INTREXON CORP
Form 10-Q
November 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 September 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 October 31, 2016, 118,575,964 shares of common stock, no par value per share, were outstanding.

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INTREXON CORPORATION
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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)	September 30, 2016	December 31, 2015
Assets		
Current assets		
Cash and cash equivalents	$ 69,707	$ 135,782
Restricted cash	6,987	—
Short-term investments	166,839	102,528
Receivables		
Trade, net	22,034	25,101
Related parties	16,159	23,597
Notes, net	1,505	601
Other	2,521	2,995
Inventory	21,880	26,563
Prepaid expenses and other	8,591	6,634
Total current assets	316,223	323,801
Long-term investments	44,122	105,447
Equity securities	39,432	83,653
Investment in preferred stock	123,676	—
Property, plant and equipment, net	54,429	42,739
Intangible assets, net	238,581	247,535
Goodwill	159,793	165,169
Investments in affiliates	25,847	9,977
Other assets	3,485	3,725
Total assets	$ 1,005,588	$ 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)	September 30, 2016	December 31, 2015
Liabilities and Total Equity		
Current liabilities		
Accounts payable	$ 7,866	$ 4,967
Accrued compensation and benefits	11,011	19,050
Other accrued liabilities	16,353	7,949
Deferred revenue	54,937	35,366
Lines of credit	549	561
Current portion of long term debt	471	930
Current portion of deferred consideration	8,723	6,931
Related party payables	611	150
Total current liabilities	100,521	75,904
Long term debt, net of current portion	7,950	7,598
Deferred consideration, net of current portion	—	8,698
Deferred revenue, net of current portion	267,460	162,363
Deferred tax liabilities	18,060	21,802
Other long term liabilities	3,177	795
Total liabilities	397,168	277,160
Commitments and contingencies (Note 17)		
Total equity		
Common stock, no par value, 200,000,000 shares authorized as of September 30, 2016 and December 31, 2015; 118,446,717 and 116,658,886 shares issued and outstanding as of September 30, 2016 and December 31, 2015, respectively	—	—
Additional paid-in capital	1,310,979	1,249,559
Accumulated deficit	(685,204)	(542,729)
Accumulated other comprehensive loss	(25,302)	(12,752)
Total Intrexon shareholders' equity	600,473	694,078
Noncontrolling interests	7,947	10,808
Total equity	608,420	704,886
Total liabilities and total equity	$ 1,005,588	$ 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 September 30,		Nine Months Ended September 30,	
	2016	2015	2016	2015
Revenues				
Collaboration and licensing revenues	$30,590	$ 34,726	$82,144	$ 66,690
Product revenues	9,260	9,446	28,699	32,645
Service revenues	8,706	8,945	33,298	32,157
Other revenues	429	250	783	615
Total revenues	48,985	53,367	144,924	132,107
Operating Expenses				
Cost of products	9,156	11,215	29,471	31,654
Cost of services	5,803	5,451	17,807	17,316
Research and development	29,035	21,598	83,266	121,286
Selling, general and administrative	33,812	23,019	106,956	74,320
Total operating expenses	77,806	61,283	237,500	244,576
Operating loss	(28,821)	(7,916)	(92,576)	(112,469)
Other Income (Expense), Net				
Unrealized and realized appreciation (depreciation) in fair value of equity securities	412	(30,453)	(45,388)	64,392
Interest expense	(227)	(310)	(759)	(1,012)
Interest and dividend income	4,494	567	5,817	1,211
Other income (expense), net	(32)	589	1,205	530
Total other income (expense), net	4,647	(29,607)	(39,125)	65,121
Equity in net loss of affiliates	(6,255)	(2,429)	(16,951)	(6,565)
Loss before income taxes	(30,429)	(39,952)	(148,652)	(53,913)
Income tax benefit (expense)	418	923	3,290	(806)
Net loss	$(30,011)	$ (39,029)	$(145,362)	$ (54,719)
Net loss attributable to the noncontrolling interests	1,029	816	2,887	2,940
Net loss attributable to Intrexon	$(28,982)	$ (38,213)	$(142,475)	$ (51,779)
Net loss attributable to Intrexon per share, basic and diluted	$(0.24)	$ (0.34)	$(1.21)	$ (0.47)
Weighted average shares outstanding, basic and diluted	118,346,782	112,244,129	117,785,160	109,244,641

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 September 30,		Nine Months Ended September 30,	
(Amounts in thousands)	2016	2015	2016	2015
Net loss	$(30,011)	$(39,029)	$(145,362)	$(54,719)
Other comprehensive income (loss):				
Unrealized gain (loss) on investments	(151)	230	588	249
Foreign currency translation adjustments	(3,495)	(3,102)	(13,167)	(5,374)
Comprehensive loss	(33,657)	(41,901)	(157,941)	(59,844)
Comprehensive loss attributable to the noncontrolling interests	1,024	778	2,916	2,874
Comprehensive loss attributable to Intrexon	$(32,633)	$(41,123)	$(155,025)	$(56,970)

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	—	—	30,555	—	—	30,555	55	30,610
Exercises of stock options and warrants	1,322,843	—	18,180	—	—	18,180	—	18,180
Shares issued as payment for services	328,648	—	8,284	—	—	8,284	—	8,284
Shares issued in asset acquisition	136,340	—	4,401	—	—	4,401	—	4,401
Net loss	—	—	—	—	(142,475)	(142,475)	(2,887)	(145,362)
Other comprehensive loss	—	—	—	(12,550)	—	(12,550)	(29)	(12,579)
Balances at September 30, 2016	118,446,717	$ —	$1,310,979	$ (25,302)	$ (685,204)	$ 600,473	$ 7,947	$ 608,420

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)

	Nine Months Ended September 30,	
(Amounts in thousands)	2016	2015
Cash flows from operating activities		
Net loss	$(145,362)	$(54,719)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:		
Depreciation and amortization	17,657	12,202
Loss on disposal of property, plant and equipment	297	519
Unrealized and realized (appreciation) depreciation on equity securities	45,388	(64,392)
Noncash dividend income	(3,676)	—
Amortization of discount/premium on investments	862	298
Equity in net loss of affiliates	16,951	6,565
Stock-based compensation expense	30,631	26,524
Shares issued as payment for services	8,284	480
Shares issued as consideration for license agreement	—	59,579
Provision for bad debts	1,609	1,562
Deferred income taxes	(2,967)	374
Other noncash items	1,259	305
Changes in operating assets and liabilities:		
Restricted cash	(6,987)	—
Receivables:		
Trade	2,118	(12,014)
Related parties	7,438	(11,182)
Notes	(42)	1
Other	381	6,390
Inventory	4,683	3,451
Prepaid expenses and other	(985)	(4,005)
Other assets	2,134	(3,817)
Accounts payable	2,901	(3,560)
Accrued compensation and benefits	(8,001)	5,895
Other accrued liabilities	7,771	1,323
Deferred revenue	(14,099)	52,400
Deferred consideration	(630)	(943)
Related party payables	479	(67)
Other long term liabilities	126	168
Net cash provided by (used in) operating activities	(31,780)	23,337

