each from the Company and Sun Pharmaceutical Subsidiary. In cases in which the S & I Ophthalmic Board determines that additional capital contributions are necessary in order for S & I Ophthalmic to conduct business and comply with its obligations, each of the Company and Sun Pharmaceutical Subsidiary has 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 Ophthalmic Board. As of June 30, 2016, both the Company and Sun Pharmaceutical Subsidiary have made subsequent capital contributions of $5,000.

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.

The Company's investment in S & I Ophthalmic was $4,794 and $6,379 as of June 30, 2016 and December 31, 2015, respectively, and is included in investments in affiliates in the accompanying consolidated balance sheets.

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5. Collaboration and Licensing Revenue

The Company generates revenue through contractual agreements with collaborators (known as exclusive channel collaborations, "ECC" or "ECCs") and licensing agreements whereby the collaborators or the licensees 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. Upfront and milestone payments are typically deferred and 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 in which the services are performed and collection is reasonably assured. The following tables summarize the amounts recorded as revenue in the consolidated statements of operations for each significant collaboration or licensing agreement for the three and six months ended June 30, 2016 and 2015.

	Three Months Ended June 30, 2016		
	Revenue Recognized From		
	Upfront and Milestone Payments	Research and Development Services	Total
ZIOPHARM Oncology, Inc.	$922	$ 6,048	$6,970
Oragenics, Inc.	261	246	507
Fibrocell Science, Inc.	605	789	1,394
Genopaver, LLC	68	1,569	1,637
S & I Ophthalmic, LLC	—	2,358	2,358
OvaXon, LLC	—	808	808
Intrexon Energy Partners, LLC	625	3,587	4,212
Persea Bio, LLC	125	206	331
Ares Trading S.A.	1,597	621	2,218
Thrive Agrobiotics, Inc.	46	404	450
Intrexon Energy Partners II, LLC	500	394	894
Exotech Bio, Inc.	139	—	139
Relieve Genetics, Inc.	120	230	350
Intrexon T1D Partners, LLC	278	32	310
Other	2,769	2,134	4,903
Total	$8,055	$ 19,426	$27,481

	Three Months Ended June 30, 2015		
	Revenue Recognized From		
	Upfront and Milestone Payments	Research and Development Services	Total
ZIOPHARM Oncology, Inc.	$644	$ 4,606	$5,250
Oragenics, Inc.	307	68	375
Fibrocell Science, Inc.	448	1,470	1,918
Genopaver, LLC	68	867	935
S & I Ophthalmic, LLC	—	890	890
OvaXon, LLC	—	662	662
Intrexon Energy Partners, LLC	625	2,731	3,356
Persea Bio, LLC	125	141	266
Ares Trading S.A.	739	—	739

Other	747	2,043	2,790
Total	$3,703	$ 13,478	$17,181

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	Six Months Ended June 30, 2016		
	Revenue Recognized From		
	Upfront and Milestone Payments	Research and Development Services	Total
ZIOPHARM Oncology, Inc.	$1,844	$ 12,107	$13,951
Oragenics, Inc.	524	789	1,313
Fibrocell Science, Inc.	1,210	2,041	3,251
Genopaver, LLC	137	3,078	3,215
S & I Ophthalmic, LLC	—	3,544	3,544
OvaXon, LLC	—	1,502	1,502
Intrexon Energy Partners, LLC	1,250	6,950	8,200
Persea Bio, LLC	250	405	655
Ares Trading S.A.	3,194	1,429	4,623
Thrive Agrobiotics, Inc.	92	792	884
Intrexon Energy Partners II, LLC	1,000	444	1,444
Exotech Bio, Inc.	139	—	139
Relieve Genetics, Inc.	120	230	350
Intrexon T1D Partners, LLC	278	32	310
Other	3,789	4,384	8,173
Total	$13,827	$ 37,727	$51,554

	Six Months Ended June 30, 2015		
	Revenue Recognized From		
	Upfront and Milestone Payments	Research and Development Services	Total
ZIOPHARM Oncology, Inc.	$1,288	$ 7,763	$9,051
Oragenics, Inc.	569	76	645
Fibrocell Science, Inc.	896	3,183	4,079
Genopaver, LLC	137	1,467	1,604
S & I Ophthalmic, LLC	—	1,645	1,645
OvaXon, LLC	—	1,306	1,306
Intrexon Energy Partners, LLC	1,250	4,916	6,166
Persea Bio, LLC	250	256	506
Ares Trading S.A.	739	—	739
Other	1,605	4,618	6,223
Total	$6,734	$ 25,230	$31,964

Except for the agreements discussed below, there have been no significant changes to arrangements with our collaborators and licensees in the six months ended June 30, 2016. See Note 5 in the Company's Annual Report on Form 10-K for the year ended December 31, 2015 for additional details of the Company's existing collaboration and licensing agreements.

Exotech Bio Collaboration

In March 2016, the Company entered into an ECC with Exotech Bio, Inc. ("Exotech Bio"), an affiliate of Harvest and a related party. Exotech Bio was formed for the purpose of entering into the ECC and developing and commercializing products using exosomes carrying a RNA payload designed to kill, suppress, or render

immune-visible a cancer cell. Upon execution of the ECC, the Company received a technology access fee in the form of equity in Exotech Bio valued at $5,000 as upfront consideration. The Company is also entitled to up to $52,500 of potential payments for substantive and non-substantive development and commercial milestones for each product developed under the ECC. The Company receives reimbursement payments for research and development services provided pursuant to the ECC. Exotech Bio will pay the Company royalties as a percentage in the lower double-digits on the quarterly net sales of products developed under the ECC, as defined in the agreement. Exotech Bio is responsible for the development and commercialization of the product candidates. The term of the ECC commenced in March 2016 and continues until terminated pursuant to the ECC agreement. The ECC may be terminated

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by either party in the event of certain material breaches defined in the agreement and may be terminated voluntarily by Exotech Bio upon 90 days written notice to the Company.

Relieve Genetics Collaboration

In March 2016, the Company entered into an ECC with Relieve Genetics, Inc. ("Relieve Genetics"), an affiliate of Harvest and a related party. Relieve Genetics was formed for the purpose of entering into the ECC and developing and commercializing products using a viral vector expressing interleukin-10 for the treatment of chronic neuropathic pain resultant from cancer in humans. Upon execution of the ECC, the Company received a technology access fee in the form of equity in Relieve Genetics valued at $4,333 as upfront consideration. The Company is also entitled to up to $52,500 of potential payments for substantive and non-substantive development and commercial milestones for each product developed under the ECC. The Company receives reimbursement payments for research and development services provided pursuant to the ECC. Relieve Genetics will pay the Company royalties as a percentage in the lower double-digits on the quarterly net sales of products developed under the ECC, as defined in the agreement. Relieve Genetics is responsible for the development and commercialization of the product candidates. The term of the ECC commenced in March 2016 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 Relieve Genetics upon 90 days written notice to the Company.

Intrexon T1D Partners Collaboration

In March 2016, the Company entered into an ECC with Intrexon T1D Partners, a related party. Pursuant to the ECC, Intrexon T1D Partners received an exclusive license to the Company's technology platform to develop and commercialize products to treat type 1 diabetes. Upon execution of the ECC, the Company received a technology access fee of $10,000 and is entitled to reimbursement of research and development services as provided for in the ECC agreement. The term of the ECC commenced in March 2016 and continues until March 2036; termination prior to that date may be initiated (i) by either party in the event of certain material breaches defined in the agreement or (ii) may be terminated Intrexon T1D Partners upon 90 days written notice to the Company.

AD Skincare Collaboration

In June 2016, the Company entered into an ECC with AD Skincare, Inc. ("AD Skincare"), an affiliate of Harvest and a related party. AD Skincare was formed for the purpose of entering into the ECC and developing an advanced topical delivery system to improve the efficacy of biologically active ingredients aimed at improving signs of aging human skin. Upon execution of the ECC, the Company received a technology access fee in the form of equity in AD Skincare valued at $4,333 as upfront consideration. The Company is also entitled to up to $2,000 of potential payments for substantive and non-substantive development milestones for each product developed under the ECC, as well as up to $17,000 in one-time commercial milestones. The Company receives reimbursement payments for research and development services provided pursuant to the ECC. AD Skincare will pay the Company royalties as a percentage in the low double-digits on the quarterly net sales of products developed under the ECC, as defined in the agreement. AD Skincare is responsible for the development and commercialization of the product candidates. The term of the ECC commenced in June 2016 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 AD Skincare upon 90 days written notice to the Company.

ZIOPHARM Collaborations

In June 2016, the Company amended each of its two existing collaboration agreements with ZIOPHARM and as a result the rate of the royalty which the Company is entitled to receive on certain products commercialized pursuant to the agreements was reduced from 50% to 20%. As consideration for execution of the amendments, ZIOPHARM issued the Company 100,000 shares of ZIOPHARM's Series 1 Preferred Stock valued at $120,000. The Company allocated the consideration received to each ECC based on the cumulative value of upfront and milestone payments previously received pursuant to that ECC. Because the Company has remaining performance obligations under each of the ZIOPHARM ECCs, the Company recorded the initial fair value received as deferred revenue and will recognize this amount straight-line over the remaining performance period for each ZIOPHARM ECC. No other financially significant terms of the ZIOPHARM ECCs were changed as a result of the amendments. See Note 7 for additional discussion of the terms of the preferred stock and the accounting treatment.

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Deferred Revenue

Deferred revenue primarily consists of consideration received for upfront and milestone payments in connection with the Company's collaborations and licensing agreements, prepayments for research and development services performed for collaborators and licensees, and prepayments for product and service revenues. Deferred revenue consists of the following:

	June 30, 2016	December 31, 2015
Upfront and milestone payments	$310,937	$ 181,331
Prepaid research and development services	8,122	10,938
Prepaid product and service revenues	5,471	4,759
Other	709	701
Total	$325,239	$ 197,729
Current portion of deferred revenue	$53,863	$ 35,366
Long-term portion of deferred revenue	271,376	162,363
Total	$325,239	$ 197,729

The following table summarizes the remaining balance of deferred revenue associated with upfront and milestone payments for each significant collaboration and licensing agreement:

	June 30, 2016	December 31, 2015
ZIOPHARM Oncology, Inc.	$148,494	$ 30,338
Oragenics, Inc.	8,289	8,813
Fibrocell Science, Inc.	20,235	21,445
Genopaver, LLC	2,113	2,250
Intrexon Energy Partners, LLC	19,375	20,625
Persea Bio, LLC	4,250	4,500
Ares Trading S.A.	50,373	53,567
Thrive Agrobiotics, Inc.	1,529	1,621
Intrexon Energy Partners II, LLC	16,833	17,833
Exotech Bio, Inc.	4,861	—
Relieve Genetics, Inc.	4,213	—
Intrexon T1D Partners, LLC	9,564	—
AD Skincare, Inc.	4,333	—
Other	16,475	20,339
Total	$310,937	$ 181,331

6. 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 June 30, 2016:

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Aggregate Fair Value
U.S. government debt securities	$165,638	$ 220	$ —	$165,858
Certificates of deposit	272	—	—	272
Total	$165,910	$ 220	$ —	$166,130

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The following table summarizes the amortized cost, gross unrealized gains and losses and fair value of available-for-sale investments as of December 31, 2015:

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Aggregate Fair Value
U.S. government debt securities	$208,223	$ 21	$ (540)	$207,704
Certificates of deposit	271	—	—	271
Total	$208,494	$ 21	$ (540)	$207,975

For more information on the Company's method for determining the fair value of its assets, see Note 2 – "Fair Value of Financial Instruments" in the Company's Annual Report on Form 10-K for the year ended December 31, 2015.

