

YIELD10 BIOSCIENCE, INC.

FORM 10-Q (Quarterly Report)

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-Q

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

For the quarterly period ended June 30, 2017

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 001-33133

YIELD10 BIOSCIENCE, INC.

Delaware
(State or other jurisdiction of
incorporation or organization)

04-3158289
(I.R.S. Employer
Identification No.)

19 Presidential Way
Woburn, MA
(Address of principal executive offices)

01801
(Zip Code)

(617) 583-1700
(Registrant's telephone number, including area code)

(Former name, former address and former fiscal year, if changed since last report.)

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate 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 No

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

Large accelerated filer

Accelerated filer

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

Smaller reporting company

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

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

The number of shares outstanding of the registrant's common stock as of August 8, 2017 was 3,454,601.

Yield10 Bioscience, Inc.
Form 10-Q
For the Quarter Ended June 30, 2017

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PART I. FINANCIAL INFORMATION

ITEM 1. CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

**YIELD10 BIOSCIENCE, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS
UNAUDITED**

(in thousands, except share and per share data)

	June 30, 2017	December 31, 2016
Assets		
Current Assets:		
Cash and cash equivalents	\$ 3,011	\$ 7,309
Accounts receivable	213	66
Due from related party	—	1
Unbilled receivables	95	121
Prepaid expenses and other current assets	443	363
Deferred equity financing costs	146	—
Total current assets	<u>3,908</u>	<u>7,860</u>
Restricted cash	432	432
Property and equipment, net	1,633	1,739
Deferred equity financing costs	—	622
Other assets	95	95
Total assets	<u>\$ 6,068</u>	<u>\$ 10,748</u>
Liabilities and Stockholders' Equity		
Current Liabilities:		
Accounts payable	\$ 70	\$ 56
Accrued expenses	2,689	2,702
Total current liabilities	<u>2,759</u>	<u>2,758</u>
Lease incentive obligation, net of current portion	1,068	1,132
Contract termination obligation, net of current portion	—	489
Total liabilities	<u>3,827</u>	<u>4,379</u>
Commitments and contingencies (Note 8)		
Stockholders' Equity:		
Preferred stock (\$0.01 par value per share); 5,000,000 shares authorized; no shares issued or outstanding	—	—
Common stock (\$0.01 par value per share); 250,000,000 shares authorized at June 30, 2017 and December 31, 2016; 2,879,550 and 2,834,244 shares issued and outstanding at June 30, 2017 and December 31, 2016, respectively	29	28
Additional paid-in capital	340,472	339,782
Accumulated other comprehensive loss	(84)	(84)
Accumulated deficit	(338,176)	(333,357)
Total stockholders' equity	<u>2,241</u>	<u>6,369</u>
Total liabilities and stockholders' equity	<u>\$ 6,068</u>	<u>\$ 10,748</u>

The accompanying notes are an integral part of these interim unaudited condensed consolidated financial statements

YIELD10 BIOSCIENCE, INC.
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
UNAUDITED
(in thousands, except share and per share data)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Revenue:				
Grant revenue	\$ 293	\$ 188	\$ 617	\$ 345
Total revenue	293	188	617	345
Expenses:				
Research and development	1,138	1,547	2,247	2,975
General and administrative	1,866	1,149	3,142	3,421
Total expenses	3,004	2,696	5,389	6,396
Loss from continuing operations	(2,711)	(2,508)	(4,772)	(6,051)
Other (expense) income, net	(16)	1	(47)	4
Net loss from continuing operations	(2,727)	(2,507)	(4,819)	(6,047)
Discontinued operations:				
Loss from discontinued operations	—	(691)	—	(3,649)
Total loss from discontinued operations	—	(691)	—	(3,649)
Net loss	\$ (2,727)	\$ (3,198)	\$ (4,819)	\$ (9,696)
Basic and diluted net loss per share:				
Net loss from continuing operations	\$ (0.96)	\$ (0.90)	\$ (1.69)	\$ (2.20)
Net loss from discontinued operations	—	(0.25)	—	(1.32)
Net loss per share	\$ (0.96)	\$ (1.15)	\$ (1.69)	\$ (3.52)
Number of shares used in per share calculations:				
Basic & Diluted	2,849,069	2,771,736	2,844,492	2,754,232

The accompanying notes are an integral part of these interim unaudited condensed consolidated financial statements

YIELD10 BIOSCIENCE, INC.
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
UNAUDITED
(in thousands)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Net loss:	\$ (2,727)	\$ (3,198)	\$ (4,819)	\$ (9,696)
Other comprehensive loss				
Change in foreign currency translation adjustment	2	(2)	—	(6)
Total other comprehensive loss	2	(2)	—	(6)
Comprehensive loss	\$ (2,725)	\$ (3,200)	(4,819)	\$ (9,702)

The accompanying notes are an integral part of these interim unaudited condensed consolidated financial statements

YIELD10 BIOSCIENCE, INC.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
UNAUDITED
(in thousands)

	Six Months Ended June 30,	
	2017	2016
Cash flows from operating activities		
Net loss	\$ (4,819)	\$ (9,696)
Adjustments to reconcile net loss to cash used in operating activities:		
Depreciation	106	272
Charge for 401(k) company common stock match	46	232
Stock-based compensation	663	901
Gain on sale of discontinued operation and property and equipment	—	(31)
Changes in operating assets and liabilities:		
Accounts receivables	(147)	(72)
Due from related party	1	118
Unbilled receivables	26	47
Inventory	—	(17)
Prepaid expenses and other assets	542	1,043
Accounts payable	14	1,273
Accrued expenses	(165)	(2,141)
Contract termination obligation and other long-term liabilities	(553)	(150)
Deferred revenue	—	605
Net cash used for operating activities	<u>(4,286)</u>	<u>(7,616)</u>
Cash flows from investing activities		
Purchase of property and equipment	—	(389)
Proceeds from sale of discontinued operation and property and equipment	—	31
Change in restricted cash	—	(307)
Net cash used for investing activities	<u>—</u>	<u>(665)</u>
Cash flows from financing activities		
Taxes paid related to net share settlement upon vesting of stock awards	(12)	(274)
Net cash used for financing activities	<u>(12)</u>	<u>(274)</u>
Effect of exchange rate changes on cash and cash equivalents	—	(6)
Net decrease in cash and cash equivalents	(4,298)	(8,561)
Cash and cash equivalents at beginning of period	7,309	12,269
Cash and cash equivalents at end of period	<u>\$ 3,011</u>	<u>\$ 3,708</u>
Supplemental disclosure of non-cash information:		
Purchase of property and equipment included in accounts payable and accrued expenses	\$ —	\$ 301
Lease incentive paid by lessor	\$ —	\$ 1,332
Offering costs remaining in accrued expenses	\$ 146	\$ —
Reversal of deferred financing costs related to Aspire stock purchase agreement	\$ 450	\$ —

The accompanying notes are an integral part of these interim unaudited condensed consolidated financial statements

YIELD10 BIOSCIENCE, INC.
NOTES TO THE CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
UNAUDITED

(All dollar amounts, except share and per share amounts, are stated in thousands)

1. NATURE OF BUSINESS AND BASIS OF PRESENTATION

Yield10 Bioscience, Inc. ("Yield10 Bioscience," "Yield10" or the "Company") was founded as Metabolix, Inc. in 1992 and changed its name in January 2017. Yield10 is an agricultural bioscience company focusing on the development of new technologies to enable step-change increases in crop yield to enhance global food security. Yield10 is using two proprietary advanced biotechnology trait gene discovery platforms to improve fundamental crop yield through enhanced photosynthetic carbon capture and increased carbon utilization efficiency to increase seed yield. These platforms are based on the principle that plants which capture and utilize carbon more efficiently will enable more robust crops capable of increased seed yield. Yield10 is working to translate and demonstrate the commercial value of novel yield trait genes it has identified in major crops and to identify additional genome editing targets for improved crop performance in several key food and feed crops, including canola, soybean, rice and corn. Yield10 Bioscience is headquartered in Woburn, Massachusetts and has an additional agricultural science facility with greenhouses located in Saskatoon, Saskatchewan, Canada.

The accompanying condensed consolidated financial statements are unaudited and have been prepared by Yield10 in accordance with accounting principles generally accepted in the United States of America ("GAAP") and pursuant to the rules and regulations of the U.S. Securities and Exchange Commission ("SEC"). Certain information and footnote disclosures normally included in the Company's annual consolidated financial statements have been condensed or omitted. The year-end condensed consolidated balance sheet data was derived from audited financial statements, but does not include all disclosures required by GAAP. The condensed consolidated financial statements, in the opinion of management, reflect all adjustments (consisting only of normal recurring adjustments) necessary for a fair statement of the financial position and results of operations for the interim periods ended June 30, 2017 and 2016 .

The results of operations for the interim periods are not necessarily indicative of the results of operations to be expected for any future period or the entire fiscal year. These interim consolidated financial statements should be read in conjunction with the audited consolidated financial statements for the year ended December 31, 2016 , which are contained in the Company's Annual Report on Form 10-K filed with the SEC on March 30, 2017.

On May 26, 2017, the Company effected a 1-for-10 reverse stock split of its common stock. The ratio for the reverse stock split was determined by the Company's board of directors following approval by stockholders the Company's annual meeting held on May 24, 2017. Unless otherwise indicated, all share amounts, per share data, share prices, exercise prices, and conversion rates set forth in these notes and the accompanying condensed consolidated financial statements have, where applicable, been adjusted retroactively to reflect this reverse stock split.

The accompanying condensed consolidated financial statements have been prepared on a basis which assumes that the Company will continue as a going concern and which contemplates the realization of assets and satisfaction of liabilities and commitments in the normal course of business. With the exception of 2012, when the Company recognized \$38,885 of deferred revenue from a terminated joint venture, the Company has recorded losses since its initial founding, including its fiscal quarter ending June 30, 2017. During 2016, the Company completed a strategic restructuring under which Yield10 Bioscience became its core business. In connection with the restructuring, the Company discontinued its pilot biopolymer production and other biopolymer operations, sold substantially all of its biopolymer assets to CJ CheilJedang Corporation ("CJ") for a total purchase price of \$10,000 and reduced staffing levels to approximately twenty full-time employees as of December 31, 2016, in order to focus on crop science activities and significantly reduce the Company's cash burn rate used in operations. During 2016, the Company recorded restructuring charges of \$3,513 and as of June 30, 2017, restructuring obligations of \$1,410 remain outstanding with various payment due dates through May 2018.

As of June 30, 2017, the Company held unrestricted cash and cash equivalents of \$3,011 . On July 7, 2017, the Company completed an offering of its securities and raised net proceeds from the transaction of approximately \$2,012 . As a result of raising these additional funds, the Company anticipates that its current cash resources will be sufficient to fund operations and meet its obligations, including its remaining restructuring obligations, when due, into the first quarter of 2018. This forecast of cash resources is forward-looking information that involves risks and uncertainties, and the actual amount of expenses could vary materially and adversely as a result of a number of factors. The Company has evaluated the guidance of the Financial Accounting Standards Board's ("FASB") Accounting Standards Update ("ASU") No. 2014-15, *Presentation of Financial Statements-Going Concern (Subtopic 205-40)* in order to determine whether there is substantial doubt about its

ability to continue as a going concern for one year after the date its financial statements are issued. The Company's ability to continue operations after its current cash resources are exhausted depends on its ability to obtain additional financing through, among other sources, public or private equity financing, secured or unsecured debt financing, equity or debt bridge financing, additional government research grants or collaborative arrangements with third parties, as to which no assurances can be given. Management does not know whether additional financing will be available on terms favorable or acceptable to the Company when needed, if at all. If adequate additional funds are not available when required, or if the Company is unsuccessful in entering collaborative arrangements for further research, management may be forced to curtail the Company's research efforts, explore strategic alternatives and/or wind down its operations and pursue options for liquidating its remaining assets, including intellectual property and equipment. Based on the cash forecast, management has determined that the Company's present capital resources are not sufficient to fund its planned operations for the twelve months from the date that the financial statements are issued, which raises substantial doubt about the Company's ability to continue as a going concern.