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)

	Nine Months Ended September 30,	
(Amounts in thousands)	2016	2015
Cash flows from investing activities		
Purchases of investments	(75,246)	(181,572)
Maturities of investments	71,987	70,000
Purchases of equity securities and warrants	(2,308)	(17,080)
Acquisitions of businesses, net of cash received	—	(114,480)
Acquisition of noncontrolling interest	—	(1,566)
Investments in affiliates	(9,415)	(4,699)
Cash paid in asset acquisition	(7,244)	—
Purchases of property, plant and equipment	(20,197)	(9,841)
Proceeds from sale of property, plant and equipment	243	420
Issuances of notes receivable	(2,964)	—
Proceeds from notes receivable	—	1,500
Net cash used in investing activities	(45,144)	(257,318)
Cash flows from financing activities		
Proceeds from issuance of shares in public offerings, net of issuance costs	—	328,234
Advances from lines of credit	2,308	13,719
Repayments of advances from lines of credit	(2,320)	(15,517)
Proceeds from long term debt	547	81
Payments of long term debt	(848)	(1,032)
Payments of deferred consideration	(6,705)	(6,252)
Proceeds from stock option exercises	18,180	12,208
Net cash provided by financing activities	11,162	331,441
Effect of exchange rate changes on cash and cash equivalents	(313)	507
Net increase (decrease) in cash and cash equivalents	(66,075)	97,967
Cash and cash equivalents		
Beginning of period	135,782	27,466
End of period	$69,707	$125,433
Supplemental disclosure of cash flow information		
Cash paid during the period for interest	$875	$1,119
Cash paid during the period for income taxes	—	1,165
Significant noncash financing and investing activities		
Note receivable as consideration for collaboration agreement	$—	$5,000
Stock received as consideration for collaboration agreements	18,766	4,667
Preferred stock received as consideration for collaboration amendments	120,000	—
Stock issued in business combinations	—	126,863
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
Deferred consideration payable related to acquisition	—	11,440
Purchases of equipment included in accounts payable and other accrued liabilities	926	533

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.

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.

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.

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.

As of September 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 September 30, 2016 and results of operations and cash flows for the interim periods ended September 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.

Restricted Cash

Restricted cash represents funds deposited with the U.S. Treasury, as required by a court decision resulting from litigation against Trans Ova (Note 17).

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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 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 since the Company does not intend to sell the investment nor expect it to be converted into shares of common stock within one year.

Until such time as the Company converts the instrument into common stock, the Company is entitled to a monthly dividend payable in additional shares of preferred stock and records dividend income based on the fair value of the preferred shares.

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"), one of its collaborators, as of September 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 $6,171 and $16,601 as of September 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 September 30, 2016 and December 31, 2015, respectively. Unrealized appreciation (depreciation) in the fair value of these securities was $(455) and $2,404 for the three months ended September 30, 2016 and 2015, respectively, and $(11,597) and $6,283 for the nine months ended September 30, 2016 and 2015, respectively.

Summarized unaudited financial data as of September 30, 2016 and December 31, 2015 and for the three and nine months ended September 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 through June 30, 2015 for the nine months ended September 30, 2015 as the Company determined it had significant influence over ZIOPHARM until the Company distributed its investment in ZIOPHARM to shareholders in June 2015.

	September 30, 2016	December 31, 2015
Current assets	$ 81,049	$ 28,123
Non-current assets	10,992	1,539
Total assets	92,041	29,662
Current liabilities	8,325	6,274
Net assets	$ 83,716	$ 23,388

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2015	2016	2015
Revenues	$65	$330	$394	$1,480
Operating expenses	18,363	8,687	50,406	118,180
Operating loss	(18,298)	(8,357)	(50,012)	(116,700)
Other	75	(34)	1,502	(31)

Net loss	$(18,223)	$(8,391)	$(48,510)	$(116,731)

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Variable Interest Entities

As of September 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 VIEs. The Company's aggregate investment balances of these VIEs as of September 30, 2016 and December 31, 2015 was $145,786 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 September 30, 2016 and December 31, 2015, the Company had $11,331 and $3,877, respectively, of long-lived assets in foreign countries. The Company recognized revenues derived in foreign countries totaling $3,502 and $1,183 for the three months ended September 30, 2016 and 2015, respectively, and $8,678 and $3,446 for the nine months ended September 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 August 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2016-15, Statement of Cash Flows (Topic 230) - Classification of Certain Cash Receipts and Cash Payments ("ASU 2016-15"). The provisions of ASU 2016-15 address eight specific cash flow issues and how those certain cash receipts and cash payments are presented and classified in the statement of cash flows under Topic 230, Statement of Cash Flows, and other Topics. The guidance is effective for annual periods and interim periods within those annual periods beginning after December 15, 2017, with early adoption permitted, 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 March 2016, the FASB issued 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,

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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 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.

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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 consideration as of September 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, of which $1,644 are included in selling, general and administrative expenses in the accompanying consolidated statements of operations for three and nine months ended September 30, 2015.

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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.

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 $267 are included in selling, general and administrative expenses in the accompanying consolidated statement of operations for the nine months ended September 30, 2015.

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 nine months ended September 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 nine months ended September 30, 2015 is presented as if the acquisitions had been consummated on January 1, 2014:

	Three Months Ended September 30, 2015	Nine Months Ended September 30, 2015
	Pro Forma	
Revenues	$53,754	$133,060
Loss before income taxes	(43,979)	(66,686)
Net loss	(43,057)	(66,319)
Net loss attributable to the noncontrolling interests	816	2,940
Net loss attributable to Intrexon	(42,241)	(63,379)

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. As of September 30, 2016, the Company's remaining commitment was $3,650. 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.

The Company's investment in Intrexon T1D Partners was $1,078 as of September 30, 2016 and is included in investments in affiliates in the accompanying consolidated balance sheet.

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.

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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. 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 $3,839 as of September 30, 2016. New EnviroFlight met a regulatory milestone, as defined in the asset purchase agreement, and the members of Old EnviroFlight received a portion of the contingent consideration consisting of 59,337 shares of the Company's common stock valued at $1,583 in October 2016. The members of Old EnviroFlight may receive up to $4,000 of additional shares of the Company's common stock if certain commercial milestones are met prior to February 2019.

The Company's investment in New EnviroFlight was $4,611 as of September 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 $1,591 and $2,000 as of September 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 September 30, 2016, the Company's remaining commitment was $12,367. 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 $(627) and $(1,270) as of September 30, 2016 and December 31, 2015, respectively, and is included in other accrued liabilities in the accompanying consolidated balance sheets.