The estimated fair value of available-for-sale investments classified by their contractual maturities as of June 30, 2016 was:

Due within one year	$115,667
After one year through two years	50,463
Total	$166,130

Changes in market interest rates and bond yields cause certain investments to fall below their cost basis, resulting in unrealized losses on investments. The unrealized losses of the Company's investments were primarily a 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 June 30, 2016 and December 31, 2015, 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.

7. Investment in Preferred Stock

In June 2016, the Company received 100,000 shares of ZIOPHARM's Series 1 Preferred Stock (the "Preferred Shares"), with a per share stated value of $1,200, as consideration for amending their two previously existing ECC agreements (Note 5). A summary of the terms of the Preferred Shares are as follows.

Conversion. The Preferred Shares shall automatically convert into shares of ZIOPHARM common stock upon the date the first approval in the United States of (i) a ZIOPHARM product, as defined in and developed under one of the ECC agreements, or (ii) a product, as defined and developed under the License and Collaboration Agreement with Ares Trading S.A., a subsidiary of the biopharmaceutical business of Merck KGaA, and ZIOPHARM, is publicly announced (the "Conversion Event Date"). The Preferred Shares shall convert into a number of shares of ZIOPHARM common stock equal to the stated value of such Preferred Share, divided by the greater of: (i) the volume weighted average closing price of ZIOPHARM's common stock over the twenty trading days ending on the Conversion Event Date or (ii) $1.00. The number of converted shares is subject to certain limitations defined in the amended and restated Certificate of Designation, Preferences, and Rights of Series 1 Preferred Stock (the "A&R Certificate of Designation").

Dividend Rights. The Company shall receive a monthly dividend, payable in additional Preferred Shares, equal to $12.00 per Preferred Share held per month divided by the stated value of the Preferred Shares, which is referred to as the PIK Dividend. For any Preferred Shares that are not converted on the Conversion Event Date, the rate of PIK Dividend on these unconverted Preferred Shares will automatically increase from $12.00 to $24.00 per Preferred Share per month.

Voting Rights. The Preferred Shares do not have any voting rights except for certain protective voting rights defined in the A&R Certificate of Designation.

Liquidation Rights. In the event of any voluntary or involuntary liquidation, dissolution or winding up of ZIOPHARM or a deemed liquidation event, as defined in the A&R Certificate of Designation, including a change of control or the sale, lease transfer or exclusive license of all or substantially all of ZIOPHARM's assets, the holders of the Preferred Shares shall be entitled to receive a portion of all funds to be distributed in proportion to the holders' proportionate

share of ZIOPHARM's

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common stock on an as-converted to common stock basis (the "Series 1 Liquidation Amount"). For purposes of calculating the Series 1 Liquidation Amount, if such liquidation event occurs prior to the Conversion Event Date, each Preferred Share shall be deemed to be convertible into the number of shares of ZIOPHARM's common stock equal to (i) the stated value of each Preferred Share, divided by (ii) the volume weighted average price of ZIOPHARM's common stock for the twenty day period ending on the date of the public announcement of the liquidation event. In addition, ZIOPHARM may elect to redeem the Preferred Shares in connection with or following a deemed liquidation event at a price per share equal to the Series 1 Liquidation Amount.

The Company elected the fair value option to account for its investment in ZIOPHARM preferred stock (the "investment in preferred stock"). The investment in preferred stock is categorized as Level 3 as there are significant unobservable inputs and the Preferred Shares are not traded on a public exchange. The fair value of the investment in preferred stock as of June 30, 2016 was estimated using a probability-weighted expected return ("PWERM") model. The key inputs used in the PWERM model were (i) estimating the future returns for conversion of the Preferred Shares for both product approval and a change in control of ZIOPHARM (the "conversion events") using market data of the change in value for guideline companies as a result of these conversion events; (ii) estimating the expected date and likelihood of each conversion event; and (iii) discounting these estimated future returns using a discount rate for the Preferred Shares considering industry debt issuances originated by public funds and venture capital rates of return. The fair value of the Company's investment in preferred stock is $120,000 as of June 30, 2016. A significant change in unobservable inputs discussed above could result in a significant impact to the fair value of the Company's investment in preferred stock.

8. 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 June 30, 2016:

	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	June 30, 2016
Assets				
U.S. government debt securities	$—	$ 165,858	$ —	$165,858
Equity securities	31,539	7,481	—	39,020
Preferred stock	—	—	120,000	120,000
Other	—	308	—	308
Total	$31,539	$ 173,647	$ 120,000	$325,186

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, 2015:

	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	December 31, 2015
Assets				
U.S. government debt securities	$—	$ 207,704	$ —	$ 207,704
Equity securities	65,850	17,803	—	83,653
Other	—	405	—	405
Total	$65,850	$ 225,912	$ —	$ 291,762

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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 quoted 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. The method used to estimate the fair value of the Level 3 asset is discussed in Note 7.

There were no transfers between levels of the fair value hierarchy in the six months ended June 30, 2016.

The carrying values of the Company's long term debt approximates fair value due to the length of time to maturity and/or the existence of interest rates that approximate prevailing market rates. Significant financial liabilities measured on a recurring basis were $3,660 at June 30, 2016. The Company accounted for the contingent consideration liability to the members of Old EnviroFlight by recording its fair value as a liability on the date of the asset acquisition (Note 4). At the date of the acquisition, the regulatory and commercial milestones were valued using a probability-weighted discounted cash flow model using discount rates reflecting the time value of money and additional risk inherent in meeting the milestones. These fair value measurements were based on significant inputs not observable in the market and thus represented a Level 3 measurement. The contingent consideration liability is remeasured to fair value at each reporting date until the contingency is resolved, and those changes in fair value are recognized in earnings. There were no significant changes to the fair value of this liability since the acquisition date through June 30, 2016. Financial liabilities measured on a recurring basis were not significant at December 31, 2015.

9. Inventory

Inventory consists of the following:

	June 30, 2016	December 31, 2015
Supplies, semen and embryos	$1,410	$ 1,402
Work in process	6,240	6,290
Livestock	16,062	16,907
Feed	780	1,964
Total inventory	$24,492	$ 26,563

10. Property, Plant and Equipment, Net

Property, plant and equipment consist of the following:

	June 30, 2016	December 31, 2015
Land and land improvements	$9,682	$ 9,119
Buildings and building improvements	7,526	7,520
Furniture and fixtures	2,352	1,283
Equipment	40,312	36,016
Leasehold improvements	7,630	6,888
Computer hardware and software	6,334	5,960
Construction and other assets in progress	2,440	2,193
	76,276	68,979
Less: Accumulated depreciation and amortization	(29,617)	(26,240)
Property, plant and equipment, net	$46,659	$ 42,739

Depreciation expense was $2,304 and $1,828 for the three months ended June 30, 2016 and 2015, respectively, and $4,437 and $3,781 for the six months ended June 30, 2016 and 2015, respectively.

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11. Goodwill and Intangible Assets, Net

The changes in the carrying amount of goodwill for the six months ended June 30, 2016 are as follows:

Balance at December 31, 2015	$165,169
Foreign currency translation adjustments	(3,912)
Balance at June 30, 2016	$161,257

No goodwill or accumulated impairment losses existed as of June 30, 2016 and December 31, 2015.

Intangible assets consist of the following at June 30, 2016:

	Weighted Average Useful Life (Years)	Gross Carrying Amount	Accumulated Amortization	Net
Patents, related technologies and know-how	15.3	$170,046	$ (23,654)	$146,392
Customer relationships	6.5	10,700	(3,706)	6,994
Trademarks	9.3	6,800	(1,405)	5,395
Covenant not to compete	2.0	390	(260)	130
In-process research and development		85,403	—	85,403
Total		$273,339	$ (29,025)	$244,314

Intangible assets consist of the following at December 31, 2015:

	Gross Carrying Amount	Accumulated Amortization	Net
Patents, related technologies and know-how	$157,411	$ (17,775)	$139,636
Customer relationships	10,700	(2,739)	7,961
Trademarks	6,800	(1,018)	5,782
Covenant not to compete	384	(160)	224
In-process research and development	93,932	—	93,932
Total	$269,227	$ (21,692)	$247,535

The balance of in-process research and development as of June 30, 2016 primarily includes the in-process research and development acquired in the Company's Oxitec acquisition and amortization will begin once certain regulatory approvals have been obtained.

Amortization expense was $3,722 and $1,981 for the three months ended June 30, 2016 and 2015, respectively, and $7,237 and $3,577 for the six months ended June 30, 2016 and 2015, respectively.

12. Lines of Credit and Long Term Debt

Lines of Credit

Trans Ova has a $6,000 revolving line of credit with First National Bank of Omaha which matures on May 1, 2017. The line of credit bears interest at the greater of 2.95% above the London Interbank Offered Rate or 3.00% and, and the actual rate was 3.41% at June 30, 2016. As of June 30, 2016, there were no amounts outstanding. The amount available under the line of credit is based on eligible accounts receivable and inventory up to the maximum principal amount. The line of credit is collateralized by certain of Trans Ova's assets and contains certain restricted covenants that include maintaining minimum tangible net worth, maximum allowable annual capital expenditures and working capital. Trans Ova was in compliance with these covenants as of June 30, 2016.

Exemplar has a $700 revolving line of credit with American State Bank which matures on November 1, 2016. The line of credit bears interest at 4.50% per annum. As of June 30, 2016, there was an outstanding balance of $461.

Long Term Debt

Long term debt consists of the following:

	June 30, 2016	December 31, 2015
Notes payable	$ 5,884	$ 6,477
Royalty-based financing	1,985	1,807
Other	152	244
Long term debt	8,021	8,528
Less current portion	491	930
Long term debt, less current portion	$ 7,530	$ 7,598

Trans Ova has a note payable to American State Bank which matures in April 2033 and has an outstanding principal balance of $5,428 as of June 30, 2016. Trans Ova pays monthly installments of $39, which includes interest at 3.95%. The note payable is collateralized by certain of Trans Ova's real estate and non-real estate assets.

Exemplar has notes payable with outstanding principal balances totaling $456 as of June 30, 2016. Exemplar pays monthly installments ranging from $1 to $4 with interest rates ranging from 0% to 3.00%. These notes mature from September 2018 to May 2020 and are collateralized by certain of Exemplar's real estate or letters of credit of certain of its members.