In October 2015, the Company entered into a common stock purchase agreement with Aspire Capital Fund, LLC, ("Aspire") under which Aspire was committed to purchase, at the Company's direction, up to an aggregate of \$20,000 of shares of the Company's common stock over a 30 month period. Transactions under the Aspire agreement are required to be variable rate transactions which are prohibited by the securities agreement enacted in conjunction with the Company's July 7, 2017 offering. As such, the Aspire facility is no longer available to the Company as a source of capital.

2. ACCOUNTING POLICIES

During the six months ended June 30, 2017, the Company adopted ASU No. 2016-09, *Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting* ("ASU No. 2016-09"). ASU No. 2016-09 involves several aspects of the accounting of share-based payment transactions of which the accounting for forfeitures of stock awards is the most significant for the Company. Under the adopted guidance, the Company made an accounting policy election to account for forfeitures as they occur rather than continue with the previous method of estimating forfeiture rates when determining the fair value of service-based stock awards and then adjusting compensation expense in later periods for actual forfeitures as they occur or to reverse the effects of the estimated forfeiture rates if a forfeiture does not occur. The Company previously provided a forfeiture rate of approximately 6 percent. Due to the nature of vesting terms of the Company's stock options, the adoption of this standard had no material impact on the Company's operations or financial position.

Other than ASU No. 2016-09, there have been no material changes in accounting policies since the Company's fiscal year ended December 31, 2016, as described in Note 2 to the consolidated financial statements included in its Annual Report on Form 10-K for the year then ended.

Principles of Consolidation

The Company's consolidated financial statements are prepared in accordance with accounting principles generally accepted in the United States of America. The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries. All intercompany transactions were eliminated, including transactions with its Canadian subsidiary, Metabolix Oilseeds, Inc.

On September 16, 2016, the Company completed the sale of its biopolymer intellectual property and certain equipment and inventory to an affiliate of CJ in a transaction that met the requirements for discontinued operations reporting in accordance with ASU No. 2014-08, *Reporting Discontinued Operations and Disclosures of Disposals of Components of an Entity*. The condensed consolidated financial statements for the three and six month periods ending June 30, 2016, have been presented to reflect the Company's biopolymer operation as a discontinued operation.

Restructuring

In July 2016, the Company announced a strategic restructuring under which Yield10 Bioscience became its core business and its biopolymer operations were discontinued. The Company records estimated restructuring charges for employee severance and contract termination costs as a current period expense as those costs become contractually fixed, probable and estimable. The long and short-term obligations associated with these charges is reduced or adjusted as payments are made or the Company's estimates are revised.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United

States of America ("GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting periods. Actual results could differ from those estimates.

Foreign Currency Translation

Foreign denominated assets and liabilities of the Company's wholly owned foreign subsidiaries are translated into U.S. dollars at the prevailing exchange rates in effect on the balance sheet date. Revenues and expenses are translated at average exchange rates prevailing during the period. Any resulting translation gains or losses are recorded in accumulated other comprehensive income (loss) in the consolidated balance sheet. When the Company dissolves, sells or substantially sells all of the assets of a consolidated foreign subsidiary, the cumulative translation gain or loss of that subsidiary is released from comprehensive income (loss) and included within its consolidated statement of operations during the fiscal period when the dissolution or sale occurs.

Income Taxes

Deferred tax assets and deferred tax liabilities are recognized based on temporary differences between the financial reporting and tax basis of assets and liabilities using future enacted tax rates. A valuation allowance is recorded against deferred tax assets if it is more likely than not that some or all of the deferred tax assets will not be realized.

Due to the uncertainty surrounding the realization of favorable tax attributes in future tax returns, the Company has recorded a full valuation allowance against its otherwise recognizable net deferred tax assets.

The Company follows the accounting guidance related to income taxes including guidance which addresses accounting for uncertainty in income taxes. This guidance prescribes a threshold for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. It also provides guidance on derecognition, classification, interest and penalties, accounting in interim periods, disclosures and transitions. The Company had no amounts recorded for any unrecognized tax benefits as of June 30, 2017 or December 31, 2016 .

Concentration of Credit Risk

Financial instruments that potentially subject the Company to concentrations of credit risk primarily consist of cash and cash equivalents. The Company has historically invested its cash equivalents in highly rated money market funds, corporate debt, federal agency notes and U.S. treasury notes. Investments, when purchased, are acquired in accordance with the Company's investment policy which establishes a concentration limit per issuer. At June 30, 2017 , the Company's cash equivalents are invested solely in money market funds.

The Company provides credit to customers in the normal course of business. The Company performs ongoing credit evaluations of its customers' financial condition and limits the amount of credit extended when deemed necessary. At June 30, 2017 , \$293 of the Company's accounts and unbilled receivables of \$308 are due from U.S. government grants.

3. RECENT ACCOUNTING PRONOUNCEMENTS

From time to time, new accounting pronouncements are issued by the FASB or other standard setting bodies that are adopted as of the specified effective date.

In August 2016, the FASB issued ASU No. 2016-15, *Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments* . The new standard clarifies certain aspects of the statement of cash flows, including the classification of debt prepayment or debt extinguishment costs, settlement of zero-coupon debt instruments or other debt instruments with coupon interest rates that are insignificant in relation to the effective interest rate of the borrowing, contingent consideration payments made after a business combination, proceeds from the settlement of insurance claims, proceeds from the settlement of corporate-owned life insurance policies, distributions received from equity method investees and beneficial interests in securitization transactions. The new standard also clarifies that an entity should determine each separately identifiable source or use within the cash receipts and cash payments on the basis of the nature of the underlying cash flows. In situations in which cash receipts and payments have aspects of more than one class of cash flows and cannot be separated by source or use, the appropriate classification should depend on the activity that is likely to be the predominant source or use of

cash flows for the item. The new standard will be effective for the Company on January 1, 2018. The Company is in the process of evaluating the impact of this new guidance.

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*. The new standard changes the impairment model for most financial assets and certain other instruments. Under the new standard, entities holding financial assets and net investment in leases that are not accounted for at fair value through net income are to be presented at the net amount expected to be collected. An allowance for credit losses will be a valuation account that will be deducted from the amortized cost basis of the financial asset to present the net carrying value at the amount expected to be collected on the financial asset. The new standard will be effective for the Company on January 1, 2020. The Company is in the process of evaluating the impact of this new guidance.

In February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842)*. The new standard requires that all lessees recognize the assets and liabilities that arise from leases on the balance sheet and disclose qualitative and quantitative information about their leasing arrangements. The new standard will be effective for the Company on January 1, 2019. The Company is in the process of evaluating the impact of this new guidance.

In January 2016, the FASB issued ASU No. 2016-01, *Financial Instruments - Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities*. The new standard amends certain aspects of accounting and disclosure requirements of financial instruments, including the requirement that equity investments with readily determinable fair values be measured at fair value with changes in fair value recognized in our results of operations. The new standard does not apply to investments accounted for under the equity method of accounting or those that result in consolidation of the investee. Equity investments that do not have readily determinable fair values may be measured at fair value or at cost minus impairment adjusted for changes in observable prices. A financial liability that is measured at fair value in accordance with the fair value option is required to be presented separately in other comprehensive income for the portion of the total change in the fair value resulting from change in the instrument-specific credit risk. In addition, a valuation allowance should be evaluated on deferred tax assets related to available-for-sale debt securities in combination with other deferred tax assets. The new standard will be effective for the Company on January 1, 2018. The Company is in the process of evaluating the impact of this new guidance.

In May 2014, the FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers (Topic 606)*. The ASU is the result of a joint project by the FASB and the International Accounting Standards Board ("IASB") to clarify the principles for recognizing revenue and to develop a common revenue standard for GAAP and International Financial Reporting Standards ("IFRS") that would: remove inconsistencies and weaknesses, provide a more robust framework for addressing revenue issues, improve comparability of revenue recognition practices across entities, jurisdictions, industries, and capital markets, improve disclosure requirements and resulting financial statements, and simplify the presentation of financial statements. The core principle of the new guidance is that an entity should recognize revenue to depict the transfer of promised goods or services in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The ASU is effective for annual reporting periods beginning after December 15, 2016. Early adoption is not permitted. On July 9, 2015, the FASB voted to delay the effective date of the new revenue standard by one year, but to permit entities to choose to adopt the standard as of the original date. The Company is currently in the process of evaluating the effects the new revenue standard will have on its consolidated financial statements and related disclosures. The Company intends to complete the process during 2017 and adopt the standard on January 1, 2018, using the modified retrospective adoption transition method. The adoption of this standard is not expected to have a material impact on the Company's financial position or results of operations.

4. BASIC AND DILUTED NET INCOME (LOSS) PER SHARE

Basic net income (loss) per share is computed by dividing net income (loss) by the weighted-average number of common shares outstanding. Diluted net income (loss) per share is computed by dividing net loss by the weighted-average number of dilutive common shares outstanding during the period. Diluted shares outstanding is calculated by adding to the weighted shares outstanding any potential (unissued) shares of common stock from outstanding stock options and warrants based on the treasury stock method, as well as weighted shares outstanding of any potential (unissued) shares of common stock from restricted stock units. In periods when a net loss is reported, all common stock equivalents are excluded from the calculation because they would have an anti-dilutive effect, meaning the loss per share would be reduced. Therefore, in periods when a loss is reported, there is no difference in basic and dilutive loss per share. Common stock equivalents include stock options, restricted stock awards and warrants.

On May 26, 2017, the Company effected a 1-for-10 reverse stock split of its common stock. The calculation of basic and diluted net loss per share, as presented in the accompanying condensed consolidated statement of operations, have been determined based on a retroactive adjustment of weighted average shares outstanding for all periods presented.

The number of shares of potentially dilutive common stock presented on a weighted average basis, related to options, restricted stock units and warrants (prior to consideration of the treasury stock method) that were excluded from the calculation of dilutive shares since the inclusion of such shares would be anti-dilutive for the three and six months ended June 30, 2017 and 2016, respectively, are shown below. Warrants issued to investors as a result of the Company's financing completed on July 7, 2017, have been excluded from the table. See Note 14 - Subsequent Events.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Options	544,276	94,484	617,741	93,442
Restricted stock units	14,382	71,855	17,992	94,869
Warrants	393,300	393,300	393,300	393,300
Total	951,958	559,639	1,029,033	581,611

5. FAIR VALUE MEASUREMENTS

The Company has certain financial assets recorded at fair value which have been classified as Level 1 within the fair value hierarchy as described in the accounting standards for fair value measurements. Fair value is the price that would be received from the sale of an asset or the price paid to transfer a liability in an orderly transaction between independent market participants at the measurement date. Fair values determined by Level 1 inputs utilize observable data such as quoted prices in active markets for identical instruments. Fair values determined by Level 2 inputs utilize data points other than quoted prices in active markets that are observable either directly or indirectly. Fair values determined by Level 3 inputs utilize unobservable data points in which there is little or no market data, which require the reporting entity to develop its own assumptions. The fair value hierarchy level is determined by the lowest level of significant input. At June 30, 2017 and December 31, 2016, the Company did not own any Level 2 or Level 3 financial assets or liabilities and there were no transfers of financial assets or liabilities between category levels.

The Company's assets are measured at fair value on a recurring basis. The balance of Level 1 assets as of June 30, 2017 and December 31, 2016 were \$1,021 and \$1,018, respectively, and for both periods the assets were invested in money market funds classified in cash and cash equivalents.