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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 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 $435 and $(144) as of September 30, 2016 and December 31, 2015, respectively, and is included in investments in affiliates and other accrued liabilities, respectively, 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. In 2015, both the Company and Sun Pharmaceutical Subsidiary 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 $3,737 and $6,379 as of September 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 nine months ended September 30, 2016 and 2015.

	Three Months Ended September 30, 2016		
	Revenue Recognized From		
	Upfront and Milestone Payments	Research and Development Services	Total
ZIOPHARM Oncology, Inc.	$4,843	$ 5,586	$10,429
Oragenics, Inc.	262	294	556
Fibrocell Science, Inc.	604	563	1,167
Genopaver, LLC	68	1,625	1,693
S & I Ophthalmic, LLC	—	2,782	2,782
OvaXon, LLC	—	709	709
Intrexon Energy Partners, LLC	625	4,230	4,855
Persea Bio, LLC	125	208	333
Ares Trading S.A.	1,597	719	2,316
Thrive Agrobiotics, Inc.	46	379	425
Intrexon Energy Partners II, LLC	500	372	872
Exotech Bio, Inc.	139	82	221
Relieve Genetics, Inc.	120	342	462
Intrexon T1D Partners, LLC	276	511	787
AD Skincare, Inc.	120	65	185
Other	895	1,903	2,798
Total	$10,220	$ 20,370	$30,590

	Three Months Ended September 30, 2015		
	Revenue Recognized From		
	Upfront and Milestone Payments	Research and Development Services	Total
ZIOPHARM Oncology, Inc.	$645	$ 4,006	$4,651
Oragenics, Inc.	4,868	332	5,200
Fibrocell Science, Inc.	4,823	1,317	6,140
Genopaver, LLC	68	993	1,061
S & I Ophthalmic, LLC	—	1,193	1,193
OvaXon, LLC	—	549	549
Intrexon Energy Partners, LLC	625	3,185	3,810
Persea Bio, LLC	125	297	422

Ares Trading S.A.	1,597	260	1,857
Other	7,841	2,002	9,843
Total	$20,592	$ 14,134	$34,726

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	Nine Months Ended September 30, 2016		
	Revenue Recognized From		
	Upfront and Milestone Payments	Research and Development Services	Total
ZIOPHARM Oncology, Inc.	$6,687	$ 17,693	$24,380
Oragenics, Inc.	786	1,083	1,869
Fibrocell Science, Inc.	1,814	2,604	4,418
Genopaver, LLC	205	4,703	4,908
S & I Ophthalmic, LLC	—	6,326	6,326
OvaXon, LLC	—	2,211	2,211
Intrexon Energy Partners, LLC	1,875	11,180	13,055
Persea Bio, LLC	375	613	988
Ares Trading S.A.	4,791	2,148	6,939
Thrive Agrobiotics, Inc.	138	1,171	1,309
Intrexon Energy Partners II, LLC	1,500	816	2,316
Exotech Bio, Inc.	278	82	360
Relieve Genetics, Inc.	240	572	812
Intrexon T1D Partners, LLC	554	543	1,097
AD Skincare, Inc.	120	65	185
Other	4,684	6,287	10,971
Total	$24,047	$ 58,097	$82,144

	Nine Months Ended September 30, 2015		
	Revenue Recognized From		
	Upfront and Milestone Payments	Research and Development Services	Total
ZIOPHARM Oncology, Inc.	$1,933	$ 11,769	$13,702
Oragenics, Inc.	5,437	408	5,845
Fibrocell Science, Inc.	5,719	4,500	10,219
Genopaver, LLC	205	2,460	2,665
S & I Ophthalmic, LLC	—	2,838	2,838
OvaXon, LLC	—	1,855	1,855
Intrexon Energy Partners, LLC	1,875	8,101	9,976
Persea Bio, LLC	375	553	928
Ares Trading S.A.	2,336	260	2,596
Other	9,446	6,620	16,066
Total	$27,326	$ 39,364	$66,690

Except for the agreements discussed below, there have been no significant changes to arrangements with our collaborators and licensees in the nine months ended September 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

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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 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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Genten Therapeutics Collaboration

In September 2016, the Company entered into an ECC with Genten Therapeutics, Inc. ("Genten Therapeutics"), an affiliate of Harvest and a related party. Genten Therapeutics was formed for the purpose of entering into the ECC and developing and commercializing products using the Company's technology for expression of gluten peptides, alone or in combination with immunomodulatory cytokines, to reestablish immune tolerance for patients with celiac disease. Upon execution of the ECC, the Company received a technology access fee in the form of a $1,500 cash payment and equity in Genten Therapeutics valued at $3,000 as upfront consideration. The Company is entitled to receive additional equity interests in Genten Therapeutics upon the first instance of the achievement of a certain non-substantive development milestone. The Company is also entitled to up to $82,000 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. Genten Therapeutics 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. Genten Therapeutics is responsible for the development and commercialization of the product candidates. The term of the ECC commenced in September 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 Genten Therapeutics upon 90 days written notice to the Company.

CRS Bio Collaboration

In September 2016, the Company entered into an ECC with CRS Bio, Inc. ("CRS Bio"), an affiliate of Harvest and a related party. CRS Bio was formed for the purpose of entering into the ECC and developing and commercializing products through targeted delivery of antibodies for treatment of chronic rhinosinusitis with and without nasal polyps, by utilizing the Company's technology to block inflammatory mediators in the nasal passage, leading to improved breathing and, importantly, patients' quality of life. Upon execution of the ECC, the Company received a technology access fee in the form of equity in CRS Bio valued at $2,100. The Company is entitled to receive additional equity interests in CRS Bio upon the first instance of the achievement of a certain non-substantive development milestone. The Company is also entitled to up to $75,000 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. CRS 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. CRS Bio is responsible for the development and commercialization of the product candidates. The term of the ECC commenced in September 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 CRS Bio upon 90 days written notice to the Company.

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:

	September 30, 2016	December 31, 2015
Upfront and milestone payments	$ 309,126	$ 181,331
Prepaid research and development services	7,057	10,938
Prepaid product and service revenues	5,594	4,759
Other	620	701
Total	$ 322,397	$ 197,729
Current portion of deferred revenue	$ 54,937	$ 35,366
Long-term portion of deferred revenue	267,460	162,363
Total	$ 322,397	$ 197,729

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

	September 30, 2016	December 31, 2015
ZIOPHARM Oncology, Inc.	$ 143,651	$ 30,338
Oragenics, Inc.	8,027	8,813
Fibrocell Science, Inc.	19,631	21,445
Genopaver, LLC	2,045	2,250
Intrexon Energy Partners, LLC	18,750	20,625
Persea Bio, LLC	4,125	4,500
Ares Trading S.A.	48,776	53,567
Thrive Agrobiotics, Inc.	1,483	1,621
Intrexon Energy Partners II, LLC	16,333	17,833
Exotech Bio, Inc.	4,722	—
Relieve Genetics, Inc.	4,093	—
Intrexon T1D Partners, LLC	9,383	—
AD Skincare, Inc.	4,213	—
Genten Therapeutics, Inc.	4,523	—
CRS Bio, Inc.	2,111	—
Other	17,260	20,339
Total	$ 309,126	$ 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 September 30, 2016:

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Aggregate Fair Value
U.S. government debt securities	$ 210,620	$ 79	$ (10)	$ 210,689
Certificates of deposit	272	—	—	272
Total	$ 210,892	$ 79	$ (10)	$ 210,961

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.