AquaBounty has a royalty-based financing grant from the Atlantic Canada Opportunities Agency ("ACOA"), a Canadian government agency, to provide funding of a research and development project. The total amount available under the award was $2,216, which AquaBounty claimed 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 additional regulatory considerations, the timing of repayment is uncertain. As of the acquisition date in March 2013, AquaBounty had claimed $1,952 of the available funds and this amount was recorded at its acquisition date fair value of $1,107. 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, AquaBounty has claimed the remaining balance available under the grant, resulting in total long term debt of $1,985 as of June 30, 2016.

Future maturities of long term debt are as follows:

2016	$298
2017	385
2018	529
2019	343
2020	313
2021	312
Thereafter	3,856
Total	$6,036

The AquaBounty royalty-based financing grant is not included in the table above due to the uncertainty of the timing of repayment.

13. Income Taxes

Tax provisions for interim periods are calculated using an estimate of actual taxable income or loss for the respective period, rather than estimating the Company's annual effective income tax rate, as the Company is currently unable to reliably estimate its income for the full year. For the three and six months ended June 30, 2016, the Company had U.S. taxable loss of approximately $7,780 and $17,680, respectively, for which no income tax benefit was recognized. For the three and six months ended June 30, 2016, the Company recognized $120 and $213 of current foreign income tax benefit, respectively. For the three and six months ended June 30, 2015, the Company had U.S. taxable income of approximately $65,400 and $38,800, respectively, and $777 income tax expense was recognized. For the three and six months ended June 30, 2016, the Company

recorded deferred tax benefit of $471 and $2,659, respectively. There was $157 and $952 of deferred tax expense for the three and six months ended June 30, 2015, respectively. The Company's net deferred tax assets, excluding certain deferred tax liabilities totaling $18,680, are offset by a valuation allowance due to the Company's history of net losses combined with an inability to confirm recovery of the tax benefits of the Company's losses and other net deferred tax assets. 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.

At June 30, 2016, the Company has loss carryforwards for U.S. federal income tax purposes of approximately $266,400 available to offset future taxable income and federal and state research and development tax credits of approximately $6,770, 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, approximately $53,400 relates to benefits from stock compensation deductions that will be recorded as a component of paid-in capital when realized. The Company's direct foreign subsidiaries have foreign loss carryforwards of approximately $117,900, most of which do not expire.

14. Shareholders' Equity

Dividend to Shareholders

In June 2015, the Company distributed to its shareholders 17,830,305 shares of ZIOPHARM common stock, representing all of the equity interests of ZIOPHARM held by the Company at the time of the distribution and resulting in a realized gain of $81,401. The distribution constituted a dividend to shareholders of record as of June 4, 2015. In connection with the distribution, pursuant to the terms of the Company's equity incentive plans, the conversion terms of all outstanding options for shares of the Company's common stock as of June 4, 2015 were adjusted to reflect the value of the distribution with respect to shares of the Company's common stock by decreasing the exercise prices and increasing the number of shares. This adjustment resulted in 312,795 additional shares at a weighted average exercise price of $25.40.

Components of Accumulated Other Comprehensive Loss

The components of accumulated other comprehensive loss are as follows:

	June 30, 2016	December 31, 2015
Unrealized gain (loss) on investments	$220	$ (519)
Foreign currency translation adjustments	(21,871)	(12,233)
Total accumulated other comprehensive loss	$(21,651)	$ (12,752)

15. Share-Based Payments

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 costs included in the consolidated statements of operations are presented below:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2016	2015	2016	2015
Cost of products	$20	$21	$40	$55
Cost of services	70	105	138	203
Research and development	2,178	2,138	4,743	3,907
Selling, general and administrative	4,383	5,616	14,918	13,974
Total	$6,651	$7,880	$19,839	$18,139

Intrexon Stock Option Plans

In April 2008, Intrexon adopted the 2008 Equity Incentive Plan (the "2008 Plan") for employees and nonemployees pursuant to which Intrexon's Board of Directors may grant share based awards, including stock options, to officers, key employees and nonemployees. Upon the effectiveness of the 2013 Omnibus Incentive Plan (the "2013 Plan"), no new awards may be granted under the 2008 Plan. As of June 30, 2016, there were 597,491 stock options outstanding under the 2008 Plan.

Intrexon adopted the 2013 Plan for employees and nonemployees pursuant to which Intrexon'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 Company's initial public offering in August 2013, and as of June 30, 2016, there were 16,000,000 shares authorized for issuance under the 2013 Plan, of which 10,714,034 stock options were outstanding and 3,936,628 shares were available for grant.

Stock option activity under Intrexon's award plans was as follows:

	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (Years)
Balances at December 31, 2015	11,043,528	$ 32.66	8.49
Granted	3,137,860	30.66	
Exercised	(1,113,327)	(15.87)	
Forfeited	(1,752,627)	(45.24)	
Expired	(3,909)	(30.35)	
Balances at June 30, 2016	11,311,525	31.81	8.56
Exercisable at June 30, 2016	2,754,250	25.36	7.15
Vested and Expected to Vest at June 30, 2016(1)	9,441,799	31.39	8.43

(1) The number of stock options expected to vest takes into account an estimate of expected forfeitures.

Total unrecognized compensation costs related to unvested awards at June 30, 2016 and December 31, 2015 were $106,977 and $113,655, respectively, and are expected to be recognized over a weighted-average period of approximately three years.

Intrexon currently uses authorized and unissued shares to satisfy share award exercises.

In October 2015, the Compensation Committee and the independent members of Intrexon's Board of Directors approved a compensation arrangement whereby the Company's Chief Executive Officer ("CEO") would receive a monthly salary. Previously, the CEO did not receive compensation for his services as an employee of the Company other than through his participation in the Company's Annual Executive Incentive Plan which became effective January 1, 2015. Pursuant to the compensation agreement, the CEO receives a base salary of $200 per month payable in fully vested shares of Intrexon common stock with such shares subject to a three-year lock-up on resale. The monthly number of shares of common stock is calculated based on the closing price on the last trading day of each month and the shares are issued pursuant to the terms of a Restricted Stock Unit Agreement (the "RSU Agreement") which was executed between Intrexon and the CEO pursuant to the terms of the 2013 Plan. The RSU Agreement became effective in November 2015, has an initial term of 12 months, and is renewable annually at the discretion of Intrexon's Board of Directors. The fair value of the shares issued as compensation for services is included in selling, general and administrative expenses in the Company's consolidated statements of operations and totaled $463 and $934 for the three and six months ended June 30, 2016, respectively.

Other Plans

As of June 30, 2016, there were 5,607,000 options, which are exercisable into shares of AquaBounty common stock, outstanding under the AquaBounty 2006 Equity Incentive Plan ("AquaBounty 2006 Plan") at a weighted average exercise price of $0.26 per share of which 5,231,040 were exercisable. As of December 31, 2015, there were 5,382,000 options outstanding under the AquaBounty 2006 Plan at a weighted average exercise price of $0.26 per

share of which 4,320,333 were exercisable.

In March 2016, AquaBounty's Board of Directors adopted the AquaBounty 2016 Equity Incentive Plan ("AquaBounty 2016 Plan") to replace the AquaBounty 2006 Plan. The AquaBounty 2016 Plan provides for the issuance of incentive stock options,

non-qualified stock options and awards of restricted and direct stock purchases to directors, officers, employees and consultants of AquaBounty. The AquaBounty 2016 Plan was approved by AquaBounty's shareholders at its annual meeting in April 2016. Upon the effectiveness of the AquaBounty 2016 Plan, no new awards may be granted under the AquaBounty 2006 Plan. As of June 30, 2016, there were no options outstanding under the AquaBounty 2016 Plan.

16. License Agreement

In January 2015, the Company and ZIOPHARM jointly entered into a license agreement with the University of Texas System Board of Regents on behalf of the University of Texas MD Anderson Cancer Center ("MD Anderson") whereby the Company received an exclusive license to certain research and development technologies owned and licensed by MD Anderson, including technologies relating to novel chimeric antigen receptor (CAR) T-cell therapies, as well as co-licenses and non-exclusive licenses to certain other related technologies. ZIOPHARM received access to these technologies pursuant to the terms of the Company's ECC with ZIOPHARM. The Company issued 2,100,085 shares of its common stock valued at $59,579 to MD Anderson as consideration, which is included in research and development expenses in the accompanying consolidated statement of operations for the six months ended June 30, 2015. Subject to certain exceptions, the license agreement expires on the last to occur of (i) the expiration of all patents licensed thereunder, or (ii) the twentieth anniversary of the date of the license agreement.

In connection with the license agreement, the Company, ZIOPHARM, and MD Anderson entered into a research and development agreement which governs certain operational activities between the parties and pursuant to which ZIOPHARM provides funding for certain research and development activities of MD Anderson for a period of three years, in an amount between $15,000 and $20,000 per year. The Company and ZIOPHARM reimburse MD Anderson for out of pocket expenses for maintaining patents covering the licensed technologies.

17. Commitments and Contingencies

Operating Leases

The Company leases certain facilities and equipment under noncancelable operating leases. The equipment leases are renewable at the option of the Company. At June 30, 2016, future minimum lease payments under operating leases having initial or remaining noncancelable lease terms in excess of one year are as follows:

2016	$ 1,966
2017	4,401
2018	2,834
2019	2,595
2020	2,647
2021	1,789
Total	$ 16,232

Rent expense, including other facility expenses, was $2,302 and $2,247 for the three months ended June 30, 2016 and 2015, respectively, and $4,334 and $4,381 for the six months ended June 30, 2016 and 2015, respectively.

The Company maintains subleases for certain of its facilities. Rental income under sublease agreements was $335 and $394 for the three months ended June 30, 2016 and 2015, respectively, and $670 and $819 for the six months ended June 30, 2016 and 2015, respectively. Future rental income is expected to be $17 for 2016 and $36 for 2017.

Contingencies

In March 2012, Trans Ova was named as a defendant in a licensing and patent infringement suit brought by XY, LLC alleging that certain of Trans Ova's activities breach a licensing agreement and infringe on patents that XY, LLC allegedly owns. Trans Ova filed a number of counterclaims in the case. The matter proceeded to a jury trial in January 2016, and in February 2016, the jury determined that XY, LLC and Trans Ova had each breached the licensing agreement and that Trans Ova had infringed the intellectual property of XY, LLC. In April 2016, the court issued its order, entering a jury award of damages to Trans Ova in the amount of $528 and a jury award of damages to XY, LLC in the amount of $6,066, each with prejudgment interest. The order provides for the continuation of Trans Ova's license to XY, LLC's technology, subject to an ongoing royalty for Trans Ova which is subject to a post-judgment motion and potential appeals therefrom. Since the inception of the license, Trans Ova has

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remitted payments to XY, LLC pursuant to the terms of the original license agreement and has recorded these payments in cost of services in the consolidated statements of operations for the respective periods. For the period from inception of the agreement through the court's order, aggregate royalty and license payments were $3,170, of which $2,759 had not yet been deposited by XY, LLC. For the six months ended June 30, 2016, the Company recorded litigation settlement expense of $4,228, which is included in selling, general and administrative expenses on the accompanying consolidated statement of operations and represents the excess of the net damages awarded to XY, LLC, including prejudgment interest, over the liability previously recorded by Trans Ova for uncashed checks previously remitted to XY, LLC. The Company and Trans Ova believe they have compelling grounds to overturn the adverse rulings of the order through appellate actions and that, as a result, the amount of damages could be reduced or eliminated. No assurances can be given, however, that such matters will ultimately be ruled in Trans Ova's favor, and XY, LLC may also elect to appeal aspects of the ruling that were in Trans Ova's favor. Moreover, Trans Ova and the Company could elect to enter into a settlement agreement in order to avoid the further costs and uncertainties of litigation, to modify the license to XY, LLC's technologies, or to recover monetary damages related to Trans Ova's antitrust counterclaims.