6. ACCRUED EXPENSES

Accrued expenses consisted of the following at:

	June 30, 2017	December 31, 2016
Employee compensation and benefits	\$ 387	\$ 713
Contract termination obligation	1,194	939
Professional services	329	459
Other	779	591
Total accrued expenses	\$ 2,689	\$ 2,702

7. STOCK-BASED COMPENSATION

Expense Information for Employee Stock Awards

The Company recognized stock-based compensation expense related to stock awards of \$399 and \$663 for the three and six months ended June 30, 2017, respectively. The Company recognized stock-based compensation expense related to stock awards of \$310 and \$901 for the three and six months ended June 30, 2016. Of the amounts reflected for the three and six months ended June 30, 2016, \$35 and \$198 were included in discontinued operations within the Company's condensed consolidated statements of operations. At June 30, 2017, there was approximately \$1,537 of pre-tax stock-based compensation expense related to unvested awards not yet recognized.

The compensation expense related to unvested stock options is expected to be recognized over a remaining weighted average period of 1.32 years.

Stock Options

A summary of option activity for the six months ended June 30, 2017 is as follows:

	Number of Shares	Weighted Average Exercise Price
Outstanding at December 31, 2016	605,077	\$ 34.49
Granted	47,150	3.94
Exercised	—	—
Forfeited	(2,534)	5.55
Expired	(23,352)	417.84
Outstanding at June 30, 2017	<u>626,341</u>	<u>\$ 18.01</u>
Options vested and expected to vest at June 30, 2017	626,341	\$ 18.01
Options exercisable at June 30, 2017	239,253	\$ 38.60

Restricted Stock Units

Restricted Stock Units ("RSUs") awarded to employees generally vest in four equal annual installments beginning one year after the date of grant, subject to service conditions. RSUs awarded to non-employee directors generally vest one year after the date of grant, with the exception of RSUs granted in lieu of cash compensation, which vest immediately. The Company records stock compensation expense for RSUs on a straight line basis over their vesting period based on each RSU's award date market value.

The Company pays minimum federal, state or provincial income tax withholding associated with RSUs for its U.S. and Canadian employees. As the RSUs vest, the Company withholds a number of shares with an aggregate fair market value equal to the minimum tax withholding amount (unless the employee makes other arrangements for payment of the tax withholding) from the common stock issuable at the vest date. During the six months ended June 30, 2017 and 2016, the Company paid \$12 and \$274, respectively, for income tax withholdings associated with RSUs that vested during these periods.

A summary of RSU activity for the six months ended June 30, 2017 is as follows:

	Number of RSUs	Weighted Average Remaining Contractual Life (years)
Outstanding at December 31, 2016	21,732	
Awarded	25,337	
Common stock issued upon vesting	(32,539)	
Forfeited	(163)	
Outstanding at June 30, 2017	<u>14,367</u>	1.25
Weighted average remaining recognition period		1.75

8. COMMITMENTS AND CONTINGENCIES

Lease Commitments

In 2016, the Company entered into a lease agreement, pursuant to which the Company leases approximately 29,622 square feet of office and research and development space located at 19 Presidential Way, Woburn, Massachusetts. The lease began on June 1, 2016 and will end on November 30, 2026. The Company provided the landlord with a security deposit in the form of a letter of credit in the amount of \$307. Pursuant to the lease, the Company will also pay certain taxes and operating costs associated with the premises during the term of the lease. During the buildout of the rented space, the landlord paid \$889 for tenant improvements to the facility and an additional \$444 for tenant improvements that result in increased rental payments by the Company. The current and non-current portions of the lease incentive obligations related to the landlord's contributions toward the cost of tenant improvements are recorded within accrued expenses and long-term lease incentive obligation, respectively, in the Company's condensed consolidated balance sheet contained herein.

In October 2016, the Company entered into a sublease agreement with CJ for the sublease of approximately 9,874 square feet of its leased facility located in Woburn, Massachusetts. The sublease space was determined to be in excess of the Company's needs as a result of its strategic shift to Yield10 Bioscience and the related restructuring of its operations. The sublease term is coterminous with the Company's master lease. CJ pays rent and operating expenses equal to approximately one-third of the amounts payable to the landlord by the Company, as adjusted from time-to-time in accordance with the terms of the master lease. Total future minimum operating lease payments of \$7,089 shown below are net of the CJ sublease payments. CJ has provided the Company with a security deposit of \$103 in the form of an irrevocable letter of credit.

The Company also leases approximately 13,702 square feet of office and laboratory space at 650 Suffolk Street, Lowell, Massachusetts. The lease for this facility expires in May 2020, with an option to renew for one five-year period. The Company is currently working with a commercial real estate broker to locate a subtenant for this space. The Company's wholly owned subsidiary, Metabolix Oilseeds, Inc. ("MOI"), located in Saskatoon, Saskatchewan, Canada, leases approximately 4,100 square feet of office, laboratory and greenhouse space. MOI's leases for its various leased facilities expire between September 30, 2017 and July 31, 2018. The Company expects to renew these Canadian leases prior to their expiration.

Annual base rental payments remaining due under the Company's leases, net of sublease payments expected from CJ, are as follows:

Year ended December 31,	Minimum lease payments
2017 (July to December)	\$ 463
2018	875
2019	855
2020	734
2021	654
2022 and thereafter	3,508
Total	\$ 7,089

Contractual Commitments

In connection with the discontinuation of biopolymer operations, the Company ceased pilot production of biopolymer material and reached agreements during 2016 with the owner-operators of its biopolymer pilot production facilities regarding the termination of their services. The Company recorded contract termination costs related to these manufacturing agreements of \$2,641 during the quarter ended September 30, 2016, which was recorded within discontinued operations in the Company's condensed consolidated statements of operations for the year ended December 31, 2016. As of June 30, 2017, \$1,194 remains outstanding and is payable in quarterly installments through May 2018. The short and long-term portions of these contract liabilities are recorded in accrued expenses and contract termination obligation, respectively, in the Company's condensed consolidated balance sheets contained herein.

Litigation

From time-to-time, the Company may be subject to legal proceedings and claims in the ordinary course of business. The Company is not currently aware of any such proceedings or claims that it believes will have, individually or in the aggregate, a material adverse effect on the business, financial condition or the results of operations.

Guarantees

As of June 30, 2017 and December 31, 2016, the Company did not have significant liabilities recorded for guarantees.

The Company enters into indemnification provisions under various agreements with other companies in the ordinary course of business, typically with business partners, contractors, and customers. Under these provisions, the Company generally indemnifies and holds harmless the indemnified party for losses suffered or incurred by the indemnified party as a result of its activities. These indemnification provisions generally survive termination of the underlying agreement. The maximum potential amount of future payments the Company could be required to make under these indemnification provisions is unlimited. However, to date Yield10 Bioscience has not incurred material costs to defend lawsuits or settle claims related to these indemnification provisions. As a result, the estimated fair value of the indemnifications under these agreements is believed to be minimal. Accordingly, the Company has no liabilities recorded for these agreements as of June 30, 2017 and December 31, 2016.

9. GEOGRAPHIC INFORMATION

The geographic distribution of the Company's operating revenues from continuing operations and long-lived assets are summarized in the tables below:

	U.S.	Canada	Eliminations	Total
Three Months Ended June 30, 2017:				
Net revenues from external customers	\$ 293	\$ —	\$ —	\$ 293
Inter-geographic revenues	—	312	(312)	—
Net revenues	<u>\$ 293</u>	<u>\$ 312</u>	<u>\$ (312)</u>	<u>\$ 293</u>
Three Months Ended June 30, 2016:				
Net revenues from external customers	\$ 188	\$ —	\$ —	\$ 188
Inter-geographic revenues	—	215	(215)	—
Net revenues	<u>\$ 188</u>	<u>\$ 215</u>	<u>\$ (215)</u>	<u>\$ 188</u>
Six Months Ended June 30, 2017:				
Net revenues from external customers	\$ 617	\$ —	\$ —	\$ 617
Inter-geographic revenues	—	533	(533)	—
Net revenues	<u>\$ 617</u>	<u>\$ 533</u>	<u>\$ (533)</u>	<u>\$ 617</u>
Six Months Ended June 30, 2016:				
Net revenues from external customers	\$ 345	\$ —	\$ —	\$ 345
Inter-geographic revenues	—	427	(427)	—
Net revenues	<u>\$ 345</u>	<u>\$ 427</u>	<u>\$ (427)</u>	<u>\$ 345</u>

Foreign revenue is based on the country in which the Company's subsidiary that earned the revenue is domiciled. During the three and six months ended June 30, 2017, revenue earned from the Company's Camelina grants with the U.S. Department of Energy totaled \$293 and \$586, respectively, and represented 100% and 95% of total revenue. During the three and six months ended June 30, 2016, revenue earned from the Company's Camelina grants totaled \$188 and \$345, respectively, and represented 100% of total revenue for both periods.

The geographic distribution of the Company's long-lived assets is summarized as follows:

	U.S.	Canada	Eliminations	Total
June 30, 2017	\$ 1,633	\$ —	\$ —	\$ 1,633
December 31, 2016	\$ 1,739	\$ —	\$ —	\$ 1,739

10. LICENSE AGREEMENTS AND RELATED PARTIES

The Company previously licensed certain technology to Tephra, Inc., a related party, for use in medical applications. During May 2016, the Company entered into an amendment to its license agreement with Tephra, in which the Company received a lump sum payment of \$2,000 in consideration for an early buyout of all future royalties under the agreement and the licensing of two additional production strains and related intellectual property. The Company completed delivery of the technology to Tephra during the quarter ended September 30, 2016. As a result of this buyout, no further Tephra royalty or licensing revenue has been or will be earned by the Company after September 2016. During the three and six months ended June 30, 2016, the Company recorded license and royalty revenue from Tephra of \$1,580 and \$1,778, respectively. As of December 31, 2016, the Company had \$1 of outstanding receivables due from Tephra.

The patents underlying this license agreement are now owned by CJ. As a consequence of this sale and the Company's discontinuation of its biopolymer operations, license fee and royalty revenue is included within income from discontinued operations within the Company's condensed consolidated statements of operations contained in this Quarterly Report.

11. CAPITAL STOCK

Common Stock

On May 26, 2017, the Company effected a 1-for- 10 reverse stock split of its common stock. The ratio for the reverse stock split was determined by the Company's board of directors following approval by stockholders at the Company's annual meeting held on May 24, 2017. The reverse stock split reduced the number of shares of the Company's common stock outstanding at the time of the reverse stock split from approximately 28.7 million shares to approximately 2.9 million shares. Proportional adjustments were made to the Company's outstanding stock options and restricted stock units and to the number of shares issued and issuable under the Company's equity compensation plans. The number of authorized shares of the Company's common stock remained at 250 million shares.

In connection with the wind down of biopolymer operations, the Company ceased pilot production of biopolymer material at its third-party biopolymer pilot production facilities. In September 2016, the Company entered into an early termination agreement with the owner-operator of one of the biopolymer production facilities. As part of the consideration for the early termination, the Company issued 27,500 unregistered shares of Yield10 Bioscience common stock.

In October 2015, the Company entered into a common stock purchase agreement with Aspire under which Aspire was committed to purchase, at the Company's direction, up to an aggregate of \$20,000 of shares of Company common stock over a 30 month period. Transactions under the Aspire agreement are required to be variable rate transactions which are prohibited by the securities agreement enacted in conjunction with the Company's July 7, 2017 offering. As such, the Aspire facility is no longer available to the Company as a source of capital. During the three months ended June 30, 2017, the Company wrote off its deferred equity offering costs of \$622 related to the Aspire agreement since the Company no longer intends to pursue transactions under this agreement. Expense related to this write off of deferred equity offering costs are included within general and administrative expense for the three and six months ending June 30, 2017, within the condensed consolidated statements of operations included herein.

Preferred Stock

The Company's restated certificate of incorporation, as amended, authorizes it to issue up to 5 million shares of \$0.01 par value preferred stock. As of June 30, 2017 and December 31, 2016, no preferred stock was issued or outstanding.

12. RESTRUCTURING

In July 2016, the Company announced a strategic restructuring under which Yield10 Bioscience became its core business and its biopolymer operations were discontinued. As part of its strategic restructuring, the Company reduced staffing

levels to twenty full-time employees as of December 31, 2016, and in January 2017, the Company formally changed its name to Yield10 Bioscience, Inc. For further discussion of this strategic shift, see Note 13, "Discontinued Operations," to the Company's condensed consolidated financial statements included in this Quarterly Report on Form 10-Q.