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

Due within one year	$166,839
After one year through two years	44,122
Total	$210,961

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 September 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 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 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

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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. There have been no significant changes in the fair value of the Preferred Shares during the three months ended September 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. The fair value of the Company's investment in preferred stock, including additional Preferred Shares received as dividends, is $123,676 as of September 30, 2016. During the three and nine months ended September 30, 2016, the Company received 3,063 shares of additional Preferred Shares and recognized $3,676 of dividend income in the accompanying consolidated statements of operations. The only change in the Level 3 investment during the three months ended September 30, 2016 was this receipt of additional Preferred Shares arising from the dividend.

8. Fair Value Measurements

The carrying amount of cash and cash equivalents, restricted cash, 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 September 30, 2016:

	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	September 30, 2016
Assets				
U.S. government debt securities	$—	$ 210,689	$ —	$ 210,689
Equity securities	31,245	8,187	—	39,432
Preferred stock	—	—	123,676	123,676
Other	—	2,296	—	2,296
Total	$ 31,245	$ 221,172	$ 123,676	$ 376,093

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

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 nine months ended September 30, 2016.

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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 $3,839 at September 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) whereby 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. The fair value of this liability increased $179 during the three months ended September 30, 2016 (Note 4). Financial liabilities measured on a recurring basis were not significant at December 31, 2015.

9. Inventory

Inventory consists of the following:

	September 30, 2016	December 31, 2015
Supplies, semen and embryos	$ 1,278	$ 1,402
Work in process	5,831	6,290
Livestock	12,588	16,907
Feed	2,183	1,964
Total inventory	$ 21,880	$ 26,563

10. Property, Plant and Equipment, Net

Property, plant and equipment consist of the following:

	September 30, 2016	December 31, 2015
Land and land improvements	$ 11,276	$ 9,119
Buildings and building improvements	7,965	7,520
Furniture and fixtures	1,234	1,283
Equipment	41,343	36,016
Leasehold improvements	10,479	6,888
Computer hardware and software	6,912	5,960
Construction and other assets in progress	7,523	2,193
	86,732	68,979
Less: Accumulated depreciation and amortization	(32,303)	(26,240)
Property, plant and equipment, net	$ 54,429	$ 42,739

Depreciation expense was $2,332 and $1,987 for the three months ended September 30, 2016 and 2015, respectively, and $6,769 and $5,768 for the nine months ended September 30, 2016 and 2015, respectively.

11. Goodwill and Intangible Assets, Net

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

Balance at December 31, 2015	$165,169
Foreign currency translation adjustments	(5,376)
Balance at September 30, 2016	$159,793

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

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

	Weighted Average Useful Life (Years)	Gross Carrying Amount	Accumulated Amortization	Net
Patents, related technologies and know-how	15.3	$170,520	$ (26,596)	$143,924
Customer relationships	6.5	10,700	(4,189)	6,511
Trademarks	9.3	6,800	(1,598)	5,202
Covenant not to compete	2.0	395	(312)	83
In-process research and development		82,861	—	82,861
Total		$271,276	$ (32,695)	$238,581

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 September 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 $3,651 and $2,857 for the three months ended September 30, 2016 and 2015, respectively, and $10,888 and $6,434 for the nine months ended September 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 3.48% at September 30, 2016. As of September 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 September 30, 2016.

Exemplar has a $700 revolving line of credit with American State Bank which matures on October 30, 2017. The line of credit bears interest at 4.50% per annum. As of September 30, 2016, there was an outstanding balance of $549.

Long Term Debt

Long term debt consists of the following:

	September 30, 2016	December 31, 2015
Notes payable	$ 5,769	$ 6,477
Royalty-based financing	2,003	1,807
Other	649	244
Long term debt	8,421	8,528
Less current portion	471	930
Long term debt, less current portion	$ 7,950	$ 7,598

Trans Ova has a note payable to American State Bank which matures in April 2033 and has an outstanding principal balance of $5,338 as of September 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 $431 as of September 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.

In August 2016, AquaBounty obtained a loan from Finance PEI ("FPEI"), a Canadian government-owned corporation. As of September 30, 2016 there was an outstanding balance of $543. AquaBounty pays monthly installments of $4, which includes interest of 4.00%, with a balloon payment due in July 2021. The loan is collateralized by certain of AquaBounty's assets.

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 $2,185, 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 $2,003 as of September 30, 2016.

Future maturities of long term debt are as follows:

2016	$168
2017	404
2018	549
2019	364
2020	335
2021	774
Thereafter	3,824
Total	$6,418

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 nine months ended September 30, 2016, the Company had U.S. taxable income of

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approximately $8,334 and U.S. taxable loss of approximately $9,346, respectively, for which no income tax benefit was recognized. For the three and nine months ended September 30, 2016, the Company recognized $110 and $323 of current foreign income tax benefit, respectively. For the three months ended September 30, 2015, the Company had U.S. taxable loss of approximately $15,865, which resulted in an income tax benefit of $318. For the nine months ended September 30, 2015, the Company had U.S. taxable income of approximately $22,935, which resulted in $459 of current income tax expense due to the corporate alternative minimum tax. For the three and nine months ended September 30, 2015, the Company recognized $27 of current foreign income tax benefit. For the three and nine months ended September 30, 2016, the Company recorded deferred tax benefit of $308 and $2,967, respectively. For the three and nine months ended September 30, 2015, the Company recorded deferred tax benefit of $578 and deferred tax expense of $374, respectively. The Company's net deferred tax assets, excluding certain deferred tax liabilities totaling $18,060, 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 September 30, 2016, the Company has loss carryforwards for U.S. federal income tax purposes of approximately $257,700 available to offset future taxable income and federal and state research and development tax credits of approximately $7,060, 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 $54,400 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 $120,600, 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:

	September 30, 2016	December 31, 2015
Unrealized gain (loss) on investments	$ 69	$ (519)
Foreign currency translation adjustments	(25,371)	(12,233)
Total accumulated other comprehensive loss	$ (25,302)	$ (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 September 30,		Nine Months Ended September 30,	
	2016	2015	2016	2015
Cost of products	$21	$21	$61	$76
Cost of services	68	98	206	301
Research and development	2,236	2,234	6,979	6,141
Selling, general and administrative	8,467	6,032	23,385	20,006
Total	$10,792	$8,385	$30,631	$26,524

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 September 30, 2016, there were 570,977 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 September 30, 2016, there were 16,000,000 shares authorized for issuance under the 2013 Plan, of which 10,532,430 stock options were outstanding and 3,982,064 shares were available for grant.