In May 2016, two purported shareholder class action lawsuits, captioned Hoffman v. Intrexon Corporation et al. and Gibrall v. Intrexon Corporation et al., were filed in the U.S. District Court for the Northern District of California on behalf of purchasers of Intrexon's common stock between May 12, 2015 and April 20, 2016 (the "Class Period"). The complaints name as defendants Intrexon and certain of its current officers (the "Defendants"). The complaints allege, among other things, that, in violation of the federal securities laws, the Defendants made materially false and/or misleading statements in the Company's periodic reports on Forms 10-K and 10-Q filed during the Class Period with respect to the Company's business, operations and prospects. The basis for the plaintiffs' claims derived from a report published in April 2016 on the Seeking Alpha financial blog. The plaintiffs seek compensatory damages, interest and an award of reasonable attorneys' fees and costs. In July 2016, the court hearing the matters entered an order consolidating the lawsuits and appointing a lead plaintiff. The Company intends to defend the lawsuit vigorously; however, there can be no assurance regarding the ultimate outcome of these lawsuits.

The Company may become subject to other 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 June 30, 2016 and December 31, 2015, 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.

18. Related Party Transactions

Third Security and Affiliates

The Company's CEO and Chairman of the Board of Directors of the Company is also the manager of Third Security. In November 2015, Intrexon's Board of Directors approved the execution of a Services Agreement ("Services Agreement") with Third Security pursuant to which Third Security provides the Company with certain professional, legal, financial, administrative, and other support services necessary to support the Company and its CEO. As consideration for providing these services, Third Security is entitled to a fee of $800 per month to be paid in the form of fully vested shares of the Company's common stock. The number of shares of common stock is calculated based on the closing price of the Company's common stock on the 15th day of each month. The payments made by the Company under the Services Agreement constitute, in the aggregate, an award under the 2013 Plan and are subject to the terms of the 2013 Plan (Note 15). The Services Agreement has a term of one year, can be terminated by the Company at any time, and may be extended only by agreement of the parties, including approval of a majority of the independent members of Intrexon's Board of Directors. For the three and six months ended June 30, 2016, the Company issued 85,300 shares and 165,170 shares, respectively, with values of $2,143 and $4,410, respectively, to Third Security as payment for services pursuant to the Services Agreement. In addition to the foregoing Services Agreement, the Company reimburses Third Security for certain out-of-pocket expenses incurred on the Company's behalf and the total expenses incurred by the Company under this arrangement was $99 and $111 for the three months ended June 30, 2016 and 2015, respectively, and $145 and $152 for the six months ended June 30, 2016 and 2015,

respectively.

See also Note 15 regarding compensation arrangements between the Company and its CEO.

Transactions with ECC Parties

In addition to entities controlled by Third Security, any entity in which the Company holds equity securities, including securities received as upfront or milestone consideration, and which also are party to a collaboration with the Company are considered to be related parties.

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In conjunction with the ECC with Oragenics, 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. In connection with the Company's third ECC with Oragenics ("Oragenics ECC 3") in June 2015, the Company agreed to purchase additional common stock in a qualified financing, as defined in the agreement, during the sixteen months following the effective date of the Oragenics ECC 3 in an amount up to the lesser of (i) the amount that is the proportion of such financing equal to the Company's pro rata equity holdings in Oragenics as of the effective date and (ii) $10,000, subject to certain conditions. In June 2016, the Company purchased 2,261,419 shares of Oragenics common stock at $0.52 per share as part of a qualified financing. As of June 30, 2016, the Company's maximum commitment remaining was $8,833.

The Company recognized $23,612 and $15,239 of collaboration revenues from related parties in the three months ended June 30, 2016 and 2015, respectively, and $43,611 and $28,035 in the six months ended June 30, 2016 and 2015, respectively.

Other Related Parties

In June 2015, the Company entered into an agreement with Harvest, an investment fund sponsored by Harvest Capital Strategies, LLC, and a related party based on ownership in the fund by affiliates of Third Security. Harvest was established to invest in life science research and development opportunities that the Company offers to Harvest. These are investment proposals that are suitable for pursuit by a start-up venture, characterized by the agreement as "start-up opportunities." For such start-up opportunities, the Company provides Harvest with exclusive rights of first-look and first negotiation. For any opportunities it decides to pursue, Harvest establishes new collaboration entities which enter into an ECC with the Company in a designated field. The terms of such ECCs are negotiated between the Company and Harvest. In addition, the agreement provides the Company the right to present to Harvest the opportunity to invest in other ventures, including investment opportunities with respect to the Company's existing collaborations. Any such opportunities are presented at the Company's discretion on a non-exclusive basis. The agreement with Harvest does not limit the Company's ability to execute other collaborations and joint ventures with third parties. As consideration for providing exclusive rights of first-look and first negotiation for start-up opportunities, the Company receives a portion of the management fee collected by the fund sponsor of Harvest. These fees are included in other income in the accompanying consolidated statements of operations and totaled $613 and $1,258 for the three and six months ended June 30, 2016, respectively.

19. Net Loss per Share

The following table presents the computation of basic and diluted net loss per share for the three and six months ended June 30, 2016 and 2015:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2016	2015	2016	2015
Historical net loss per share:				
Numerator:				
Net loss attributable to Intrexon	$(49,064)	$ (40,663)	$(113,493)	$ (13,566)
Denominator:				
Weighted average shares outstanding, basic and diluted	118,141,377	109,318,471	117,501,264	107,720,040
Net loss attributable to Intrexon per share, basic and diluted	$(0.42)	$ (0.37)	$(0.97)	$ (0.13)

The following potentially dilutive securities as of June 30, 2016 and 2015, have been excluded from the above computations of diluted weighted average shares outstanding for the three and six months then ended, as they would have been anti-dilutive:

	June 30,	
	2016	2015
Options	11,311,525	9,503,729
Warrants	45,716	220,021
Total	11,357,241	9,723,750

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20. Subsequent Events

In August 2016, the Company and affiliates of Third Security committed to participate in a financing transaction of Fibrocell Science, Inc., which provides for the issuance of up to $25,000 in convertible promissory notes and warrants to purchase common stock. The Company and affiliates of Third Security will participate based on their respective current pro rata ownership interest and the initial closing of the financing is expected to occur during the third quarter of 2016.

In July 2016, a purported shareholder derivative action captioned Basile v. Kirk et al. was filed in the Circuit Court of Fairfax County, Virginia, against certain of the Company's directors, the Company's Chief Executive Officer, and Third Security. The complaint alleges causes of action for breaches of fiduciary duty and unjust enrichment relating to the entry by the Company into the Services Agreement with Third Security. The plaintiff seeks, among other things, damages in an unspecified amount, disgorgement of improper benefits, appropriate equitable relief, and an award of attorney fees and other costs and expenses. The Board of Directors of the Company appointed a Special Litigation Committee consisting of independent directors to investigate the claims and allegations made in the derivative action and to decide on behalf of the Company whether the claims and allegations should be pursued.

In July 2016, the Company entered into a land lease agreement to commence in January 2017 to be used for its Arctic® apples. The initial term is through December 2037 and future minimum lease payments under this leasing arrangement total approximately $8,300. The Company shall have the right to terminate the lease with six months' advance written notice under certain circumstances as defined in the lease agreement.

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Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following "Management's Discussion and Analysis of Financial Condition and Results of Operations" should be read in conjunction with the unaudited financial information and the notes thereto included in this Quarterly Report on Form 10-Q and our Annual Report on Form 10-K.

The following discussion contains forward-looking statements that reflect our plans, estimates and beliefs. Our actual results could differ materially from those discussed in the forward-looking statements and you are cautioned not to place undue reliance on forward-looking statements. Factors that could cause or contribute to these differences include those discussed below and elsewhere in this Quarterly Report on Form 10-Q, particularly in "Special Note Regarding Forward-Looking Statements" and "Risk Factors." The forward-looking statements included in this Quarterly Report on Form 10-Q are made only as of the date hereof.

Overview

We believe we are a leader in the field of synthetic biology, an emerging and rapidly evolving discipline that applies engineering principles to biological systems to enable rational, design-based control of cellular function for a specific purpose. 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 biological effector molecules, or be employed directly to enable the development of new and improved products and manufacturing processes across a variety of end markets, including health, food, energy, environment, and consumer. 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.

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 primarily around the formation of exclusive channel collaborations, or ECCs. An ECC is an agreement with a collaborator to develop products based on technologies in a specifically defined field. We seek collaborators that have expertise within a specific industry sector and the commitment to provide resources for the commercialization of products within that industry sector. 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 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.

Alternatively, we may execute a research collaboration to develop an early-stage program pursuant to which we receive reimbursement for our development costs but the exclusive commercial rights, and related access fees, are deferred until completion of an initial research program.

In certain strategic circumstances, we may enter into a joint venture, or JV, with a third party collaborator whereby we may contribute access to our technology, cash or both into the joint venture which we will jointly control with our 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 collaborator are successful in developing one or more products. For a discussion of our joint

ventures, see the "Notes to the Consolidated Financial Statements (Unaudited) - Note 4" appearing elsewhere in this Quarterly Report on Form 10-Q.

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As we consider the broad potential applications of our synthetic biology technologies, we have identified a number of ventures that are already enabling products that benefit from the application of such technology. We believe that the strategic acquisition of certain such companies will allow us to develop and commercialize innovative products and create significant value for us. Our business model therefore includes the acquisition of certain product-focused companies that may leverage our technologies and expertise in order to expand their respective product applications. As a means to further the development of our business model, in June 2015, we entered into an agreement with Harvest Intrexon Enterprise Fund I, LP, or Harvest, an investment fund sponsored by Harvest Capital Strategies, LLC, and a related party based on ownership in the fund by affiliates of Third Security, LLC, or Third Security. Harvest was established to invest in life science research and development opportunities that we offer to Harvest. These are investment proposals that are suitable for pursuit by a start-up venture, characterized by the agreement as "start-up opportunities." For such start-up opportunities, we provide Harvest with exclusive rights of first-look and first negotiation. For any opportunities it decides to pursue, Harvest establishes new collaboration entities which enter into an ECC with us in a designated field. The terms of such ECCs are negotiated between us and Harvest. In addition, the agreement provides us the right to present to Harvest the opportunity to invest in other ventures, including investment opportunities with respect to our existing collaborations. Any such opportunities are presented at our discretion on a non-exclusive basis. The agreement with Harvest does not limit our ability to execute other collaborations and joint ventures with third parties. As consideration for providing exclusive rights of first-look and first negotiation for start-up opportunities, we receive a portion of the management fee collected by the fund sponsor of Harvest.