In connection with the wind down of biopolymer operations, the Company also ceased pilot production of biopolymer materials and reached agreements with the owner-operators of its biopolymer production facilities regarding the termination of these services. Through June 30, 2017, the Company made cash payments of \$1,907, issued 27,500 shares of company common stock with a fair value of \$85 and transferred certain biopolymer-related production equipment with a net book value of \$111 to settle a portion of these agreements and other restructuring activities. At June 30, 2017, remaining cash restructuring costs are estimated to be \$1,410.

	Biopolymer Production Agreements	Employee Severance and Related Costs	Total
Aggregate Charges and Amounts Accrued	\$ 2,641	\$ 872	\$ 3,513
Paid in Cash	(1,251)	(656)	(1,907)
Paid through Stock and Equipment	(196)	—	(196)
Ending Balance Accrued at June 30, 2017	\$ 1,194	\$ 216	\$ 1,410

With the exception of approximately \$238 of the \$872 in employee severance and related costs incurred for non-biopolymer employees, total restructuring costs shown in the table were classified within discontinued operations in the Company's condensed consolidated statement of operations during the year ended December 31, 2016. Amounts related to the biopolymer production agreements are included within research and development expenses as shown in Note 13, "Discontinued Operations" to our condensed consolidated financial statements included in this Quarterly Report on Form 10-Q.

13. DISCONTINUED OPERATIONS

In July 2016, the Company announced a strategic restructuring plan under which Yield10 Bioscience became its core business. Yield10 Bioscience discontinued its biopolymer operations and eliminated positions in both its biopolymer operations and corporate organization.

As part of this strategic shift, the Company completed the sale of its biopolymer intellectual property and certain equipment and inventory to an affiliate of CJ during September 2016. The \$10,000 purchase price paid by CJ was primarily for the acquisition of intellectual property, including the Company's PHA strains, patent rights, know-how and its rights, title and interest in certain license agreements. None of this intellectual property was previously capitalized to the Company's balance sheet. As such, the transaction resulted in a gain on the sale of approximately \$9,868, net of the book value of the equipment sold. In addition to the CJ purchase, other parties acquired various capital equipment of the biopolymer operation for a total purchase price of approximately \$428, resulting in a net loss on sale of this equipment of approximately \$35.

After 2016, the Company has not had and is not expected to have further significant involvement in the operations of the discontinued biopolymer business.

The following are the operating items comprising income or loss from discontinued operations for the three and six months ended June 30, 2016.

	Three Months Ended June 30, 2016	Six Months Ended June 30, 2016
Total revenue	\$ 2,604	\$ 3,122
Costs and expenses:		
Cost of product revenue	121	238
Research and development	2,742	5,646
Selling, general and administrative	463	918
Total costs and expenses	3,326	6,802
Other (income) or expense	(30)	(30)
Total loss from discontinued operations	\$ (692)	\$ (3,650)

The following are the non-cash operating items related to discontinued operations for the three and six months ended June 30, 2016.

	Three Months Ended June 30, 2016	Six Months Ended June 30, 2016
Non-cash operating items:		
Depreciation	\$ 115	\$ 216
Charge for 401(k) company common stock match	\$ 43	\$ 120
Stock-based compensation	\$ 35	\$ 198
Investing items:		
Purchases of property and equipment	\$ 42	\$ 178

14. SUBSEQUENT EVENTS

On July 7, 2017, the Company completed an offering of its securities. Proceeds from the transaction were approximately \$2,012, net of estimated issuance costs of \$272. Investors participating in the transaction purchased a total of 570,784 shares of common stock at a price of \$4.00 per share and an equal number of warrants with an exercise price of \$5.04 per share, exercisable beginning on the six-month anniversary of the date of issuance. The warrants expire on the sixth anniversary of the date that they become exercisable.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.

(All dollar amounts are stated in thousands)

Forward Looking Statements

This Quarterly Report on Form 10-Q contains "forward-looking statements" within the meaning of 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These statements relate to our future plans, objectives, expectations and intentions and may be identified by words such as "may," "will," "should," "expects," "plans," "anticipate," "intends," "target," "projects," "contemplates," "believe," "estimates," "predicts," "potential," and "continue," or similar words.

Although we believe that our expectations are based on reasonable assumptions within the limits of our knowledge of our business and operations, the forward-looking statements contained in this document are neither promises nor guarantees.

Our business is subject to significant risk and uncertainties and there can be no assurance that our actual results will not differ materially from our expectations. These forward looking statements include, but are not limited to, statements concerning our business plans and strategies; the expected results of our strategic restructuring to focus on Yield10 Bioscience as our core business; expected future financial results and cash requirements; plans for obtaining additional funding; plans and expectations that depend on our ability to continue as a going concern; and plans for development and commercialization of our Yield10 technologies. Such forward-looking statements are subject to a number of risks and uncertainties that could cause actual results to differ materially from those anticipated including, without limitation, risks related to our limited cash resources, uncertainty about our ability to secure additional funding, risks and uncertainties associated with our restructuring plans, risks related to the execution of our business plans and strategies, risks associated with the protection and enforcement of our intellectual property rights, as well as other risks and uncertainties set forth under the caption "Risk Factors" in Part II, Item 1A, of this Quarterly Report on Form 10-Q and in our other filings with the Securities and Exchange Commission.

The forward-looking statements and risk factors presented in this document are made only as of the date hereof and we do not intend to update any of these risk factors or to publicly announce the results of any revisions to any of our forward-looking statements other than as required under the federal securities laws.

Unless the context otherwise requires, all references in this Form 10-Q to "Yield10 Bioscience," "Yield10," "we," "our," "us," "our company" or "the company" refer to Yield10 Bioscience, Inc., a Delaware corporation, and its subsidiaries.

Overview

Yield10 Bioscience, Inc. is an agricultural bioscience company focusing on the development of new technologies to enable step-change increases in crop yield to enhance global food security. We consider 10-20 percent increases in crop yield to be step-change increases. According to a United Nations report, food production must be increased by over 70 percent in the next 35 years to feed the growing global population, which is expected to increase from 7 billion to more than 9.6 billion by 2050. During that time period, there will be a reduction in available arable land as a result of infrastructure growth and increased pressure on scarce water resources. Harvestable food production per acre and per growing season must be increased to meet this demand.

Yield10 is using two proprietary advanced biotechnology trait gene discovery platforms to improve fundamental crop yield through enhanced photosynthetic carbon capture and increased carbon utilization efficiency to increase seed yield. These platforms are based on the principle that plants which capture and utilize carbon more efficiently will enable more robust crops capable of increased seed yield. Yield10 is working to develop, translate and demonstrate the commercial value of new genetically engineered yield trait genes, identified in our discovery platforms, in major crops and to identify additional genome editing targets for improved crop performance in several key food and feed crops, including canola, soybean, rice and corn. Yield10 Bioscience is headquartered in Woburn, Massachusetts and has an additional agricultural science facility with greenhouses in Saskatoon, Saskatchewan, Canada.

Yield10 Bioscience was founded as Metabolix, Inc. in 1992 and originally focused on redirecting carbon flow in living systems to produce bioplastics and biobased chemicals. In 1997, Metabolix started a crop science research program with the intent to produce the microbial bioplastic polyhydroxybutyrate ("PHB") in high concentration in the seeds of oilseed crops or in the leaves of biomass crops where it acts as an additional carbon sink or carbon store. As we made progress on our crop program, we learned that the rate of carbon supply from photosynthesis was a bottleneck to the effective utilization of carbon, and we initiated a series of exploratory programs to develop new technologies to fundamentally increase the plants' ability to fix and capture more carbon. These early research programs resulted in the establishment of our crop yield trait gene discovery platforms and the identification of a series of promising proprietary yield trait genes. In our work to date, our team has demonstrated step-change yield increases in Camelina seed production and in switchgrass biomass production. We are currently progressing the development of our lead yield trait genes in canola, soybean, rice and corn to provide step-change yield solutions for enhancing global food security.

Based on encouraging early results from these gene discovery programs, we refocused our crop science efforts to yield improvement in major food and feed crops in 2015 and rebranded the effort as Yield10 Bioscience. In 2016, we sold our biopolymers assets and restructured the Company around our crop science mission. In January 2017, we completed this transition and changed the name of the company to Yield10 Bioscience, Inc.

In connection with our restructuring, we initiated actions during July 2016 to significantly reduce our workforce and cease pilot biopolymer production in an effort to significantly reduce our ongoing cash burn rate. During September 2016, we completed the sale of our biopolymer intellectual property and certain equipment and inventory to an affiliate of CJ CheilJedang Corporation ("CJ") for a total purchase price of \$10,000. In winding down its biopolymer operations, the

Company also ceased pilot production of biopolymer materials and reached agreements with the owner-operators of its biopolymer production facilities regarding the termination of these services. Through June 30, 2017, we made cash payments of \$1,251, issued 27,500 shares of common stock with a fair value of \$85 and transferred certain biopolymer-related production equipment with a net book value of \$111 to settle a portion of these agreements and other restructuring activities. Remaining cash restructuring costs are estimated to be approximately \$1,410, and are expected to be paid out through May 2018.

As of June 30, 2017, we held unrestricted cash and cash equivalents of \$3,011. On July 7, 2017, we completed an offering of our securities and deposited net proceeds from the transaction of approximately \$2,012. As a result of acquiring these additional funds, we anticipate that our current cash resources will be sufficient to fund operations and meet our obligations, including our remaining restructuring obligations, when due, into the first quarter of 2018. This forecast of cash resources is forward-looking information that involves risks and uncertainties, and the actual amount of expenses could vary materially and adversely as a result of a number of factors. We have evaluated the new guidance of ASU 2014-15, *Presentation of Financial Statements-Going Concern (Subtopic 205-40)* in order to determine whether there is substantial doubt about our ability to continue as a going concern for one year after the date our financial statements are issued. Our ability to continue operations after our current cash resources are exhausted depends on our ability to obtain additional financing through, among other sources, public or private equity financing, secured or unsecured debt financing, equity or debt bridge financing, additional government research grants or collaborative arrangements with third parties, as to which no assurances can be given. We do not know whether additional financing will be available on terms favorable or acceptable to us when needed, if at all. If adequate additional funds are not available when required, or if we are unsuccessful in entering collaborative arrangements for further research, we may be forced to curtail our research efforts, explore strategic alternatives and/or wind down our operations and pursue options for liquidating our remaining assets, including intellectual property and equipment. Based on our cash forecast, we have determined that our present capital resources are not sufficient to fund our planned operations for a twelve month period from the date that our financial statements are issued, and therefore, raise substantial doubt about our ability to continue as a going concern.

Since launching Yield10 in September 2015, we have consolidated our crop science intellectual property position, identified novel gene targets for improving crop yield, formed a scientific advisory board with academic and business leaders in plant science, conducted greenhouse trials and secured an ARPA-e grant to support multi-trait field trials in Camelina incorporating our Smart Carbon Grid traits.

Government Grants

Our principal sources of revenue are government research grants. As of June 30, 2017, expected gross proceeds of \$758 remain to be received under our U.S. government grants. This includes amounts for reimbursement to our subcontractors, as well as reimbursement for our employees' time, benefits and other expenses related to future performance.

The status of our government grants is as follows:

Program Title	Funding Agency	Total Government Funds	Total received through June 30, 2017	Remaining amount available as of June 30, 2017	Contract/Grant Expiration
Production of High Oil, Transgene Free Camelina Sativa Plants through Genome Editing ("Camelina")	Department of Energy	\$ 1,997	\$ 1,239	\$ 758	September 2018
Subcontract from NC State University (NCSU) project funded by DOE ARPA-E entitled "Jet Fuel from Camelina Sativa: A Systems Approach"	Department of Energy	276	276	—	March 2017
Total		\$ 2,273	\$ 1,515	\$ 758	

Critical Accounting Estimates and Judgments

The discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America (“GAAP”) for interim financial information. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. On an ongoing basis, we evaluate our estimates, including those related to revenue recognition, stock-based compensation and strategic restructuring charges. We base our estimates on historical experience and on various other assumptions that we believe to be 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. Actual results may differ from these estimates. The critical accounting policies and the significant judgments and estimates used in the preparation of our condensed consolidated financial statements for the three and six months ended June 30, 2017, are consistent with those discussed in our Annual Report on Form 10-K for the year ended December 31, 2016, in the section captioned “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Estimates and Judgments.”