As of September 30, 2016, an additional 1,000,000 options were issued and outstanding outside the 2008 Plan and 2013 Plan. These options were awarded as an inducement grant to an executive officer in accordance with New York Stock Exchange Rule 303A.08 and are generally subject to the same terms and conditions as awards granted under the 2013 Plan.

Stock option activity 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	4,384,860	29.42	
Exercised	(1,162,843)	(15.63)	
Forfeited	(2,127,334)	(43.29)	
Expired	(34,804)	(35.76)	
Balances at September 30, 2016	12,103,407	31.24	8.50
Exercisable at September 30, 2016	3,369,252	27.99	7.25
Vested and Expected to Vest at September 30, 2016(1)	10,177,058	30.99	8.37

(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 September 30, 2016 and December 31, 2015 were $106,649 and $113,655, respectively, and are expected to be recognized over a weighted-average period of approximately three years.

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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. In October 2016, the independent members of Intrexon's Board of Directors, with the recommendation of the Compensation Committee of the Board of Directors, approved a new Restricted Stock Unit Agreement for the CEO providing for a term of two months. The new RSU Agreement, which will expire on December 31, 2016, provides for the same monthly salary payable in fully vested shares of common stock pursuant to the same terms as the original RSU Agreement. 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 $1,397 for the three and nine months ended September 30, 2016, respectively.

Other Plans

As of September 30, 2016, there were 5,567,000 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 5,321,598 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 September 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 nine months ended September 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.

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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 September 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	$705
2017	6,362
2018	5,695
2019	5,434
2020	5,487
2021	4,888
Thereafter	20,179
Total	$48,750

Rent expense, including other facility expenses, was $2,075 and $2,167 for the three months ended September 30, 2016 and 2015, respectively, and $6,410 and $6,548 for the nine months ended September 30, 2016 and 2015, respectively.

The Company maintains subleases for certain of its facilities. Rental income under sublease agreements was $184 and $334 for the three months ended September 30, 2016 and 2015, respectively, and $854 and $1,153 for the nine months ended September 30, 2016 and 2015, respectively. Future rental income is expected to be $9 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 ("XY") alleging that certain of Trans Ova's activities breach a licensing agreement and infringe on patents that XY 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 and Trans Ova had each breached the licensing agreement and that Trans Ova had infringed the intellectual property of XY. 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 in the amount of $6,066, each with prejudgment interest. The order provides for the continuation of Trans Ova's license to XY's technology, subject to an ongoing royalty for Trans Ova which is subject to a post-judgment motion, including XY's motion for enhanced damages, and potential appeals therefrom. Since the inception of the license, Trans Ova has remitted payments to XY 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. For the nine months ended September 30, 2016, the Company recorded litigation 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, including prejudgment interest, over the liability previously recorded by Trans Ova for uncashed checks previously remitted to XY. In August 2016, Trans Ova deposited the net damages amount, including prejudgment interest, into the court's treasury, to be held until the appeals process is complete and final judgment amounts are determined. As of September 30, 2016, this amount is included in restricted cash on the accompanying consolidated balance sheet. 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 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'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"). In

July 2016, the court consolidated the lawsuits and appointed a lead plaintiff. The consolidated amended complaint names as defendants Intrexon and certain of Intrexon's current and former officers (the "Defendants"). It alleges, among other things, that the Defendants made materially false and/or misleading statements during the Class Period with respect to the Company's business, operations, and prospects in violation of Section 10(b) of the Securities Exchange Act of 1934, as amended. The plaintiffs' claims are based

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upon allegations in 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. The Company intends to defend the lawsuit vigorously; however, there can be no assurance regarding the ultimate outcome of this case.

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 CEO, and Third Security, and naming the Company as a nominal defendant. 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. The action has been stayed pending the report of the Special Litigation Committee.

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 September 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, the independent members of Intrexon's Board of Directors, with the recommendation of the Audit Committee of the 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 had 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. In October 2016, the independent members of Intrexon's Board of Directors, with the recommendation of the Audit Committee of the Board of Directors, approved the extension of the Services Agreement through December 2016. For the three and nine months ended September 30, 2016, the Company issued 89,326 shares and 254,496 shares, respectively, with values of $2,132 and $6,542, 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 $156 and $142 for the three months ended September 30, 2016 and 2015, respectively, and $301 and $294 for the nine months ended September 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.

In September 2016, Fibrocell Science, Inc. ("Fibrocell"), one of the Company's collaborators, sold promissory notes convertible into shares of Fibrocell common stock ("convertible note") and warrants to purchase shares of Fibrocell common stock to certain institutional and accredited investors, including the Company and affiliates of Third Security. The Company paid $2,604 for a convertible note and warrants. As of September 30, 2016, the value of the convertible note and warrants totaled $1,990 and is included in other assets on the accompanying consolidated balance sheet.

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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 June 2016, the Company purchased 2,261,419 shares of Oragenics common stock at $0.52 per share.

The Company recognized $26,688 and $31,740 of collaboration revenues from related parties in the three months ended September 30, 2016 and 2015, respectively, and $70,299 and $59,775 in the nine months ended September 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 $1,871 for the three and nine months ended September 30, 2016, respectively, and totaled $697 for the three and nine months ended September 30, 2015.

19. Net Loss per Share

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

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2015	2016	2015
Historical net loss per share:				
Numerator:				
Net loss attributable to Intrexon	$(28,982)	$(38,213)	$(142,475)	$(51,779)
Denominator:				
Weighted average shares outstanding, basic and diluted	118,346,782	112,244,129	117,785,160	109,244,641
Net loss attributable to Intrexon per share, basic and diluted	$(0.24)	$(0.34)	$(1.21)	$(0.47)

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

	September 30,	
	2016	2015
Options	12,103,407	10,660,040
Warrants	30,191	194,719
Total	12,133,598	10,854,759

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20. Subsequent Events

In November 2016, the Company entered into a stock purchase agreement with AquaBounty pursuant to which the Company will purchase 72,632,190 shares of AquaBounty's common stock for $25,000 subject to AquaBounty's common stock being approved for listing on the NASDAQ Capital Market ("NASDAQ") and other closing conditions as defined in the agreement. In November 2016, AquaBounty filed a Form 10 registration statement with the Securities and Exchange Commission as an initial step towards the listing of its common stock. The Company anticipates converting up to $10,000 of convertible promissory notes, plus accrued interest thereon, into shares of AquaBounty common stock in conjunction with these transactions. The Company also announced its intent to distribute a portion of its previously held shares of AquaBounty common stock to shareholders of Intrexon as a special stock dividend once AquaBounty shares are available to trade on NASDAQ. The number of shares to be distributed by the Company is subject to final determination and approval by the Board of Directors of the Company. After consideration of all transactions contemplated herein, the Company expects to continue to be the majority owner of AquaBounty.