Pursuant to our business model, we may receive equity in lieu of cash for technology access fees and milestones and also may participate in capital raises to allow earlier-stage collaborators to focus their resources on product development. However, when such a collaborator develops greater operational or financial resources, its shares become a financial asset within Intrexon that is independent of our operational or collaborative purposes. In June 2015, we provided our shareholders the opportunity to participate directly in the value generated by our ECC with ZIOPHARM Oncology, Inc., or ZIOPHARM, by distributing all of our common shares in ZIOPHARM to our shareholders as a special stock dividend.

Mergers, acquisitions, and technology in-licensing

We may augment our suite of proprietary technologies through mergers or acquisitions of technologies which then become available to new or existing collaborators. Among other things, we pursue technologies that we believe will be generally complementary to our existing technologies and also meet our desired return on investment and other economic criteria. In certain cases, such technologies may already be applied in the production of products or services, and in these cases, we may seek to expand the breadth or efficacy of such products or services through the use of our technologies. Other than our acquisition of all of the assets of Old EnviroFlight, as described in Note 4 to our consolidated financial statements appearing elsewhere in this Quarterly Report on Form 10-Q, there have been no mergers, acquisitions or significant technology in-licensing activities completed in 2016. For a discussion of our 2015 mergers, acquisitions and significant technology in-licensing activities, see the "Notes to the Consolidated Financial Statements (Unaudited)" appearing elsewhere in this Quarterly Report on Form 10-Q.

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. Certain of our consolidated subsidiaries require regulatory approval and/or commercial scale-up before they may commence significant product sales and operating profits.

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 and for sales of products and services provided by our consolidated subsidiaries 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 and license and collaboration agreements for the development and commercialization of products enabled by our technologies. Generally, the terms of our collaborations provide that we receive some or all of the following: (i) technology access fees upon signing; (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 collaboration;

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(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. Our collaborations contain multiple arrangements and we typically defer revenues from the technology access fees and milestone payments received and recognize such revenues over the expected life of our technology platform using a straight-line approach. We are also entitled to sublicensing revenues in those situations where our collaborators choose to license our technologies to other parties.

From time to time, we and certain collaborators may cancel the agreements, relieving us of any further performance obligations under the agreement. When no further performance obligations are required of us under an agreement, we recognize any remaining deferred revenue.

We also generate products and services revenue through sales of advanced reproductive technologies, including bovine embryos derived from our embryo transfer and in vitro fertilization processes and from genetic preservation and sexed semen processes and applications of such processes to other livestock, as well as sales of livestock used in production. Revenue is recognized when (i) persuasive evidence of an arrangement exists, (ii) services have been rendered or delivery has occurred such that risk of loss has passed to the customer, (iii) the price is fixed or determinable, and (iv) collection from the customer is reasonably assured.

In future periods, our revenues will depend on the number of collaborations to which we are party, the advancement and creation of programs within our collaborations and the extent to which our collaborators bring products enabled by our technologies to market. Our revenues will also depend upon our ability to maintain or improve the volume and pricing of our current product and service offerings and to develop new offerings, including those arising from our acquisitions. Our revenues will also depend upon the ability of AquaBounty Technologies, Inc., or AquaBounty, to establish successful commercialization of its AquAdvantage® Salmon products since it received regulatory approval in November 2015. Our future revenues may also include additional revenue streams we may acquire through mergers and acquisitions. In light of our limited operating history and experience in consummating new collaborations and also the limited experience with our consolidated subsidiaries, there can be no assurance as to the timing, magnitude and predictability of revenues to which we might be entitled.

Cost of products and services revenues

Cost of products and services revenues includes primarily labor and related costs, drugs and supplies used primarily in the embryo transfer and in vitro fertilization processes, livestock and feed used in production, and facility charges, including rent and depreciation. Fluctuations in the price of livestock and feed have not had a significant impact on our operating margins and we typically do not use derivative financial instruments to mitigate the price risk.

Research and development expenses

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

- salaries and benefits, 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;
- costs related to certain in-licensed technology rights;
- depreciation of leasehold improvements and laboratory equipment;
- amortization of patents and related technologies acquired in mergers and acquisitions; and
- rent and utility costs for our research and development facilities.

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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, the costs incurred to develop a specific application of our technologies in support of current or prospective collaborators, or costs incurred to expand or otherwise improve our products and services. Research and development expenses, including costs for preclinical or clinical development, incurred for programs we support pursuant to an ECC agreement are typically 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, the costs incurred to develop a specific application of our technologies in support of current or prospective collaborators and licensees, or costs incurred to expand or otherwise improve our products and services for the three and six months ended June 30, 2016 and 2015. 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, specific applications of our technologies in support of current or prospective collaborators and licensees, or expanding or improving our product and services offerings. Research and development expenses for the six months ended June 30, 2015 include a $59.6 million payment in our common stock for an exclusive license to certain technologies owned by the University of Texas MD Anderson Cancer Center, or MD Anderson, to be used in the expansion and improvement of our platform technologies.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2016	2015	2016	2015
	(In thousands)			
Expansion or improvement of our platform technologies	$2,998	$4,015	$5,867	$68,527
Specific applications of our technologies in support of current and prospective collaborators and licensees	16,214	9,726	30,167	18,078
Expansion or improvement of our product and service offerings	4,774	2,101	8,767	3,815
Other	4,389	4,539	9,430	9,268
Total research and development expenses	$28,375	$20,381	$54,231	$99,688

We expect that our research and development expenses will increase as we continue to enter into collaborations and as we expand our offerings across additional market sectors. 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. Research and development expenses may also increase as a result of ongoing research and development operations which we might assume through mergers and acquisitions.

Selling, general and administrative expenses

Selling, general and administrative, or SG&A, expenses consist primarily of salaries and related costs, including stock-based compensation expense, for employees in executive, operational, finance, sales and marketing, information technology, legal and corporate communications functions. Other significant SG&A expenses include rent and utilities, insurance, accounting and legal services and expenses associated with obtaining and maintaining our intellectual property.

We expect that our SG&A expenses will increase as we continue to operate as a public company and expand our operations. We believe that these increases will likely include costs related to the hiring of additional personnel and increased fees for business development functions, outside consultants, lawyers and accountants, including costs to comply with corporate governance, internal controls and similar requirements applicable to public companies. Selling, general and administrative expenses may also increase as a result of ongoing operations which we might assume through mergers and acquisitions.

Other income (expense), net

We hold equity securities received and/or purchased from certain collaborators, as well as preferred stock received from another of our collaborators, ZIOPHARM, which may be converted to common stock in the future. Other than investments accounted for using the equity method discussed below, we elected the fair value option to account for our equity securities and

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investment in preferred stock held in these collaborators. These equity securities and preferred stock 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 statements of operations. As such, we bear the risk that fluctuations in the securities' share prices may significantly impact our results of operations. In June 2015, we recorded a realized gain related to the distribution of all of our common shares of ZIOPHARM to our shareholders as a special stock dividend.

Interest income consists of interest earned on our cash and cash equivalents and short-term and long-term investments. Interest expense pertains to deferred consideration payable to the former members of Trans Ova Genetics, L.C., or Trans Ova, and long term debt.

As consideration for providing exclusive rights of first-look and first negotiation, we receive a portion of the management fee collected by the fund sponsor of Harvest for our obligation to provide Harvest with investment proposals that are suitable for pursuit by a startup. These fees are included in other income.

Equity in net income (loss) of affiliates

Equity in net income or loss of affiliates is our pro-rata share of our equity method investments' operating results, adjusted for accretion of basis difference. We account for investments in our joint ventures and startup entities backed by Harvest using the equity method of accounting since we have the ability to exercise significant influence, but not control, over the operating activities of these entities.

Results of operations

Comparison of the three months ended June 30, 2016 and the three months ended June 30, 2015

The following table summarizes our results of operations for the three months ended June 30, 2016 and 2015, together with the changes in those items in dollars and as a percentage:

	Three Months Ended June 30,		Dollar Change	Percent Change
	2016	2015		
	(In thousands)			
Revenues				
Collaboration and licensing revenues	$27,481	$17,181	$10,300	59.9 %
Product revenues	10,884	14,266	(3,382)	(23.7)%
Service revenues	13,927	13,255	672	5.1 %
Other revenues	209	189	20	10.6 %
Total revenues	52,501	44,891	7,610	17.0 %
Operating expenses				
Cost of products	10,753	11,764	(1,011)	(8.6)%
Cost of services	6,332	6,503	(171)	(2.6)%
Research and development	28,375	20,381	7,994	39.2 %
Selling, general and administrative	30,263	23,673	6,590	27.8 %
Total operating expenses	75,723	62,321	13,402	21.5 %
Operating loss	(23,222)	(17,430)	(5,792)	33.2 %
Total other expense, net	(22,347)	(20,950)	(1,397)	6.7 %
Equity in loss of affiliates	(5,053)	(2,180)	(2,873)	131.8 %
Loss before income taxes	(50,622)	(40,560)	(10,062)	24.8 %
Income tax benefit (expense)	591	(934)	1,525	(163.28)%
Net loss	(50,031)	(41,494)	(8,537)	20.6 %
Net loss attributable to noncontrolling interests	967	831	136	16.4 %
Net loss attributable to Intrexon	$(49,064)	$(40,663)	$(8,401)	20.7 %

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Collaboration and licensing revenues

The following table shows the collaboration and licensing revenue for the three months ended June 30, 2016 and 2015, together with the changes in those items. See Note 5 to our consolidated financial statements appearing elsewhere in this Quarterly Report on Form 10-Q for further discussion of our collaboration and licensing revenues.

	Three Months Ended June 30,		Dollar Change
	2016	2015	
	(In thousands)		
ZIOPHARM Oncology, Inc.	$6,970	$5,250	$1,720
Oragenics, Inc.	507	375	132
Fibrocell Science, Inc.	1,394	1,918	(524)
Genopaver, LLC	1,637	935	702
S & I Ophthalmic, LLC	2,358	890	1,468
OvaXon, LLC	808	662	146
Intrexon Energy Partners, LLC	4,212	3,356	856
Persea Bio, LLC	331	266	65
Ares Trading S.A.	2,218	739	1,479
Thrive Agrobiotics, Inc.	450	—	450
Intrexon Energy Partners II, LLC	894	—	894
Exotech Bio, Inc.	139	—	139
Relieve Genetics, Inc.	350	—	350
Intrexon T1D Partners, LLC	310	—	310
Other	4,903	2,790	2,113
Total	$27,481	$17,181	$10,300

Collaboration and licensing revenues increased $10.3 million over the three months ended June 30, 2015 due to (i) the recognition of deferred revenue for upfront payments received from our license and collaboration agreement with Ares Trading S.A, or Ares Trading, a subsidiary of the biopharmaceutical business of Merck KGaA, which became effective in May 2015, and from other collaborations signed by us between July 1, 2015 and June 30, 2016; and (ii) increased research and development services for these collaborations and for the progression of programs or the addition of new programs with previously existing collaborators, including ZIOPHARM, Genopaver, LLC and our joint ventures with S & I Ophthalmic, LLC and Intrexon Energy Partners, LLC.