Results of Operations

Comparison of the Three Months Ended June 30, 2017 and 2016

Revenue

	Three Months Ended June 30,		Change
	2017	2016	
Grant revenue	\$ 293	\$ 188	\$ 105

Grant revenue from continuing operations was \$293 and \$188 for the three months ended June 30, 2017 and 2016, respectively. Grant revenue for both periods consisted of revenue earned from our BETO Camelina grant with the Department of Energy.

We anticipate grant revenue will decline during the remainder of 2017 as we near completion of the BETO Camelina grant.

Expenses

	Three Months Ended June 30,		Change
	2017	2016	
Research and development expenses	\$ 1,138	\$ 1,547	\$ (409)
General and administrative expenses	1,866	1,149	717
Total expenses	\$ 3,004	\$ 2,696	\$ 308

Research and Development Expenses

Research and development expenses from continuing operations were \$1,138 and \$1,547 for the three months ended June 30, 2017 and 2016, respectively. The decrease of \$409 is primarily due to a decrease in research facility expenses. Research facility expenses decreased by \$386 from \$650 during the three months ended June 30, 2016 to \$264 during the three months ended June 30, 2017, primarily as a result of our move to our new, and less expensive, Woburn, Massachusetts facility.

We expect that our 2017 research and development expenses will continue at levels below comparable 2016 periods as a result of our restructuring completed in the prior year and our ongoing efforts to closely manage cash usage.

General and Administrative Expenses

General and administrative expenses from continuing operations were \$1,866 and \$1,149 for the three months ended June 30, 2017 and 2016, respectively. The increase of \$717 was primarily due to recognition of \$622 in previously deferred equity offering costs related to a common stock purchase agreement with Aspire Capital Fund, LLC, ("Aspire") and increased professional service fees. In October 2015, we entered into a common stock purchase agreement with Aspire under which Aspire was committed to purchase, at our direction, up to an aggregate of \$20,000 of shares of common stock over a 30 month period. Aspire purchase transactions, if initiated, would utilize pricing formulas that qualify them as variable rate transactions, as defined in the securities purchase agreement entered into in connection with our securities offering completed on July 7, 2017 (see Note 14 - Subsequent Events). The securities purchase agreement prohibits us from issuing shares of common stock involving variable rate transactions for a period of three years from the date on which the securities purchase agreement was signed, and as a result, the Aspire facility is no longer available to us as a source of capital. Since the deferred equity offering costs can no longer be offset against future common stock issuances to Aspire, we recognized the full deferral of \$622 within general and administrative expenses during the three months ending June 30, 2017. Professional service fees increased by \$212 from \$117 during the three months ended June 30, 2016 to \$329 during the three months ended June 30, 2017, primarily as a result of higher external legal expenses.

While we anticipate that general and administrative expenses may fluctuate from quarter-to-quarter, we expect that our 2017 general and administrative expenses will be below 2016 expenditure levels as a result of our restructuring completed in the prior year and our ongoing efforts to closely manage cash usage.

Other Income (Expense), Net

	Three Months Ended June 30,		Change
	2017	2016	
Total other income (expense), net	\$ (16)	\$ 1	\$ (17)

Other income (expense), net, reflects net expense of \$16 and net income of \$1 for the three months ended June 30, 2017 and 2016, respectively. The net expense during the second quarter of 2017 is primarily the result of interest charges recorded in connection with payments being made by the Company through May 2018 related to the early termination of a third party manufacturing agreement. Other income, net, shown for the 2016 period, is primarily the result of income from our investment in money market funds and realized net gains from foreign currency translation.

Discontinued Operations

In July 2016, our Board of Directors approved a restructuring plan under which Yield10 Bioscience became our core business with a focus on developing disruptive technologies for step-change improvements in crop yield to enhance global food security. As a result of this strategic shift, we completed the sale of our biopolymer intellectual property and certain equipment and inventory to an affiliate of CJ during September 2016. We determined that the sale of our biopolymer assets and operations represented a transaction, under current accounting guidance, that met the requirements for discontinued operations reporting, and as such, the financial results of the biopolymer operations have been reflected as discontinued operations for the three months ended June 30, 2016.

During the three months ending June 30, 2017 and 2016, we recognized a net loss from discontinued operations of \$0 and \$691, respectively.

Comparison of the Six Months Ended June 30, 2017 and 2016

Revenue

	Six Months Ended June 30,		Change
	2017	2016	
Grant revenue	\$ 617	\$ 345	\$ 272

Grant revenue from continuing operations was \$617 and \$345 for the six months ended June 30, 2017 and 2016, respectively. Grant revenue for both periods primarily consisted of revenue earned from our BETO Camelina grant with the Department of Energy.

Expenses

	Six Months Ended June 30,		Change
	2017	2016	
Research and development expenses	\$ 2,247	\$ 2,975	\$ (728)
General and administrative expenses	3,142	3,421	(279)
Total expenses	<u>\$ 5,389</u>	<u>\$ 6,396</u>	<u>\$ (1,007)</u>

Research and Development Expenses

Research and development expenses from continuing operations were \$2,247 and \$2,975 for the six months ended June 30, 2017 and 2016, respectively. The decrease of \$728 is primarily due to decreases in research facility and employee compensation and related benefit expenses. Research facility expenses decreased by \$521 from \$989 during the six months ended June 30, 2016 to \$468 during the six months ended June 30, 2017, primarily as a result of our move to our new Woburn, Massachusetts facility. Employee compensation and related benefit expenses were \$1,167 and \$1,416 for the six months ended June 30, 2017 and 2016, respectively. The decrease of \$249 during the 2017 period is primarily attributable to decreases in headcount resulting from our recent restructuring. Sponsored research expenses increased by \$119 to \$243 during the six months ended June 30, 2017 from \$124 during the six months ended June 30, 2016, primarily in connection with our use of third-party research and crop field trial support.

General and Administrative Expenses

General and administrative expenses from continuing operations were \$3,142 and \$3,421 for the six months ended June 30, 2017 and 2016, respectively. The decrease of \$279 was primarily due to decreased employee compensation and related benefit expenses, partially offset by the recognition of \$622 of deferred equity offering costs related to Aspire as previously discussed. Employee compensation and related benefit expenses were \$1,093 and \$1,785 for the six months ended June 30, 2017 and 2016, respectively. The \$692 decrease in employee compensation and related benefits is due primarily to decreases in headcount during the second quarter of 2016 in connection with our strategic restructuring.

Other Income (Expense), Net

	Six Months Ended June 30,		Change
	2017	2016	
Total other income (expense), net	\$ (47)	\$ 4	\$ (51)

Other income (expense), net, reflects net expense of \$47 and net income of \$4 for the six months ended June 30, 2017 and 2016, respectively. The net expense during the six months of 2017 is primarily the result of interest charges recorded in connection with payments we are making through May 2018 related to the early termination of a third party manufacturing agreement. Other income, net, shown for the 2016 period, is primarily the result of income from our investment in money market funds and realized net gains from foreign currency translation.

Discontinued Operations

During the six months ending June 30, 2017 and 2016, we recognized a net loss from discontinued operations of \$0 and \$3,649, respectively.

Liquidity and Capital Resources

Currently, we require cash to fund our working capital needs, to purchase capital assets, to pay our operating lease obligations and other operating costs. The primary sources of our liquidity have historically included equity financings, government research grants and income earned on cash and short-term investments.

Since our inception, we have incurred significant expenses related to our research, development and commercialization efforts. With the exception of 2012, when we recognized \$38,885 of deferred revenue from a terminated joint venture, we have recorded losses since our initial founding, including the three and six months ended June 30, 2017. As of June 30, 2017, we had an accumulated deficit of \$338,176. Our total unrestricted cash and cash equivalents as of June 30, 2017, were \$3,011 as compared to \$7,309 at December 31, 2016. As of June 30, 2017, we had no outstanding debt.

Our cash and cash equivalents at June 30, 2017, were held for working capital purposes. As of June 30, 2017, we had restricted cash of \$432. Restricted cash consists of \$307 held in connection with the lease agreement for our Woburn, Massachusetts facility and \$125 held in connection with our corporate credit card program.

Investments are made in accordance with our corporate investment policy, as approved by our Board of Directors. The primary objective of this policy is to preserve principal and investments are limited to high quality corporate debt, U.S. Treasury bills and notes, money market funds, bank debt obligations, municipal debt obligations and asset-backed securities. The policy establishes maturity limits, concentration limits, and liquidity requirements. As of June 30, 2017, we were in compliance with this policy.

On July 7, 2017, we completed an offering of our securities. Net proceeds from the transaction were approximately \$2,012. As a result of acquiring these additional funds, we anticipate that our current cash resources will be sufficient to fund operations and meet our obligations, including our restructuring obligations, when due, into the first quarter of 2018. This forecast of cash resources is forward-looking information that involves risks and uncertainties, and the actual amount of expenses could vary materially and adversely as a result of a number of factors. We have adopted the new guidance of ASU No. 2014-15, *Presentation of Financial Statements-Going Concern (Subtopic 205-40)* in order to determine whether there is substantial doubt about our ability to continue as a going concern for one year after the date our financial statements are issued. Our ability to continue operations after our current cash resources are exhausted depends on our ability to obtain additional financing through, among other sources, public or private equity financing, secured or unsecured debt financing, equity or debt bridge financing, additional government research grants or collaborative arrangements with third parties, as to which no assurances can be given. We do not know whether additional financing will be available on terms favorable or acceptable to us when needed, if at all. If adequate additional funds are not available when required, or if we are unsuccessful in entering collaborative arrangements for further research, we may be forced to curtail our research efforts, explore strategic alternatives and/or wind down our operations and pursue options for liquidating our remaining assets, including intellectual property and equipment. Based on our cash forecast, we have determined that our present capital resources are not sufficient to fund our planned operations for a twelve month period, and therefore, raise substantial doubt about our ability to continue as a going concern.

In October 2015, we entered into a common stock purchase agreement with Aspire Capital Fund, LLC, (“Aspire”) under which Aspire was committed to purchase, at our direction, up to an aggregate of \$20,000 of shares of our common stock over a 30 month period. Transactions under the Aspire agreement are required to be variable rate transactions which are prohibited by the securities agreement enacted in conjunction with the Company's July 7, 2017 offering. As such, the Aspire facility is no longer available to us as a source of capital.

During 2016, we completed a strategic restructuring of our operations to focus on the Yield10 Bioscience business. We reduced staffing levels to twenty full-time employees and incurred restructuring costs for contract termination and employee post-termination benefits of approximately \$3,513 which were primarily reflected in discontinued operations within our statement of operations for that year. At June 30, 2017, \$1,410 of these restructuring charges remain outstanding, and they are reflected as liabilities in our condensed consolidated balance sheet and are expected to be paid out through May 2018. We currently anticipate that we will use approximately \$8,000 - \$8,500 of cash during 2017, including anticipated payments for restructuring costs. This estimated cash usage for operations is significantly less than cash used for operations of \$14,700 during the year ended December 31, 2016. The reduction is primarily the result of our restructuring efforts.

We will need additional capital to fully implement our business, operating and development plans and to support our capital needs. The timing, structure and vehicles for obtaining future financing are under consideration, but there can be no assurance that such financing efforts will be successful. If we do not receive additional funding during 2017, we may be forced to wind down our business, or have to delay, scale back or otherwise modify our business plans, research and development activities and other operations, and/or seek strategic alternatives.