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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 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.

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

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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 nine months ended September 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 nine months ended September 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 September 30,		Nine Months Ended September 30,	
	2016	2015	2016	2015
	(In thousands)			
Expansion or improvement of our platform technologies	$3,014	$3,641	$8,881	$72,168
Specific applications of our technologies in support of current and prospective collaborators and licensees	17,004	10,608	47,171	28,686
Expansion or improvement of our product and service offerings	4,245	2,595	13,012	6,410
Other	4,772	4,754	14,202	14,022
Total research and development expenses	$29,035	$21,598	$83,266	$121,286

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 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

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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.

Dividend income consists of the monthly preferred stock dividend received from ZIOPHARM.

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 September 30, 2016 and the three months ended September 30, 2015

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

	Three Months Ended September 30,		Dollar Change	Percent Change
	2016	2015		
	(In thousands)			
Revenues				
Collaboration and licensing revenues	$30,590	$34,726	$(4,136)	(11.9)%
Product revenues	9,260	9,446	(186)	(2.0)%
Service revenues	8,706	8,945	(239)	(2.7)%
Other revenues	429	250	179	71.6 %
Total revenues	48,985	53,367	(4,382)	(8.2)%
Operating expenses				
Cost of products	9,156	11,215	(2,059)	(18.4)%
Cost of services	5,803	5,451	352	6.5 %
Research and development	29,035	21,598	7,437	34.4 %
Selling, general and administrative	33,812	23,019	10,793	46.9 %
Total operating expenses	77,806	61,283	16,523	27.0 %
Operating loss	(28,821)	(7,916)	(20,905)	>200%
Total other income (expense), net	4,647	(29,607)	34,254	115.7 %
Equity in loss of affiliates	(6,255)	(2,429)	(3,826)	157.5 %
Loss before income taxes	(30,429)	(39,952)	9,523	(23.8)%
Income tax benefit	418	923	(505)	(54.7)%
Net loss	(30,011)	(39,029)	9,018	(23.1)%
Net loss attributable to noncontrolling interests	1,029	816	213	26.1 %
Net loss attributable to Intrexon	$(28,982)	$(38,213)	$9,231	(24.2)%

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Collaboration and licensing revenues

The following table shows the collaboration and licensing revenue for the three months ended September 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 September 30,		Dollar Change
	2016	2015	
	(In thousands)		
ZIOPHARM Oncology, Inc.	$10,429	$4,651	$5,778
Oragenics, Inc.	556	5,200	(4,644)
Fibrocell Science, Inc.	1,167	6,140	(4,973)
Genopaver, LLC	1,693	1,061	632
S & I Ophthalmic, LLC	2,782	1,193	1,589
OvaXon, LLC	709	549	160
Intrexon Energy Partners, LLC	4,855	3,810	1,045
Persea Bio, LLC	333	422	(89)
Ares Trading S.A.	2,316	1,857	459
Thrive Agrobiotics, Inc.	425	—	425
Intrexon Energy Partners II, LLC	872	—	872
Exotech Bio, Inc.	221	—	221
Relieve Genetics, Inc.	462	—	462
Intrexon T1D Partners, LLC	787	—	787
AD Skincare, Inc.	185	—	185
Other	2,798	9,843	(7,045)
Total	$30,590	$34,726	$(4,136)

Collaboration and licensing revenues decreased $4.1 million from the three months ended September 30, 2015 due to the recognition in 2015 of previously deferred revenue related to collaboration agreements for which we satisfied all of our obligations or which were terminated during the three months ended September 30, 2015. This decrease is offset by (i) the recognition of deferred revenue for upfront payments received from collaborations signed by us between October 1, 2015 and September 30, 2016 and the recognition of the payment received in June 2016 from ZIOPHARM to amend our collaborations; 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 our joint ventures with S & I Ophthalmic, LLC, or S & I Ophthalmic, and Intrexon Energy Partners, LLC, or Intrexon Energy Partners.

Product revenues and gross margin

Product revenues were $9.3 million for the three months ended September 30, 2016 compared to $9.4 million for the three months ended September 30, 2015, a decrease of $0.1 million, or 2 percent. Gross margin on products improved in the current period primarily due to a decline in the average cost of cows.

Service revenues and gross margin

Service revenues were $8.7 million for the three months ended September 30, 2016 compared to $8.9 million for the three months ended September 30, 2015, a decrease of $0.2 million, or 3 percent. Gross margin on services decreased in the current period primarily due to an increase in service related costs in the current period driven by increased headcount to support future revenue growth.

Research and development expenses

Research and development expenses increased $7.4 million, or 34 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)

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depreciation and amortization. Salaries, benefits and other personnel costs increased $2.1 million due to (i) an increase in research and development headcount to support new and expanded collaborations and (ii) a full period of costs for research and development employees assumed in our acquisition of Oxitec Limited, or Oxitec, in September 2015. Lab supplies and consulting expenses increased $3.9 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) a full period of costs incurred as a result of our September 2015 acquisition of Oxitec. Depreciation and amortization increased $0.9 million primarily as a result of (i) the inclusion of a full period of depreciation and amortization on property, equipment and intangible assets acquired in our 2015 acquisitions, (ii) amortization of developed technology acquired from Old EnviroFlight in February 2016; and (iii) amortization related to the intangible assets of AquaBounty Technologies, Inc., or AquaBounty, upon regulatory approval in November 2015.

Selling, general and administrative expenses

SG&A expenses increased $10.8 million, or 47 percent, over the three months ended September 30, 2015. Legal and professional expenses increased $4.5 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 to defend ongoing litigation; and (iv) incremental costs incurred to support the ongoing operations of our 2015 acquisitions. Salaries, benefits and other personnel costs increased $5.3 million due to increased headcount, including the hiring of two new executive officers and additional business development professionals, to support our expanding operations, as well as our acquisition of Oxitec in September 2015.

Total other income (expense), net

Total other income (expense), net, was $4.6 million for the three months ended September 30, 2016 compared to $(29.6) million for the three months ended September 30, 2015, an increase of $34.2 million or 116 percent. This increase was primarily attributable to changes in the value of our equity securities portfolio and dividend income from our investment in preferred stock.