Product revenues and gross margin

Product revenues were $10.9 million for the three months ended June 30, 2016 compared to $14.3 million for the three months ended June 30, 2015, a decrease of $3.4 million, or 24 percent. The decrease in product revenues and gross margin thereon primarily relates to a decrease in the quantities of pregnant cows, livestock previously used in production and live calves sold due to lower customer demand for these products. These decreases were partially offset by an increase in the quantity of weaned calves sold due to higher customer demand.

Service revenues and gross margin

Service revenues were $13.9 million for the three months ended June 30, 2016 compared to $13.3 million for the three months ended June 30, 2015, an increase of $0.6 million, or 5 percent. The increase relates to an increase in the number of in vitro fertilization cycles performed due to higher customer demand.

Research and development expenses

Research and development expenses increased $8.0 million, or 39 percent, due primarily to increases in (i) salaries, benefits and other personnel costs for research and development employees, (ii) lab supplies and consulting expenses, and (iii) depreciation and amortization. Salaries, benefits and other personnel costs increased $2.3 million due to (i) an increase in

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research and development headcount to support new and expanded collaborations and (ii) costs for research and development employees assumed in our acquisition of Oxitec Limited, or Oxitec, in September 2015. Lab supplies and consulting expenses increased $3.4 million as a result of (i) the progression into the preclinical phase with certain of our collaborators, (ii) the increased level of research and development services provided to our collaborators, and (iii) costs incurred as a result of our September 2015 acquisition of Oxitec. Depreciation and amortization increased $1.9 million primarily as a result of (i) the inclusion of a full three months of depreciation and amortization on property and equipment and intangible assets acquired in our 2015 acquisitions, and (ii) amortization related to AquaBounty's intangible assets upon regulatory approval in November 2015.

Selling, general and administrative expenses

SG&A expenses increased $6.6 million, or 28 percent, over the three months ended June 30, 2015. Legal and professional expenses increased $5.8 million due to (i) consulting expenses payable in shares of our common stock pursuant to our services agreement with Third Security which we entered into in November 2015; (ii) expenses incurred to support domestic and international government affairs for regulatory and other approvals necessary to commercialize our products and services; (iii) increased legal fees incurred to defend ongoing litigation; and (iv) incremental costs incurred to support the ongoing operations of our 2015 acquisitions and other business development activities. These increases were partially offset by a decrease of $2.2 million for salaries, benefits and other personnel costs. Salaries, benefits and other personnel costs decreased primarily due to a decrease in stock compensation and other compensation expenses resulting primarily from the departure of certain officers of the Company. These decreases were partially offset by increased headcount, including a new executive officer, to support our expanding operations as well as our acquisition of Oxitec in September 2015.

Total other expense, net

Total other expense, net, was $22.3 million for the three months ended June 30, 2016 compared to $21.0 million for the three months ended June 30, 2015, an increase of $1.3 million or 7 percent. This increase was primarily attributable to market changes in our current equity securities portfolio. In 2015, we realized an $81.4 million gain on equity securities as a result of the special stock dividend of all of our common shares of ZIOPHARM to our shareholders.

Equity in net loss of affiliates

Equity in net loss of affiliates for the three months ended June 30, 2016 and 2015 includes our pro-rata share of the net losses of our investments we account for using the equity method of accounting. The $2.9 million increase is due to the addition of our new joint ventures entered into subsequent to July 1, 2015, including our investments in start-up entities backed by Harvest, as well as additional expenses incurred by our other joint ventures as their programs continue to progress.

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Comparison of the six months ended June 30, 2016 and the six months ended June 30, 2015

The following table summarizes our results of operations for the six months ended June 30, 2016 and 2015, together with the changes in those items in dollars and as a percentage:

	Six Months Ended June 30,		Dollar Change	Percent Change
	2016	2015		
	(In thousands)			
Revenues				
Collaboration and licensing revenues	$51,554	$31,964	$19,590	61.3 %
Product revenues	19,439	23,199	(3,760)	(16.2)%
Service revenues	24,592	23,212	1,380	5.9 %
Other revenues	354	365	(11)	(3.0)%
Total revenues	95,939	78,740	17,199	21.8 %
Operating expenses				
Cost of products	20,315	20,439	(124)	(0.6)%
Cost of services	12,004	11,865	139	1.2 %
Research and development	54,231	99,688	(45,457)	(45.6)%
Selling, general and administrative	73,144	51,301	21,843	42.6 %
Total operating expenses	159,694	183,293	(23,599)	(12.9)%
Operating loss	(63,755)	(104,553)	40,798	(39.0)%
Total other income (expense), net	(43,772)	94,728	(138,500)	(146.2)%
Equity in loss of affiliates	(10,696)	(4,136)	(6,560)	158.6 %
Loss before income taxes	(118,223)	(13,961)	(104,262)	>200%
Income tax benefit (expense)	2,872	(1,729)	4,601	>200%
Net loss	(115,351)	(15,690)	(99,661)	>200%
Net loss attributable to noncontrolling interests	1,858	2,124	(266)	(12.5)%
Net loss attributable to Intrexon	$(113,493)	$(13,566)	$(99,927)	>200%

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Collaboration and licensing revenues

The following table shows the collaboration and licensing revenue for the six months ended June 30, 2016 and 2015, together with the changes in those items. See Note 5 to our consolidated financial statements appearing elsewhere in this Quarterly Report on Form 10-Q for further discussion of our collaboration and licensing revenues.

	Six Months Ended June 30,		Dollar Change
	2016	2015	
	(In thousands)		
ZIOPHARM Oncology, Inc.	$13,951	$9,051	$4,900
Oragenics, Inc.	1,313	645	668
Fibrocell Science, Inc.	3,251	4,079	(828)
Genopaver, LLC	3,215	1,604	1,611
S & I Ophthalmic, LLC	3,544	1,645	1,899
OvaXon, LLC	1,502	1,306	196
Intrexon Energy Partners, LLC	8,200	6,166	2,034
Persea Bio, LLC	655	506	149
Ares Trading S.A.	4,623	739	3,884
Thrive Agrobiotics, Inc.	884	—	884
Intrexon Energy Partners II, LLC	1,444	—	1,444
Exotech Bio, Inc.	139	—	139
Relieve Genetics, Inc.	350	—	350
Intrexon T1D Partners, LLC	310	—	310
Other	8,173	6,223	1,950
Total	$51,554	$31,964	$19,590

Collaboration and licensing revenues increased $19.6 million over the six months ended June 30, 2015 due to (i) the recognition of deferred revenue for upfront payments received from our license and collaboration agreement with Ares Trading, which became effective in May 2015, and from other collaborations signed by us between July 1, 2015 and June 30, 2016; and (ii) increased research and development services for these collaborations and for the progression of programs or the addition of new programs with previously existing collaborators, including ZIOPHARM and Genopaver, LLC, and our joint ventures with S & I Ophthalmic, LLC and Intrexon Energy Partners, LLC.

Product revenues and gross margin

Product revenues were $19.4 million for the six months ended June 30, 2016 compared to $23.2 million for the six months ended June 30, 2015, a decrease of $3.8 million, or 16 percent. The decrease in product revenues and gross margin thereon primarily relates to a decrease in the quantities of pregnant cows, livestock previously used in production and live calves sold due to lower customer demand for these products. These decreases were partially offset by an increase in the quantity of weaned calves sold due to higher customer demand.

Service revenues and gross margin

Service revenues were $24.6 million for the six months ended June 30, 2016 compared to $23.2 million for the six months ended June 30, 2015, an increase of $1.4 million, or 6 percent. The increase relates to an increase in the number of in vitro fertilization cycles performed due to higher customer demand.

Research and development expenses

Research and development expenses declined $45.5 million, or 46 percent, due primarily to the inclusion in 2015 of a $59.6 million payment in common stock for an exclusive license to certain technologies owned by MD Anderson. This decrease was partially offset by increases in (i) salaries, benefits and other personnel costs for research and development employees, (ii) lab supplies and consulting expenses, and (iii) depreciation and amortization. Salaries, benefits and other personnel costs increased

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$4.6 million due to (i) an increase in research and development headcount to support new and expanded collaborations and (ii) costs for research and development employees assumed in our acquisition of Oxitec in September 2015. Lab supplies and consulting expenses increased $6.2 million as a result of (i) the progression into the preclinical phase with certain of our collaborators, (ii) the increased level of research and development services provided to our collaborators, and (iii) costs incurred as a result of our September 2015 acquisition of Oxitec. Depreciation and amortization increased $3.8 million primarily as a result of (i) inclusion of a full period of depreciation and amortization on property and equipment and intangible assets acquired in our 2015 acquisitions and (ii) amortization related to AquaBounty's intangible assets upon regulatory approval in November 2015.

Selling, general and administrative expenses

SG&A expenses increased $21.8 million, or 43 percent, over the six months ended June 30, 2015. Salaries, benefits and other personnel costs for SG&A employees increased $3.8 million due to (i) increased headcount, including a new executive officer, to support our expanding operations; (ii) a full period of stock compensation expense for a company-wide option grant to employees in March 2015; and (iii) salaries, benefits and other personnel costs for employees assumed in our acquisition of Oxitec in September 2015. These increases were partially offset by (i) a decrease in stock compensation and other compensation expenses resulting primarily from the departure of certain officers of the Company. Legal and professional expenses increased $9.5 million primarily due to (i) consulting expenses payable in shares of our common stock pursuant to our services agreement with Third Security, LLC which we entered into in November 2015; (ii) expenses incurred to support domestic and international government affairs for regulatory and other approvals necessary to commercialize our products and services; (iii) increased legal fees for trial and post-trial activities for our litigation with XY, LLC, and to defend ongoing litigation; and (iv) incremental costs incurred to support the ongoing operations of our 2015 acquisitions and other business development activities. In 2016, we also recorded $4.2 million in litigation settlement expenses arising from the entrance of a court order in our trial with XY, LLC.

Total other income (expense), net

Total other income (expense), net, was $(43.8) million for the six months ended June 30, 2016 compared to $94.7 million for the six months ended June 30, 2015, a decrease of $138.5 million or 146 percent. This decrease was attributable to the $81.4 million realized gain recognized upon the special stock dividend of all of our shares of ZIOPHARM to our shareholders in June 2015 and the decrease in fair value of our equity securities portfolio.

Equity in net loss of affiliates

Equity in net loss of affiliates for the six months ended June 30, 2016 and 2015 includes our pro-rata share of the net losses of our investments we account for using the equity method of accounting. The $6.6 million increase is due to the addition of our new joint ventures entered into subsequent to July 1, 2015, including our investments in start-up entities backed by Harvest as well as additional expenses incurred by our other joint ventures as their programs continue to progress.