If we issue equity or debt securities to raise additional funds, (i) we may incur fees associated with such issuance, (ii) our existing stockholders will experience dilution from the issuance of new equity securities, (iii) we may incur ongoing interest expense and be required to grant a security interest in our assets in connection with any debt issuance, and (iv) the new equity or debt securities may have rights, preferences and privileges senior to those of our existing stockholders. In addition, utilization of our net operating loss and research and development credit carryforwards may be subject to significant annual limitations under Section 382 of the Internal Revenue Code of 1986 due to ownership changes resulting from future equity financing transactions. If we raise additional funds through collaboration, licensing or other similar arrangements, it may be necessary to relinquish valuable rights to our potential products or proprietary technologies, or grant licenses on terms that are not favorable to us.

Net cash used for operating activities was \$4,286 during the six months ended June 30, 2017, compared to net cash used for operating activities during the six months ended June 30, 2016 of \$7,616 . Net cash used for operations during the six months ended June 30, 2017 primarily reflects the net loss of \$4,819 partially offset by non-cash expenses, including stock-based compensation expense of \$663 , depreciation expense of \$106 and 401(k) stock matching contribution expense of \$46 .

The following are the non-cash operating items related to discontinued operations for the three and six months ended June 30, 2016.

	Three Months Ended June 30, 2016	Six Months Ended June 30, 2016
Non-cash operating items:		
Depreciation	\$ 115	\$ 216
Charge for 401(k) company common stock match	\$ 43	\$ 120
Stock-based compensation	\$ 35	\$ 198

Net cash of \$0 was used by investing activities during the six months ended June 30, 2017, compared to net cash used by investing activities during the six months ended June 30, 2016 of \$665 , including acquisitions of property and equipment related to our new Woburn facility of \$389 and an increase in restricted cash of \$307 in connection with entering into a letter of credit to secure the Woburn lease.

Net cash of \$12 was used by financing activities during the six months ended June 30, 2017, compared to net cash used by activities of \$274 during the six months ended June 30, 2016. The amounts reflect our payment of minimum federal, state or Canadian provincial income tax withholdings associated with employee RSUs that vested during each six month period. As RSUs vest, we withhold a number of shares with an aggregate fair market value equal to the minimum tax withholding amount from the common stock issuable at the vest date.

Off-Balance Sheet Arrangements

As of June 30, 2017 , we had no off-balance sheet arrangements as defined in Item 303(a)(4) of the Securities and Exchange Commission's Regulation S-K.

Related Party Transactions

See Note 10, "License Agreements and Related Parties," to our condensed consolidated financial statements included in this Quarterly Report on Form 10-Q for a full description of our related party transactions.

Recent Accounting Pronouncements

See Note 3, "Recent Accounting Pronouncements," to our condensed consolidated financial statements included in this Quarterly Report on Form 10-Q for a full description of recent accounting pronouncements.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.

There have been no material changes in information regarding our exposure to market risk, as described in Item 7A of our Annual Report on Form 10-K for the year ended December 31, 2016.

ITEM 4. CONTROLS AND PROCEDURES.

Evaluation of Disclosure Controls and Procedures

As of June 30, 2017, we conducted an evaluation under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Accounting Officer regarding the effectiveness of the design and operation of our disclosure controls and procedures as defined in Rule 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934 (the "Exchange Act"). The term "disclosure controls and procedures" means controls and other procedures of a company that are designed to ensure that information required to be disclosed by the company in reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the requisite time periods and that such disclosure controls and procedures were effective to ensure that information required to be disclosed by the company in the reports that it files or submits under the Exchange Act is accumulated and communicated to its management, including its principal executive and principal accounting officers, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure. Based on this evaluation, our Chief Executive Officer and Chief Accounting Officer concluded that our disclosure controls and procedures (as defined in the Exchange Act Rules 13a-15(e) and 15d-15(e)) were not effective as of June 30, 2017 due to the material weakness in internal controls over financial reporting described below.

As disclosed in Item 9A of our Annual Report on Form 10-K for the year ended December 31, 2016, our management concluded that our internal control over financial reporting was not effective at December 31, 2016. As of December 31, 2016, management identified a material weakness in internal control over financial reporting related to accounting for stock option modifications.

We are undertaking steps during 2017 to remediate the causes of the internal control failure related to our accounting for the stock award modification. Specifically, we are performing the following steps:

- Our accounting staff responsible for preparing and reviewing stock based compensation will complete renewed training in the accounting for stock award modifications as provided by current accounting standards, including FASB Accounting Standards Codification Topic 718, *Compensation – Stock Compensation*;
- We will assess whether our licensed stock compensation software, as used by us, was a contributing cause of the error, and if limitations exist in the calculation of stock compensation expense for stock award modifications, we will develop alternative procedures to ensure the accuracy of our calculations;
- We will undertake additional staff training to ensure that we correctly utilize the software application for future stock award modifications as appropriate; and
- We will develop and implement enhanced policies, procedures and controls related to the calculation of stock based compensation when a stock award modification occurs.

We are committed to maintaining a strong internal control environment, and believe that these remediation efforts will represent significant improvements in our control environment. In the history of the company, stock award modifications have rarely occurred, if at all, before the ones that were recorded during the year ended December 31, 2016. In the event that we modify other stock awards, we will apply our enhanced procedures and controls to ensure a similar error does not occur.

We expect that our remediation efforts will continue through 2017, although the material weakness will not be considered remediated until the applicable internal controls operate for a sufficient period of time, and management has concluded, through testing, that these controls are operating effectively.

Changes in Internal Control over Financial Reporting

With the exception of the material weakness and associated remediation plan related to the calculation of stock compensation expense discussed above, there have been no changes in our internal control over financial reporting identified in connection with the evaluation required by Rule 13a-15(d) of the Exchange Act) that occurred during the quarter ended June 30, 2017 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II — OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS.

From time to time, the Company may be subject to legal proceedings and claims in the ordinary course of business. The Company is not currently aware of any such proceedings or claims that it believes will have, individually or in the aggregate, a material adverse effect on the business, financial condition or the results of operations.

ITEM 1A. RISK FACTORS.

Our business is subject to numerous risks. We caution you that the following important factors, among others, could cause our actual results to differ materially from those expressed in forward-looking statements made by us or on our behalf in filings with the Securities and Exchange Commission, press releases, communications with investors and oral statements. Any or all of our forward-looking statements in this Quarterly Report on Form 10-Q and any other public statements we make may turn out to be wrong. They can be affected by inaccurate assumptions we might make or by known or unknown risks and uncertainties. Many factors mentioned in the discussion below will be important in determining future results. Consequently, no forward-looking statement can be guaranteed. Actual future results may differ materially from those anticipated in forward-looking statements. We undertake no obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise. You are advised, however, to consult any further disclosure we make in our reports filed with the Securities and Exchange Commission.

(All dollar amounts, except per share amounts, are stated in thousands.)

Risks Relating to our Financial Statements

We will be required to raise additional funds to finance our operations and remain a going concern; we may not be able to do so when necessary, and/or the terms of any financings may not be advantageous to us.

As of June 30, 2017, we held unrestricted cash and cash equivalents of \$3,011. On July 7, 2017, we completed an offering of the Company's securities. Net proceeds from the transaction were approximately \$2,012. Our present capital resources may not be sufficient to fund our planned operations for a twelve month period, and therefore, raise substantial doubt about our ability to continue as a going concern.

In 2016, we completed a strategic restructuring under which Yield10 Bioscience has become our core business, with a focus on developing disruptive technologies for step-change improvements in crop yield to enhance global food security.

We will require additional capital resources to support the implementation of this new strategy and we may pursue one or more of a variety of financing options, including public or private equity financing, secured or unsecured debt financing, equity or debt bridge financing, as well as licensing or other collaborative arrangements. There can be no assurance that our financing efforts will be successful. If we are not able to secure such additional capital resources or otherwise fund our operations, we may be forced to explore strategic alternatives and/or wind down our operations and pursue options for liquidating our remaining assets, including intellectual property and equipment.

We continue to face significant challenges and uncertainties. Our future revenues, expenses and cash usage will depend on the successful execution of our strategic plans related to Yield10 Bioscience. Adequate financing to implement our new strategy may not be available. Available capital resources may be consumed more rapidly than currently expected due to any or all of the following:

- higher restructuring costs than anticipated;
- lower than expected revenues from grants, licenses, and service fees related to our Yield10 Bioscience technologies;
- changes we may make to the business that affect ongoing operating expenses;
- further changes we may make to our business strategy;
- changes in our research and development spending plans; and
- other items affecting our forecasted level of expenditures and use of cash resources.

If we issue equity or debt securities to raise additional funds, we may incur fees associated with such issuances, our existing stockholders may experience dilution from the issuance of new equity securities, we may incur ongoing interest expense and be required to grant a security interest in our assets in connection with any debt issuance, and the new equity or

debt securities may have rights, preferences and privileges senior to those of our existing stockholders. In addition, utilization of our net operating loss and research and development credit carryforwards may be subject to significant annual limitations under Section 382 of the Internal Revenue Code of 1986 due to ownership changes resulting from equity financing transactions. If we raise additional funds through collaboration, licensing or other similar arrangements, it may be necessary to relinquish valuable rights to our potential products or proprietary technologies, or grant licenses on terms that are not favorable to us.

We have a history of net losses and our future profitability is uncertain.

With the exception of 2012, when we recognized \$38,885 of deferred revenue from a terminated joint venture, we have recorded losses since our inception. At June 30, 2017, our accumulated deficit was \$338.2 million. Since 1992, we have been engaged primarily in research and development and early-stage commercial activities. Because our crop science technology is at an early stage of development, we cannot be certain that the Yield10 Bioscience business will generate sufficient revenue to become profitable. We expect to have significant losses and negative cash flow for at least the next several years, as we incur additional costs and expenses for the continued development of our technology, including the ongoing expenses of research, development, commercialization and administration. The amount we spend will impact our need for capital resources as well as our ability to become profitable and this will depend, in part, on the number of new technologies that we attempt to develop. We may not achieve any or all of these goals and, thus, we cannot provide assurances that we will ever be profitable or achieve significant revenues.

We have recently changed our corporate strategy to focus on the crop science industry, and our technologies in this area are at a very early stage of development. We may never commercialize a technology or product that will generate meaningful, or any, revenues.

In July 2016, our Board of Directors approved a plan to implement a strategic restructuring under which Yield10 Bioscience has become our core business. As part of the restructuring, we discontinued our biopolymer operations, eliminated positions in our biopolymer operations and corporate organization, and sold certain of our biopolymer business assets. We currently anticipate that our annual net cash used in operations, including anticipated payments for restructuring costs, will be approximately \$8,000 - \$8,500 during 2017, compared to approximately \$25,000 prior to the restructuring.

The remaining cash restructuring costs associated with our strategic repositioning have various payment due dates through May 2018 and are estimated at approximately \$1,410 as of June 30, 2017. However, the reduction in cash used in operations resulting from the restructuring may be less than expected. If we are not successful in reducing our cash used in operations, we may require more financing than anticipated or we may be forced to wind down our remaining operations.

The products and technologies we are currently developing as a result of our strategic repositioning are at a very early stage of development, and the process of developing them is lengthy and uncertain. In addition, our current management has limited experience in developing technologies for the crop science industry, and has never commercialized a product or technology in this industry. We may never reach a point at which our efforts result in products that allow us to achieve revenue from their license or sale.

Our recently implemented reverse stock split could adversely affect the market liquidity of our common stock .

On May 24, 2017, our stockholders approved an amendment to our restated certificate of incorporation, as amended, and authorized our Board of Directors, if in their judgment they deemed it necessary, to effect a reverse stock split of our common stock at a ratio in the range of 1:2 to 1:10. We implemented this reverse stock split on May 30, 2017 with a ratio of 1:10. We cannot predict whether the reverse stock split will increase the market price for our common stock on a sustained basis. The history of similar stock split combinations for companies in like circumstances is varied, and we cannot predict whether:

- the reverse stock split will result in a sustained per share price that will attract brokers and investors who do not trade in lower priced stocks;
- the reverse stock split will result in a per share price that will increase our ability to attract and retain employees and other service providers; or
- the market price per share will remain at a level in excess of the \$1.00 minimum bid price as required by NASDAQ, or that we will otherwise meet the requirements of NASDAQ for continued inclusion for trading on The NASDAQ Capital Market.