Equity in net loss of affiliates

Equity in net loss of affiliates for the three months ended September 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 $3.8 million increase is due to the addition of our new joint ventures entered into subsequent to October 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 nine months ended September 30, 2016 and the nine months ended September 30, 2015

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

	Nine Months Ended September 30,		Dollar Change	Percent Change
	2016	2015		
	(In thousands)			
Revenues				
Collaboration and licensing revenues	$82,144	$66,690	$15,454	23.2 %
Product revenues	28,699	32,645	(3,946)	(12.1)%
Service revenues	33,298	32,157	1,141	3.5 %
Other revenues	783	615	168	27.3 %
Total revenues	144,924	132,107	12,817	9.7 %
Operating expenses				
Cost of products	29,471	31,654	(2,183)	(6.9)%
Cost of services	17,807	17,316	491	2.8 %
Research and development	83,266	121,286	(38,020)	(31.3)%
Selling, general and administrative	106,956	74,320	32,636	43.9 %
Total operating expenses	237,500	244,576	(7,076)	(2.9)%
Operating loss	(92,576)	(112,469)	19,893	(17.7)%
Total other income (expense), net	(39,125)	65,121	(104,246)	(160.1)%
Equity in loss of affiliates	(16,951)	(6,565)	(10,386)	158.2 %
Loss before income taxes	(148,652)	(53,913)	(94,739)	175.7 %
Income tax benefit (expense)	3,290	(806)	4,096	>200%
Net loss	(145,362)	(54,719)	(90,643)	165.7 %
Net loss attributable to noncontrolling interests	2,887	2,940	(53)	(1.8)%
Net loss attributable to Intrexon	$(142,475)	$(51,779)	$(90,696)	175.2 %

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Collaboration and licensing revenues

The following table shows the collaboration and licensing revenue for the nine months ended September 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.

	Nine Months Ended September 30,		Dollar Change
	2016	2015	
	(In thousands)		
ZIOPHARM Oncology, Inc.	$24,380	$13,702	$10,678
Oragenics, Inc.	1,869	5,845	(3,976)
Fibrocell Science, Inc.	4,418	10,219	(5,801)
Genopaver, LLC	4,908	2,665	2,243
S & I Ophthalmic, LLC	6,326	2,838	3,488
OvaXon, LLC	2,211	1,855	356
Intrexon Energy Partners, LLC	13,055	9,976	3,079
Persea Bio, LLC	988	928	60
Ares Trading S.A.	6,939	2,596	4,343
Thrive Agrobiotics, Inc.	1,309	—	1,309
Intrexon Energy Partners II, LLC	2,316	—	2,316
Exotech Bio, Inc.	360	—	360
Relieve Genetics, Inc.	812	—	812
Intrexon T1D Partners, LLC	1,097	—	1,097
AD Skincare, Inc.	185	—	185
Other	10,971	16,066	(5,095)
Total	$82,144	$66,690	$15,454

Collaboration and licensing revenues increased $15.5 million over the nine months ended September 30, 2015 primarily due to (i) the recognition of deferred revenue for upfront payments received from collaborations signed by us between October 1, 2015 and September 30, 2016, including the payment received in June 2016 from ZIOPHARM to amend the collaborations between us; 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, ARES Trading S.A., and our joint ventures with S & I Ophthalmic and Intrexon Energy Partners. This increase is partially offset by the recognition in 2015 of previously deferred revenue related to collaboration agreements for which we satisfied all of our obligations or which were terminated during 2015.

Product revenues and gross margin

Product revenues were $28.7 million for the nine months ended September 30, 2016 compared to $32.6 million for the nine months ended September 30, 2015, a decrease of $3.9 million, or 12 percent. The decrease in product revenues primarily relates to a decrease in quantities sold of livestock previously used in production and live calves sold due to lower customer demand. These decreases were partially offset by an increase in the quantity of weaned calves sold due to higher customer demand. Gross margin on products decreased due to a decline in the average sales prices of livestock previously used in production and also of live calves, and is partially offset by an increase in gross margin on sales of pregnant cows due to a decline in the average cost of cows.

Service revenues and gross margin

Service revenues were $33.3 million for the nine months ended September 30, 2016 compared to $32.2 million for the nine months ended September 30, 2015, an increase of $1.1 million, or 4 percent. The increase relates to an increase in the number of in vitro fertilization cycles performed due to higher customer demand. Gross margin on services was consistent period over period.

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Research and development expenses

Research and development expenses declined $38.0 million, or 31 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 $6.7 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 $10.1 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 $4.7 million primarily as a result of (i) inclusion of a full period of depreciation and amortization on property, equipment and intangible assets acquired in our 2015 acquisitions and (ii) amortization related to AquaBounty's intangible assets which commenced upon regulatory approval in November 2015.

Selling, general and administrative expenses

SG&A expenses increased $32.6 million, or 44 percent, over the nine months ended September 30, 2015. Salaries, benefits and other personnel costs for SG&A employees increased $9.2 million due to (i) increased headcount, including the hiring of two new executive officers and additional business development professionals, to support our expanding operations; (ii) non-cash compensation paid to our Chief Executive Officer, or CEO, pursuant to the compensation agreement entered into in November 2015; (iii) a full period of stock compensation expense for officers hired in 2015; and (iv) salaries, benefits and other personnel costs for employees assumed in our acquisition of Oxitec in September 2015. These increases were partially offset by a decrease in stock compensation and other compensation expenses resulting primarily from the departure of certain officers of the Company in 2016. Legal and professional expenses increased $13.9 million primarily 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 for trial and post-trial activities for our litigation with XY, LLC, or XY, 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 expenses arising from the entrance of a court order in our trial with XY.

Total other income (expense), net

Total other income (expense), net, was $(39.1) million for the nine months ended September 30, 2016 compared to $65.1 million for the nine months ended September 30, 2015, a decrease of $104.2 million or 160 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 nine months ended September 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 $10.4 million increase is due to the addition of our new joint ventures entered into subsequent to October 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 September 30, 2016, we had an accumulated deficit of $685.2 million. From our inception through September 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 September 30, 2016, we had cash and cash equivalents of $69.7 million and short-term and long-term investments of $211.0 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:

	Nine Months Ended September 30,	
	2016	2015
	(In thousands)	
Net cash provided by (used in):		
Operating activities	$(31,780)	$23,337
Investing activities	(45,144)	(257,318)
Financing activities	11,162	331,441
Effect of exchange rate changes on cash and cash equivalents	(313)	507
Net increase (decrease) in cash and cash equivalents	$(66,075)	$97,967

Cash flows from operating activities:

Net cash used in operating activities was $31.8 million for the nine months ended September 30, 2016 compared to net cash provided by operations of $23.3 million for the nine months ended September 30, 2015. During the nine months ended September 30, 2016, we received a $10.0 million technology access fee pursuant to a new collaboration. Our net loss of $145.4 million, after deduction of significant noncash items of (i) $45.4 million of noncash unrealized losses on our equity securities, (ii) $30.6 million of stock-based compensation expense, (iii) $17.7 million of depreciation and amortization expense, (iv) $8.3 million of shares issued as payment for services, and (v) $17.0 million of equity in net loss of affiliates, was $26.4 million. Net cash provided by operating activities was $23.3 million for the nine months ended September 30, 2015. During the nine months ended September 30, 2015, we received a $115.0 million technology access fee, of which $57.5 million was paid to ZIOPHARM, from our license and collaboration agreement with Ares Trading. Our net loss of $54.7 million, after deduction of significant noncash items of (i) $64.4 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, (iii) $26.5 million of stock-based compensation expense, and (iv) $12.2 million of depreciation and amortization expense, was $20.8 million.