Liquidity and capital resources

Sources of liquidity

We have incurred losses from operations since our inception and as of June 30, 2016, we had an accumulated deficit of $656.2 million. From our inception through June 30, 2016, we have funded our operations principally with proceeds received from private and public offerings, cash received from our collaborators and through product and service sales made directly to customers. As of June 30, 2016, we had cash and cash equivalents of $155.1 million and short-term and long-term investments of $166.1 million. Cash in excess of immediate requirements is invested primarily in money market funds and U.S. government debt securities in order to maintain liquidity and preserve capital.

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Cash flows

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

	Six Months Ended June 30,	
	2016	2015
	(In thousands)	
Net cash provided by (used in):		
Operating activities	$(16,049)	$(29,558)
Investing activities	18,624	(17,808)
Financing activities	16,886	118,389
Effect of exchange rate changes on cash and cash equivalents	(162)	410
Net increase in cash and cash equivalents	$19,299	$71,433

Cash flows from operating activities:

Net cash used in operating activities was $16.0 million for the six months ended June 30, 2016 compared to $29.6 million for the six months ended June 30, 2015. During the six months ended June 30, 2016, we received a $10.0 million technology access fee pursuant to a new collaboration. Our net loss of $115.4 million, after deduction of significant noncash items of (i) $45.8 million of noncash unrealized losses on our equity securities, (ii) $19.8 million of stock-based compensation expense, (iii) $11.7 million of depreciation and amortization expense, (iv) $5.7 million of shares issued as payment for services, and (v) $10.7 million of equity in net loss of affiliates, was $21.7 million.

Net cash used in operating activities was $29.6 million for the six months ended June 30, 2015. During the six months ended June 30, 2015, we had a net loss of $15.7 million which includes noncash items of (i) $94.8 million of unrealized appreciation and realized gains on our equity securities, (ii) $59.6 million of common stock issued to MD Anderson recorded as research and development expense, and (iii) $18.1 million of stock-based compensation expense.

Cash flows from investing activities:

Net cash provided by investing activities was $18.6 million for the six months ended June 30, 2016 compared to net cash used in investing activities of $17.8 million for the six months ended June 30, 2015. During the six months ended June 30, 2016, we received proceeds of $42.0 million from the maturity of short-term and long-term investments. These proceeds were offset by cash outflows of $10.0 million in purchases of property, plant and equipment, $7.2 million to acquire the assets of EnviroFlight, and $5.1 million for investments in our joint ventures. During the six months ended June 30, 2015, we used $39.5 million, net of cash received, for the acquisition of ActoGeniX NV and Okanagan Specialty Fruits, Inc., $14.9 million for the purchase of equity securities and warrants of two of our collaborators, and $6.7 million for purchases of property, plant and equipment. These cash outflows were offset by $48.0 million of proceeds from the maturity of short-term and long-term investments.

Cash flows from financing activities:

Net cash provided by financing activities was $16.9 million for the six months ended June 30, 2016 compared to $118.4 million for the six months ended June 30, 2015. During the six months ended June 30, 2016, we received $17.7 million from stock option exercises. During the six months ended June 30, 2015, we received $110.0 million of net proceeds from our public offering which closed in January 2015 and $10.4 million from stock option exercises.

Future capital requirements

We established our current strategy and business model of commercializing our technologies through collaborators with development expertise in 2010 and we consummated our first collaboration in January 2011. We believe that we will continue to consummate collaborations with new companies across our various market sectors, which will result in additional upfront, milestone and cost recovery payments in the future.

We believe that our existing cash and cash equivalents, short-term and long-term investments, and cash expected to be received from our current collaborators and for sales of products and services provided by our consolidated subsidiaries will enable us to fund our operating expenses and capital expenditure requirements for at least the next 12 months.

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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;
- our ability to maintain or improve the volume and pricing of our current product offerings and to develop new offerings, including those which may incorporate new technologies;
- 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 products of our collaborations and operations;
- the resources, time and cost required for the preparation, filing, prosecution, maintenance and enforcement of patent claims;
- investments we may make in current and future collaborators, including joint ventures;
- strategic mergers and acquisitions, including both the upfront acquisition cost as well as the cost to integrate, maintain, and expand the strategic target; and
- 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.

Until such time, if ever, as we can regularly 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 June 30, 2016 and the effects such obligations are expected to have on our liquidity and cash flows in future periods:

	Total	Less Than 1 Year	1 - 3 Years	3 - 5 Years	More Than 5 Years
	(In thousands)				
Operating leases (1)	$16,232	$4,110	$6,383	$5,147	$592
Deferred consideration	15,944	9,255	6,689	—	—
Long term debt	6,036	491	893	639	4,013
Contingent consideration	3,660	1,404	2,256	—	—
	$41,872	$15,260	$16,221	$5,786	$4,605

(1) In July 2016, we entered into a land lease agreement to commence in January 2017 to be used for its Arctic® apples. The initial term is through December 2037, and future minimum lease payments under this leasing arrangement total approximately $8.3 million and are excluded from the table above. We shall have the right to terminate the lease with six months' advance written notice under certain circumstances as defined in the lease agreement.

In addition to the obligations in the table above, as of June 30, 2016 we also have the significant contractual obligations described below.

In conjunction with the formation of our joint ventures, we committed to making future capital contributions of at least $45.0 million to the joint ventures, subject to certain conditions and limitations, of which $34.4 million is remaining as of June 30, 2016. These future capital contributions are not included in the table above due to the uncertainty of the timing and amounts of such contributions.

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 June 30, 2016, we had research and development commitments with third parties totaling $7.7 million that had not yet been incurred.

In June 2015, we and Oragenics, Inc., or Oragenics, entered into an ECC. In conjunction with this ECC, we agreed to purchase additional common stock in a qualified financing, as defined in the agreement, during the sixteen months following the effective date of the ECC in an amount up to the lesser of (i) the amount that is the proportion of such financing equal to our pro rata equity holdings in Oragenics as of the effective date and (ii) $10 million, subject to certain conditions. In June 2016, we participated in a qualified financing and as of June 30, 2016, the maximum commitment remaining was $8.8 million. This amount is not included in the table above due to the uncertainty of whether or not we will make this payment.

In January 2015, we and ZIOPHARM jointly entered into a license agreement with MD Anderson whereby we received an exclusive license to certain technologies owned by MD Anderson. ZIOPHARM will receive access to these technologies pursuant to the terms of our ECC. We and ZIOPHARM are obligated to reimburse MD Anderson for out of pocket expenses for maintaining patents covering the licensed technologies. These reimbursements are not included in the table above due to the uncertainty of the timing and amounts of such reimbursements.

As part of our August 2014 acquisition of Trans Ova, we agreed to pay a portion of certain cash proceeds received from the litigation with XY, LLC. These amounts are not included in the table above due to the uncertainty of whether any amounts may be due.

In conjunction with a prior transaction associated with Trans Ova's subsidiary, ViaGen, L.C., or ViaGen, in September 2012, we may be obligated to make certain future contingent payments to the former equity holders of ViaGen, up to a total of $5.0 million if certain revenue targets, as defined in the share purchase agreement, are met. This amount is not included in the table above due to the uncertainty of when we will make any of these future payments, if ever.

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We acquired 100 percent of the outstanding capital stock of Immunologix, Inc., or 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 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. 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 additional regulatory considerations, the timing of repayment is uncertain. AquaBounty has claimed all amounts available under the grant, resulting in total long-term debt of $2.0 million on our consolidated financial statements as of June 30, 2016. This amount is not included in the table above due to the uncertainty of the timing of repayment.

Net operating losses

As of June 30, 2016, we had net operating loss carryforwards of approximately $266.4 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 $6.8 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. Our direct foreign subsidiaries have foreign loss carryforwards of approximately $117.9 million, most of which do not expire.

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 June 30, 2016, 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 June 30, 2016, approximately $19.1 million of domestic 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.

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.

There have been no material changes to our critical accounting policies from those described in "Management's discussion and analysis of financial condition and results of operations" included in our Annual report on Form 10-K for the year ended December 31, 2015, except for the addition of a new critical accounting policy as disclosed below.

Investment in Preferred Stock

We hold preferred stock received from one of our collaborators, ZIOPHARM, which may be converted to common stock upon the occurrence of certain events in the future. We elected the fair value option to account for our investment in preferred stock whereby the value of preferred stock is adjusted to fair value as of each reporting date and unrealized gains and losses are reported in the consolidated statement of operations. This investment is subject to fluctuation in the future due to, among other things, the likelihood and timing of conversion of the preferred stock into common stock, the volatility of ZIOPHARM's common stock, and changes in general economic and financial

conditions of ZIOPHARM. The investment is classified as

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noncurrent in the consolidated balance sheet because we do not intend to sell the investment or expect it to be converted into shares of common stock within one year.

We are entitled to a monthly dividend payable in additional shares of preferred stock.

Recent accounting pronouncements

For information with respect to recent accounting pronouncements and the impact of these pronouncements on our consolidated financial statements, see Note 2 – "Summary of Significant Accounting Policies" in the notes to the consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q.

Item 3. 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 $321.2 million and $343.8 million at June 30, 2016 and December 31, 2015, respectively. Our cash and cash equivalents and short-term and long-term investments consist of cash, money market funds, U.S. government debt securities 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 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' common stock

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 June 30, 2016 and December 31, 2015, the original aggregate cost basis of these investments was $108.3 million and $107.2 million, respectively, and the market value was $39.0 million and $83.7 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 June 30, 2016 would be approximately $42.9 million and $31.2 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, 2015 would be approximately $92.1 million and $67.0 million, respectively, based on a hypothetical 10 percent increase or 20 percent decrease in the value of the investments.

The common stock of AquaBounty is traded on the London Stock Exchange and as of June 30, 2016, we owned 99,114,668 shares or approximately 63 percent. The fair value of our investment in AquaBounty as of June 30, 2016 and December 31, 2015 was $32.5 million and $36.7 million, respectively. The fair value of our investment in AquaBounty as of June 30, 2016 would be approximately $35.8 million and $26.0 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, 2015 would be approximately $40.4 million and $29.4 million, respectively, based on a hypothetical 10 percent increase or 20 percent decrease in the share price of AquaBounty.

Investment in publicly traded company's preferred stock

We have a preferred stock investment in ZIOPHARM, a publicly traded company, which may be converted to common stock upon the occurrence of certain events in the future. We have adopted the fair value method of accounting for this investment whereby the value of preferred stock is adjusted to fair value as of each reporting date. As of June 30, 2016, the original cost basis of this investment equaled the fair value, which was $120.0 million. The fair value of this investment is subject to fluctuation in the future due to, among other things, the likelihood and timing of conversion of the preferred stock into common stock, the volatility of ZIOPHARM's common stock, and changes in general economic and financial conditions of

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ZIOPHARM. The fair value of this investment as of June 30, 2016 would be approximately $132.0 million and $96.0 million, respectively, based on a hypothetical 10 percent increase or 20 percent decrease in the value of the investment.