There can be no assurance that we will be able to comply with the continued listing standards of The NASDAQ Capital Market.

We cannot assure you that we will be able to comply with the standards that we are required to meet in order to maintain a listing of our common stock on The NASDAQ Capital Market. Our common stock is listed on The NASDAQ Capital Market, and NASDAQ provides various continued listing requirements that a company must meet in order for its stock to continue trading on The NASDAQ Capital Market. Among these requirements is the requirement that our stock trades at a minimum closing bid price of \$1.00 per share. On June 30, 2016, we received a deficiency letter from The NASDAQ Stock Market which provided us a grace period of 180 calendar days, or until December 27, 2016, to regain compliance with the minimum bid price requirement; we subsequently received an additional 180 days (until June 26, 2017) to regain compliance with the requirement. On May 24, 2017, our stockholders approved an amendment to our restated certificate of incorporation, as amended, authorizing a reverse stock split of our common stock. A 1-for-10 ratio for the reverse stock split was subsequently approved by our Board of Directors, and the reverse stock split took effect on May 30, 2017. As a result of the reverse stock split, every ten shares of our common stock were automatically combined and converted into one issued and outstanding share of our common stock, with no change in the par value per share. All share amounts, per share amounts and share prices in this Quarterly Report have been adjusted to reflect the reverse stock split. As of June 12, 2017 we regained compliance with the minimum bid price requirement.

If we fail to continue to meet all applicable NASDAQ Capital Market requirements in the future and NASDAQ determines to delist our common stock, the delisting could substantially decrease trading in our common stock and adversely affect the market liquidity of our common stock; adversely affect our ability to obtain financing on acceptable terms, if at all, for the continuation of our operations; and harm our business. Additionally, the market price of our common stock may decline further and stockholders may lose some or all of their investment.

A portion of our revenue to date has been generated from government grants; continued availability of government grant funding is uncertain and contingent on compliance with the requirements of the grant.

Historically, a portion of our revenue has been generated from payments to us from government entities in the form of government grants whereby we are reimbursed for certain expenses incurred in connection with our research and development activities, subject to our compliance with the specific requirements of the applicable grant, including rigorous documentation requirements. To the extent that we do not comply with these requirements, our expenses incurred may not be reimbursed. Any of our existing grants or new grants that we may obtain in the future may be terminated or modified.

Our ability to obtain grants or incentives from government entities in the future is subject to the availability of funds under applicable government programs and approval of our applications to participate in such programs. The application process for these grants and other incentives is highly competitive. We may not be successful in obtaining any additional grants, loans or other incentives. Recent political focus on reducing spending at the U.S. federal and state levels may continue to reduce the scope and amount of funds dedicated to crop science products, if such funds will continue to be available at all. To the extent that we are unsuccessful in being awarded any additional government grants in the future, we would lose a potential source of revenue.

Our government grants may subject us to government audits, which could expose us to penalties.

We may be subject to audits by government agencies as part of routine audits of our activities funded by our government grants. As part of an audit, these agencies may review our performance, cost structures and compliance with applicable laws, regulations and standards and the terms and conditions of the grant. If any of our costs are found to be allocated improperly, the costs may not be reimbursed and any costs already reimbursed for such contract may have to be refunded. Accordingly, an audit could result in a material adjustment to our results of operations and financial condition. Moreover, if an audit uncovers improper or illegal activities, we may be subject to civil and criminal penalties and administrative sanctions.

Risks Relating to our Yield10 Bioscience Crop Science Program

Our crop science product development cycle is lengthy and uncertain and will depend heavily on future collaborative partners.

The technology and processes used in our crop science program and the application of our technology to enhance photosynthetic efficiency of crops are at an early stage of development. Research and development in the seed, agricultural biotechnology, and larger agriculture industries is expensive and prolonged and entails considerable uncertainty. Completion of our development work will require a significant investment of both time and money, if it can be completed at all. We expect that collaborations with established agricultural industry companies will be required to successfully develop and commercialize our innovations. The industry is highly concentrated and dominated by a small number of large players, which could impact efforts to form such collaborations. We may not be successful in establishing or maintaining suitable partnerships, and may not be able to negotiate collaboration agreements having terms satisfactory to us or at all. In addition, industry collaborators have significant resources and development capabilities and may develop products and technologies that compete with or negatively impact the development and commercialization of our technologies.

Our crop science program may not be successful in developing commercial products.

We and our potential future collaborators may spend many years and dedicate significant financial and other resources developing traits that will never be commercialized. Seeds containing the traits that we develop may never become commercialized for any of the following reasons:

- our traits may not be successfully validated in the target crops;
- our traits may not achieve our targeted yield improvements;
- we may not be able to secure sufficient funding to progress our traits through development and commercial validation;
- our traits may not have the desired effect sought by future collaborators for the relevant crops;
- development and validation of traits, particularly during field trials, may be adversely affected by environmental or other circumstances beyond our control;
- we or our future collaborators may be unable to obtain the requisite regulatory approvals for the seeds containing our traits;
- competitors may launch competing or more effective seed traits or seeds;
- a market may not exist for seeds containing our traits or such seeds may not be commercially successful;
- future collaborators may be unable to fully develop and commercialize products containing our seed traits or may decide, for whatever reason, not to commercialize such products; and
- we may be unable to patent our traits in the necessary jurisdictions.

If any of these things were to occur, it could have a material adverse effect on our business and our results of operations. Research and development in the crop science industry is expensive and prolonged, and entails considerable uncertainty. Because of the stringent product performance and safety criteria applied in development of crop science products, products currently under development may neither survive the development process nor ultimately receive the requisite regulatory approvals needed to market such products. Even when such approvals are obtained, there can be no assurance that a new product will be commercially successful. In addition, research undertaken by competitors may lead to the launch of competing or improved products, which may affect sales of any products that we are able to develop.

Even if we or our collaborators are successful in developing commercial products that incorporate our traits, such products may not achieve commercial success.

Our strategy depends upon our or our collaborators' ability to incorporate our traits into a wide range of crops in significant markets and geographies. Even if we or our collaborators are able to develop commercial products that incorporate our traits, any such products may not achieve commercial success for one or more of the following reasons, among others:

- products may fail to be effective in particular crops, geographies, or circumstances, limiting their commercialization potential;
- our competitors may launch competing or more effective traits or products;
- significant fluctuations in market prices for agricultural inputs and crops could have an adverse effect on the value of our traits;
- farmers are generally cautious in their adoption of new products and technologies, with conservative initial purchases and proof of product required prior to widespread deployment, and accordingly, it may take several growing seasons for farmers to adopt our or our collaborators' products on a large scale; and
- we may not be able to produce high-quality seeds in sufficient amounts to meet demand.

Our financial condition and results of operations could be materially and adversely affected if any of the above were to occur.

Consumer and government resistance to genetically modified organisms may negatively affect the ability to commercialize crops containing our traits, as well as our public image.

Food and feed made from genetically modified seeds are not accepted by many consumers and in certain countries production of certain genetically modified crops is effectively prohibited, including throughout the European Union, due to concerns over such products' effects on food safety and the environment. The high public profile of the biotechnology industry in food and feed production, and a lack of consumer acceptance of products to which we have devoted substantial resources, could have a negative impact on the commercial success of products that incorporate our traits and could materially and adversely affect our ability to obtain collaborations and to finance our crop science program. Further, we could incur substantial liability and/or legal expenses if there are claims that genetically-engineered crops damage the environment or contaminate other farm crops. This could distract our management and cause us to spend resources defending against such claims.

Actions by consumer groups and others may disrupt research and development or production of genetically modified seeds. In addition, some government authorities have enacted, and others in the future might enact, regulations regarding genetically modified organisms, which may delay and limit or even prohibit the development and sale of such products.

We may not be able to obtain or maintain the necessary regulatory approvals for our products, which could restrict our ability to sell those products in some markets.

Seeds containing the traits that we develop must receive regulatory approval before they can be marketed, but we may not be able to obtain such approvals. Regulatory standards and procedures in the crop science industry are continuously changing, and responding to these changes and meeting existing and new requirements will be costly and burdensome. Even if we are able to obtain approvals for the seeds containing the traits that we develop, changing regulatory standards may affect our ability to maintain compliance with such regulatory standards.

If ongoing or future field trials conducted by us or our collaborators are unsuccessful, we may be unable to complete the regulatory process for, or commercialize, our products in development on a timely basis.

The successful completion of multi-year, multi-site field trials is critical to the success of product development and marketing efforts for products containing our traits. If our ongoing or future field trials, or those of our collaborators, are unsuccessful or produce inconsistent results or unanticipated adverse effects on crops, or if we or our collaborators are unable to collect reliable data, regulatory review of products in development containing our traits could be delayed or commercialization of products in development containing our traits may not be possible. In addition, more than one growing season may be required to collect sufficient data to develop or market a product containing our traits, and it may be necessary to collect data from different geographies to prove performance for customer adoption. Even in cases where field trials are successful, we cannot be certain that additional field trials conducted on a greater number of acres, or in different crops or geographies, will be successful. Generally, our collaborators conduct these field trials or we pay third parties, such as farmers, consultants, contractors, and universities, to conduct field trials on our behalf. Poor trial execution or data collection, failure to follow required agronomic practices, regulatory requirements, or mishandling of products in development by our collaborators or these third parties could impair the success of these field trials.

Many factors that may adversely affect the success of our field trials are beyond our control, including weather and climatic variations, such as drought or floods, severe heat or frost, hail, tornadoes and hurricanes, uncommon pests and diseases, or acts of protest or vandalism. For example, if there was prolonged or permanent disruption to the electricity, climate control, or water supply operating systems in our greenhouses or laboratories, the crops in which we or our collaborators are testing our traits and the samples we or our collaborators store in freezers, both of which are essential to our research and development activities including field tests, could be severely damaged or destroyed, adversely affecting these activities and thereby our business and results of operations. Unfavorable weather conditions including drought or excessive rain, or fluctuations in temperature, can also reduce both acreage planted and incidence, or timing of, certain crop diseases or pest infestations, each of which may halt or delay our field trials. Any field test failure we may experience may not be covered by insurance and, therefore, could result in increased cost for the field trials and development of our traits, which may negatively impact our business, results of operations, and ability to secure financing. Such factors outside of our control can create substantial volatility relating to our business and results of operations.

Competition in traits and seeds is intense and requires continuous technological development, and, if we are unable to compete effectively, our financial results will suffer.

We face significant competition in the markets in which we operate. The markets for traits and agricultural biotechnology products are intensely competitive and rapidly changing. In most segments of the seed and agricultural biotechnology market, the number of products available to consumers is steadily increasing as new products are introduced. At the same time, the expiration of patents covering existing products reduces the barriers to entry for competitors. We may be unable to compete successfully against our current and future competitors, which may result in price reductions, reduced margins and the inability to achieve market acceptance for products containing our traits. In addition, most of our competitors have substantially greater financial, marketing, sales, distribution, research and development, and technical resources than us, and some of our collaborators have more experience in research and development, regulatory matters, manufacturing, and marketing. We anticipate increased competition in the future as new companies enter the market and new technologies become available. Our technologies may be rendered obsolete or uneconomical by technological advances or entirely different approaches developed by one or more of our competitors, which will prevent or limit our ability to generate revenues from the commercialization of our traits being developed.

Our business is subject to various government regulations and if we or our collaborators are unable to timely complete the regulatory process for our products in development, our or our collaborators' ability to market our traits could be delayed, prevented or limited.