Cash flows from investing activities:

Net cash used in investing activities was $45.1 million for the nine months ended September 30, 2016 compared to $257.3 million for the nine months ended September 30, 2015. During the nine months ended September 30, 2016, we purchased $20.2 million of property, plant and equipment, advanced $9.4 million to our joint ventures, paid $7.2 million to acquire the assets of Old EnviroFlight, and purchased $3.3 million of net short-term and long-term investments. During the nine months ended September 30, 2015, we paid $114.5 million, net of cash received, for the acquisitions of ActoGeniX NV, Okanagan Specialty Fruits, Inc., and Oxitec, $111.6 million for net short-term and long-term investments, $17.1 million for the purchase of equity securities and warrants of certain of our collaborators, and $9.8 million for purchases of property, plant and equipment.

Cash flows from financing activities:

Net cash provided by financing activities was $11.2 million for the nine months ended September 30, 2016 compared to $331.4 million for the nine months ended September 30, 2015. During the nine months ended September 30, 2016, we received $18.2 million from stock option exercises and paid $6.7 million of deferred consideration to former shareholders of an acquired business. During the nine months ended September 30, 2015, we received $328.2 million of net proceeds from our public offerings in January and August.

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.

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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.

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 September 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	$48,750	$5,261	$11,591	$10,708	$21,190
Deferred consideration	8,723	8,723	—	—	—
Long term debt	6,418	471	925	1,120	3,902
Contingent consideration	3,839	1,583	2,256	—	—
	$67,730	$16,038	$14,772	$11,828	$25,092

In addition to the obligations in the table above, as of September 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 $31.0 million is remaining as of September 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 September 30, 2016, we had research and development commitments with third parties totaling $8.5 million that had not yet been incurred.

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. These amounts are not included in the table above due to the uncertainty of whether and when 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.

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 September 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 September 30, 2016, we had net operating loss carryforwards of approximately $257.7 million for U.S. federal income tax purposes available to offset future taxable income and U.S. federal and state research and development tax credits of $7.1 million, prior to consideration of annual limitations that may be imposed under Section 382 of the Internal Revenue Code of

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1986, as amended, or Section 382. These carryforwards begin to expire in 2022. Our direct foreign subsidiaries have foreign loss carryforwards of approximately $120.6 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 September 30, 2016, approximately $15.1 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 September 30, 2016, approximately $18.6 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 noncurrent in the consolidated balance sheet since we do not intend to sell the investment nor expect it to be converted into shares of common stock within one year.

Until such time as we convert the instrument into common stock, we are entitled to a monthly dividend payable in additional shares of preferred stock and record dividend income based on the fair value of the preferred shares.

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 $280.7 million and $343.8 million at September 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 September 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 $39.4 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 September 30, 2016 would be approximately $43.3 million and $31.5 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 September 30, 2016, we owned 99,114,668 shares or approximately 63 percent. The fair value of our investment in AquaBounty as of September 30, 2016 and December 31, 2015 was $39.2 million and $36.7 million, respectively. The fair value of our investment in AquaBounty as of September 30, 2016 would be approximately $43.1 million and $31.4 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 September 30, 2016, the original cost basis of this investment, including shares received as dividends, approximated the fair value, which was $123.7 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 ZIOPHARM. The fair value of this investment as of September 30, 2016 would be approximately $136.1 million and $99.0 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 with operations 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 September 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"). In July 2016, the court consolidated the lawsuits and appointed a lead plaintiff. The consolidated amended complaint names as defendants us and certain of our current and former officers (the "Defendants"). It alleges, among other things, that the Defendants made materially false and/or misleading statements during the Class Period with respect to our business, operations, and prospects in violation of Section 10(b) of the Securities Exchange Act of 1934, as amended. The plaintiffs' claims are based upon allegations in 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. We intend to defend the lawsuit vigorously; however, there can be no assurance regarding the ultimate outcome of this case.

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 CEO, and Third Security, and naming us as a nominal defendant. 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. The action has been stayed pending the report of the Special Litigation Committee.

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 into shares of 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 September 30, 2016 and December 31, 2015, the aggregate original cost basis of these securities was $232.0 million and $107.2 million, respectively, and the market value was $163.1 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 into shares of common stock, 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 on our financial position.

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 financial position.

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 management's judgments and assumptions, then they may have an adverse impact on our 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 September 30, 2016 and December 31, 2015, 37 percent and 30 percent of our consolidated total assets, respectively, were measured at fair value on a recurring basis, including 12 percent as of September 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 September 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 management's 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 financial position.

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 July 1, 2016 through September 30, 2016, we consummated the following transactions involving the issuance of unregistered securities:

- the issuance of 89,326 unregistered shares of our common stock in July, August, and September 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.
- On September 22, 2016, pursuant to New York Stock Exchange Rule 303A.08 and in reliance on Section 4(a)(2) of the Securities Act of 1933, as amended, we granted Geno J. Germano an employment inducement award in connection with Mr. Germano's appointment as President. The inducement award was a stock option award of 1,000,000 shares at an exercise price of $29.94. The award vests in four equal annual installments beginning on June 1, 2017. The award is subject to accelerated vesting in certain situations and expires on May 31, 2026. The award will generally be subject to the same terms and conditions as apply to awards granted under the 2013 Omnibus Incentive Plan. No commissions or other remuneration was paid in connection with the grant of the award.

(b) Use of Proceeds

On August 7, 2013, our registration statement on Form S-1 (File No. 333-189853) was declared effective by the SEC 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 SEC 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 Incorporated 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 SEC 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 SEC 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*	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).
10.2*†	Offer Letter for Andrew Last, Ph.D., dated as of August 5, 2016 (incorporated by reference to Exhibit 10.1 to Intrexon Corporation's Current Report on Form 8-K, filed on August 8, 2016 with the Securities and Exchange Commission).
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 September 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 September 30, 2016 and December 31, 2015, (ii) the Consolidated Statements of Operations for the three and nine months ended September 30, 2016 and 2015, (iii) the Consolidated Statements of Comprehensive Loss for the three and nine months ended September 30, 2016 and 2015, (iv) the Consolidated Statements of Shareholders' and Total Equity for the nine months ended September 30, 2016, (v) the Consolidated Statements of Cash Flows for the nine months ended September 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: November 9, 2016 By: /s/ Rick L. Sterling
Rick L. Sterling
Chief Financial Officer
(Principal Financial and Accounting Officer)