Foreign currency exchange risk

We have international subsidiaries in Belgium, Brazil, Canada, England, and Hungary. These subsidiaries' assets, liabilities, and current revenues and expenses are denominated in their respective foreign currencies. 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 4. Controls and Procedures

Pursuant to Rule 13a-15(b) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), we carried out an evaluation, under supervision and with the participation of our management, including our Chief Executive Officer ("CEO"), who is our principal executive officer, and our Chief Financial Officer ("CFO"), who is our principal financial officer, of the effectiveness of the design and operation of our disclosure controls and procedures (as defined under Rule 13a-15(e) and 15(d)-15(e) under the Exchange Act) as of the end of the period covered by this report. Based upon that evaluation, as of the end of the period covered by this report, our CEO and CFO concluded that our disclosure controls and procedures are effective to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act, is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our CEO and CFO, as appropriate, to allow timely decisions regarding required disclosure.

There has been no change in our internal control over financial reporting during the three months ended June 30, 2016, that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

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PART II. OTHER INFORMATION

Item 1. 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 May 2016, two purported shareholder class action lawsuits, captioned Hoffman v. Intrexon Corporation et al. and Gibrall v. Intrexon Corporation et al., were filed in the U.S. District Court for the Northern District of California on behalf of purchasers of our common stock between May 12, 2015 and April 20, 2016 (the "Class Period"). The complaints name as defendants us and certain of our current officers (the "Defendants"). The complaints allege, among other things, that, in violation of the federal securities laws, the Defendants made materially false and/or misleading statements in the Company's periodic reports on Forms 10-K and 10-Q filed during the Class Period with respect to our business, operations and prospects. The basis for the plaintiffs' claims derived from a report published in April 2016 on the Seeking Alpha financial blog. The plaintiffs seek compensatory damages, interest and an award of reasonable attorneys' fees and costs. In July 2016, the court hearing the matters entered an order consolidating the lawsuits and appointing a lead plaintiff. We intend to defend the lawsuit vigorously; however, there can be no assurance regarding the ultimate outcome of these lawsuits.

In July 2016, a purported shareholder derivative action captioned Basile v. Kirk et al. was filed in the Circuit Court of Fairfax County, Virginia, against certain of our directors, our Chief Executive Officer, and Third Security. The complaint alleges causes of action for breaches of fiduciary duty and unjust enrichment relating to the entry by us into the Services Agreement with Third Security. The plaintiff seeks, among other things, damages in an unspecified amount, disgorgement of improper benefits, appropriate equitable relief, and an award of attorney fees and other costs and expenses. Our Board of Directors appointed a Special Litigation Committee consisting of independent directors to investigate the claims and allegations made in the derivative action and to decide on our behalf whether the claims and allegations should be pursued.

Item 1A. Risk Factors

As disclosed in "Item 1A. Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2015, there are a number of risks and uncertainties that may have a material effect on the operating results of our business and our financial condition. There are no additional material updates or changes to our risk factors since the filing of our Annual Report on Form 10-K for the year ended December 31, 2015, except as follows:

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

Our collaborators may have limited capital in which case we may allow them to pay technology access fees, milestone payments or other contractual payments in shares of their common stock or other equity. As a result, we own equity interests in several of 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 evaluate prospective collaborators based on a variety of factors such as their capabilities, capacity and expertise in a defined field. 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. We own preferred stock of a publicly traded company that may be converted to common stock

in the future and the value of this equity interest is subject to fluctuation due to the uncertainties of the timing and occurrence of the defined conversion events, the volatility of the underlying common stock, and changes in general economic and financial conditions of

the collaborator. 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 June 30, 2016 and December 31, 2015, the aggregate original cost basis of these securities was $228.3 million and $107.2 million, respectively, and the market value was $159.0 million and $83.7 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 and operational conditions of one or more collaborators.

The equity 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 own preferred stock of a publicly traded company that may be converted, but the timing of that conversion is uncertain and may never occur. If the conversion does not occur, there is a risk that we may not be able to sell the preferred stock. 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 or JV. In the event we conclude that a discount should be applied, the fair value of the securities is adjusted at inception of the ECC or JV 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 or JVs, 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 or JVs, 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.

We use estimates in determining the fair value of certain assets and liabilities. If our estimates prove to be incorrect, we may be required to write down the value of these assets or write up the value of these liabilities, which could adversely affect our earnings.

Our ability to measure and report our financial position and operating results is influenced by the need to estimate the impact or outcome of future events on the basis of information available at the time of the financial statements. An accounting estimate is considered critical if it requires that management make assumptions about matters that were highly uncertain at the time the accounting estimate was made. If actual results differ from our judgments and assumptions, then it may have an adverse impact on the results of operations and cash flows.

Fair value is estimated based on a hierarchy that maximizes the use of observable inputs and minimizes the use of unobservable inputs. Observable inputs are inputs that reflect the assumptions that market participants would use in pricing the asset or liability developed based on market data obtained from sources independent of the reporting entity. Unobservable inputs are inputs that reflect the reporting entity's own assumptions about the assumptions market participants would use in pricing the asset or liability developed based on the best information available in the circumstances. The fair value hierarchy prioritizes the inputs to valuation techniques into three broad levels whereby the highest priority is given to Level 1 inputs and the lowest to Level 3 inputs.

As a result of our ongoing and potential future business activities, the number and complexity of estimates we use in determining fair value has increased. As of June 30, 2016 and December 31, 2015, 32 percent and 30 percent of our consolidated total assets, respectively, were measured at fair value on a recurring basis, including 12 percent as of June 30, 2016 which were considered Level 3 valuations. Our largest Level 3 asset carried at fair value is our investment in preferred stock of ZIOPHARM. As of June 30, 2016 and December 31, 2015, liabilities measured at fair value on a recurring basis were not a significant portion of our total liabilities. We estimate the fair value of our assets and liabilities using assumptions that we believe are appropriate and are used by market participants. The methodology used to estimate these values is complex and uses asset- and liability-specific data and market inputs for assumptions including interest and discount rates and expected future performance and liquidity dates.

Valuations are highly dependent upon the reasonableness of our assumptions and the predictability of the relationships that drive the results of our valuation methodologies. Because of the inherent unpredictability in the future performance of the investments requiring Level 3 valuations, we may be required to adjust the value of certain assets, which could adversely affect our earnings.

In evaluating our risks, readers should carefully consider these risk factors and the risk factors discussed in our Annual Report on Form 10-K for the year ended December 31, 2015, which could materially affect our business, financial condition or operating results, in addition to the other information set forth in this report and in our other filings with the SEC.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

(a) Sales of Unregistered Securities

From April 1, 2016 through June 30, 2016, we consummated the following transaction involving the issuance of unregistered securities:

- the issuance of 85,300 unregistered shares of our common stock in April, May and June 2016, as payment under the Services Agreement entered into and effective as of November 1, 2015, by and between us and Third Security as previously discussed in our Current Report on Form 8-K filed on October 30, 2015.

(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).

On January 27, 2015, we closed a public offering of 4,312,500 shares of our common stock (inclusive of 562,500 shares of common stock sold by us pursuant to the full exercise of an option granted to the underwriters in connection with the offering) at a public offering price of $27.00 per share for aggregate gross offering proceeds of approximately $116.4 million. J.P. Morgan Securities LLC and Merrill Lynch, Pierce, Fenner & Smith Incorporate acted as joint book-running managers. Net proceeds to us were approximately $110.0 million after deducting underwriting discounts and commissions of approximately $6.1 million and other offering expenses of approximately $0.3 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 this offering as described in our final prospectus, dated January 21, 2015, and filed with the Securities and Exchange Commission on January 22, 2015 pursuant to Rule 424(b).

On August 26, 2015, we closed a public offering of 5,609,756 shares of our common stock (inclusive of 731,707 shares of common stock sold by us pursuant to the full exercise of an option granted to the underwriters in connection with the offering) at a public offering price of $41.00 per share for aggregate gross offering proceeds of approximately $230.0 million. JMP Securities LLC acted as sole book-running manager. Stifel, Nicolaus & Company, Incorporated acted as lead manager. Griffin Securities, Inc. and Wunderlich Securities, Inc. acted as co-managers. Net proceeds to us were approximately $218.2 million after deducting underwriting discounts and commissions of approximately $11.5 million and other offering expenses of approximately $0.3 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 this offering as described in our final prospectus, dated August 21, 2015, and filed with the Securities and Exchange Commission on August 25, 2015 pursuant to Rule 424(b).

(c) Issuer Purchases of Equity Securities

Not applicable.

Item 6. Exhibits

Exhibit No.	Description
10.1*	Third Amendment to Exclusive Channel Partner Agreement by and between ZIOPHARM Oncology, Inc. and Intrexon Corporation dated as of June 29, 2016 (incorporated by reference to Exhibit 10.1 to Intrexon Corporation's Current Report on Form 8-K, filed on June 30, 2016 with the Securities and Exchange Commission).
10.2*	Amendment to Exclusive Channel Collaboration Agreement by and between ZIOPHARM Oncology, Inc. and Intrexon Corporation dated as of June 29, 2016 (incorporated by reference to Exhibit 10.2 to Intrexon Corporation's Current Report on Form 8-K, filed on June 30, 2016 with the Securities and Exchange Commission).
10.3*	Securities Issuance Agreement by and between ZIOPHARM Oncology, Inc. and Intrexon Corporation dated as of June 29, 2016 (incorporated by reference to Exhibit 10.3 to Intrexon Corporation's Current Report on Form 8-K, filed on June 30, 2016 with the Securities and Exchange Commission).
10.4	Amended and Restated Certificate of Designation (incorporated by reference to Exhibit 3.1 to ZIOPHARM Oncology, Inc.'s Current Report on Form 8-K/A, filed on July 1, 2016 with the Securities and Exchange Commission).
10.5**†	Employment Agreement, dated as of May 16, 2016, between Intrexon Corporation and Geno J. Germano.
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.
	Interactive Data File (Quarterly Report on Form 10-Q, for the quarterly period ended June 30, 2016, formatted in XBRL (eXtensible Business Reporting Language)).
101.0**	Attached as Exhibit 101.0 to this Quarterly Report on Form 10-Q are the following documents formatted in XBRL: (i) the Consolidated Balance Sheets at June 30, 2016 and December 31, 2015, (ii) the Consolidated Statements of Operations for the three and six months ended June 30, 2016 and 2015, (iii) the Consolidated Statements of Comprehensive Loss for the three and six months ended June 30, 2016 and 2015, (iv) the Consolidated Statements of Shareholders' and Total Equity for the six months ended June 30, 2016, (v) the Consolidated Statements of Cash Flows for the six months ended June 30, 2016 and 2015, and (vi) the Notes to Consolidated Financial Statements.

* Previously filed.
** Furnished herewith.
† Indicates management contract or compensatory plan.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Intrexon Corporation
(Registrant)

Date: August 9, 2016 By: /s/ Rick L. Sterling
Rick L. Sterling
Chief Financial Officer
(Principal Financial and Accounting Officer)