Our business is generally subject to two types of regulations: regulations that apply to how we and our collaborators operate and regulations that apply to products containing our traits. We apply for and maintain the regulatory permits necessary for our operations, particularly those covering our field trials, which we or our collaborators apply for and maintain regulatory approvals necessary for the commercialization of products containing our seed traits. Even if we and our collaborators make timely and appropriate applications for regulatory permits for our field trials, government delays in issuing such permits can significantly affect the development timelines for our traits, particularly if the planting period for a crop growing season expires before the necessary permits are obtained. In most of our key target markets, regulatory approvals must be received prior to the importation of genetically modified products. These regulatory processes are complex. For example, the U.S. federal government's regulation of biotechnology includes, but is not limited to, the USDA, which regulates the import, field testing, and interstate movement of genetically modified plants, and the FDA, which regulates foods derived from new plant varieties.

In addition to regulation by the U.S. government, products containing our traits may be subject to regulation in each country in which such products are tested or sold. International regulations may vary from country to country and from those of the United States. The difference in regulations under U.S. law and the laws of foreign countries may be significant and, in order to comply with the laws of foreign countries, we may have to implement global changes to our products or business practices. Such changes may result in additional expense to us and either reduce or delay product development or sales. Additionally, we or our collaborators may be required to obtain certifications or approvals by foreign governments to test and sell the products in foreign countries.

The regulatory process is expensive and time-consuming, and the time required to complete the process is difficult to predict and depends upon numerous factors, including the substantial discretion of the regulatory authorities. We have not completed all phases of the regulatory process for any of our traits in development. Our traits could require a significantly longer time to complete the regulatory process than expected, or may never gain approval, even if we and our collaborators expend substantial time and resources seeking such approval. The time required for regulatory approval, or any delay or denial of such approval, could negatively impact our ability to generate revenues and to achieve profitability and finance our ongoing operations. In addition, changes in regulatory review policies during the development period of any of our traits, changes in, or the enactment of, additional regulations or statutes, or changes in regulatory review practices for a submitted product application may cause a delay in obtaining approval or result in the rejection of an application for regulatory approval. Regulatory approval, if obtained, may be made subject to limitations on the intended uses for which we or our collaborators may market a product. These limitations could adversely affect our potential revenues. Failure to comply with applicable regulatory requirements may, among other things, result in fines, suspensions of regulatory approvals, product recalls, product seizures, operating restrictions, and criminal prosecution.

Our work with the Smart Carbon Grid for Crops and the T3 Platform has identified promising potential targets for gene editing, and we believe that these approaches may be subject to less regulatory complexity in the U.S. during development and along the path to commercialization. Gene editing techniques, including CRISPR/Cas9, which involve making small targeted changes to the DNA of a target organism, have been of interest to the agricultural biotech industry because this approach is believed to have the potential to significantly reduce development costs and regulatory timelines for crop trait development and market introduction. Recent statements by the United States Department of Agriculture - Animal and Plant Health Inspection Service (USDA-APHIS) regarding the regulatory path for genetically edited plants and mushrooms suggest

that they will not be subject to regulations typically used for genetically modified crops (i.e., they will not be considered “regulated articles”) if the modified organisms do not contain any remaining genetic elements from the procedure used for gene editing. While we believe that these statements suggest that crops that are gene edited may not be subject to certain GMO regulations in the U.S., we cannot assure you that this regulatory path will be found to apply to any of our seed yield traits or that the regulatory agencies will not change this approach to the regulation of genome editing or introduce new regulatory procedures applicable to such technologies.

The products of third parties or the environment may be negatively affected by the unintended appearance of our yield trait genes.

The potential for unintended but unavoidable trace amounts, sometimes called “adventitious presence,” of yield trait genes in conventional seed, or in the grain or products produced from conventional or organic crops, could affect general public acceptance of these traits. Trace amounts of yield trait genes may unintentionally be found outside our containment area in the products of third parties, which may result in negative publicity and claims of liability brought by such third parties against us. Furthermore, in the event of an unintended dissemination of our genetically engineered materials to the environment, we could be subject to claims by multiple parties, including environmental advocacy groups, as well as governmental actions such as mandated crop destruction, product recalls or additional stewardship practices and environmental cleanup or monitoring. The occurrence of any of these events could have a material adverse effect on our business and results of operations.

We rely on third parties to conduct, monitor, support, and oversee field trials and, in some cases, to maintain regulatory files for those products in development, and any performance issues by third parties, or our inability to engage third parties on acceptable terms, may impact our or our collaborators’ ability to complete the regulatory process for or commercialize such products.

We rely on third parties to conduct, monitor, support, and oversee field trials. As a result, we have less control over the timing and cost of these trials than if we conducted these trials with our own personnel. If we are unable to maintain or enter into agreements with these third parties on acceptable terms, or if any such engagement is terminated prematurely, we may be unable to conduct and complete our trials in the manner we anticipate. In addition, there is no guarantee that these third parties will devote adequate time and resources to our studies or perform as required by our contract or in accordance with regulatory requirements, including maintenance of field trial information regarding our products in development. If any of these third parties fail to meet expected deadlines, fail to transfer to us any regulatory information in a timely manner, fail to adhere to protocols, or fail to act in accordance with regulatory requirements or our agreements with them, or if they otherwise perform in a substandard manner or in a way that compromises the quality or accuracy of their activities or the data they obtain, then field trials of our traits in development may be extended or delayed with additional costs incurred, or our data may be rejected by the applicable regulatory agencies. Ultimately, we are responsible for ensuring that each of our field trials is conducted in accordance with the applicable protocol and with legal, regulatory and scientific standards, and our reliance on third parties does not relieve us of our responsibilities.

If our relationship with any of these third parties is terminated, we may be unable to enter into arrangements with alternative parties on commercially reasonable terms, or at all. Switching or adding service providers can involve substantial cost and require extensive management time and focus. Delays may occur, which can materially impact our ability to meet our desired development timelines. If we are required to seek alternative service arrangements, the resulting delays and potential inability to find a suitable replacement could materially and adversely impact our business.

In addition, recently there has been an increasing trend towards consolidation in the agricultural biotechnology industry. Consolidation among our competitors and third parties upon whom we rely could lead to a changing competitive landscape, capabilities, and strategic priorities among potential service providers, which could have an adverse effect on our business and operations.

If we lose key personnel or are unable to attract and retain necessary talent, we may be unable to develop or commercialize our products under development.

We are highly dependent on our key technical and scientific personnel, who possess unique knowledge and skills related to our research and technology. If we were to lose the services of these individuals, we may be unable to readily find suitable replacements with comparable knowledge and the experience necessary to advance the research and development of our products. Because of the unique talents and experience of many of our scientific and technical staff, competition for our personnel is intense. Our ability to attract and retain qualified employees may be affected by our efforts to manage cash usage, including reductions in total cash compensation. The loss of key personnel or our inability to hire and retain personnel who have the required expertise and skills could have a material adverse effect on our research and development efforts, our business, and our ability to secure additional required financing.

Risks Relating to Intellectual Property

Patent protection for our technologies is both important and uncertain.

Our commercial success may depend in part on our obtaining and maintaining patent protection for our technologies in the United States and other jurisdictions, as well as successfully enforcing and defending this intellectual property against third-party challenges. If we are not able to obtain or defend patent protection for our technologies, then we will not be able to exclude competitors from developing or marketing such technologies, and this could negatively impact our ability to generate sufficient revenues or profits from product sales and/or licensing to justify the cost of development of our technologies and to achieve or maintain profitability. Our currently issued patents relate to our historical business and have expiration dates ranging from 2020 through 2030. New outstanding patent applications owned by or licensed to us relating to crop yield improvements have filing dates ranging from 2013 through 2017.

Our patent position involves complex legal and factual questions. Accordingly, we cannot predict the breadth of claims that may be allowed or enforced in our patents or in third-party patents. Patents may not be issued for any pending or future pending patent applications owned by or licensed to us, and claims allowed under any issued patent or future issued patent owned or licensed by us may not be valid or sufficiently broad to protect our technologies. Moreover, we may be unable to protect certain of our intellectual property in the United States or in foreign countries. Foreign jurisdictions may not afford the same protections as U.S. law, and we cannot ensure that foreign patent applications will have the same scope as the U.S. patents. There will be many countries in which we will choose not to file or maintain patents because of the costs involved. Competitors may also design around our patents or develop competing technologies.

Additionally, any issued patents owned by or licensed to us now or in the future may be challenged, invalidated, or circumvented. We could incur substantial costs to bring suits or other proceedings in which we may assert or defend our patent rights or challenge the patent rights of third parties. An unfavorable outcome of any such litigation could have a material adverse effect on our business and results of operations.

Third parties may claim that we infringe their intellectual property, and we could suffer significant litigation or licensing expense as a result.

Various U.S. and foreign issued patents and pending patent applications owned by third parties exist in areas relevant to our products and processes. We could incur substantial costs to challenge third party patents. If third parties assert claims against us or our customers alleging infringement of their patents or other intellectual property rights, we could incur substantial costs and diversion of management resources in defending these claims, and the defense of these claims could have a material adverse effect on our business. In addition, if we are unsuccessful in defending against these claims, these third parties may be awarded substantial damages, as well as injunctive or other equitable relief against us, which could effectively block our ability to make, use, sell, distribute, or market our technologies and services based on our technologies in the United States or abroad. Alternatively, we may seek licenses to such third party intellectual property. However, we may be unable to obtain these licenses on acceptable terms, if at all. Our failure to obtain the necessary licenses or other rights could prevent the sale, manufacture, or distribution of some of our products based on our technologies and, therefore, could have a material adverse effect on our business.

Portions of our crop science technology are owned by or subject to retained rights of third parties.

We have licensed and optioned from academic institutions certain patent rights that may be necessary or important to the development and commercialization of our crop science technology. These licenses and options may not provide exclusive rights to use such intellectual property in all fields of use in which we may wish to develop or commercialize our technology. If we fail to timely exercise our option rights and/or we are unable to negotiate license agreements for optioned patent rights on acceptable terms, the academic institutions may offer such patent rights to third parties. If we fail to comply with our obligations under these license agreements, or if we are subject to a bankruptcy or insolvency proceeding, the licensor may have the right to terminate the license. In some circumstances, we may not have the right to control the preparation, filing and prosecution of licensed patent applications or the maintenance of the licensed patents. Therefore, we cannot be certain that these patents and applications will be prosecuted, maintained and enforced in a manner consistent with the best interests of our business. Furthermore, the research resulting in certain of our licensed and optioned patent rights was funded by the U.S. government. As a result, the government may have certain rights, or march-in rights, to such patent rights and technology.

We may not be successful in obtaining necessary rights to additional technologies for the development of our products through acquisitions and in-licenses.

We may be unable to acquire or in-license additional technologies from third parties that we decide we need in order to develop our business. A number of more established companies may also pursue strategies to license or acquire crop science technologies that we may consider attractive. These established companies may have a competitive advantage over us due to their size, cash resources and greater development and commercialization capabilities. Any failure on our part to reach an agreement for any applicable intellectual property could result in a third party acquiring the related rights and thereby harm our business.

In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us. We also may be unable to license or acquire relevant crop science technologies on terms that would allow us to make an appropriate return on our investment.

We expect that competition for acquiring and in-licensing crop science technologies that are attractive to us may increase in the future, which may mean fewer suitable opportunities for us as well as higher acquisition or licensing costs. If we are unable to successfully obtain rights to suitable crop science technologies on reasonable terms, or at all, our business and financial condition could suffer.

The intellectual property landscape around genome editing technology, such as CRISPR/Cas9, is highly dynamic and uncertain, and any resolution of this uncertainty could have a material adverse effect on our business.

The field of genome editing, especially in the area of CRISPR/Cas9 technology, is still in its infancy, and no products using this technology have reached the market. We are currently negotiating a license for work in the CRISPR/Cas9 field in order to demonstrate the utility of our yield trait genes in this field. Due to the intense research and development that is taking place by several companies, including us and our competitors, in this field, the intellectual property landscape is in flux, and it may remain uncertain for the coming years. There has been, and may continue to be, significant intellectual property related litigation and proceedings relating to this area in the future. If we obtain a license to certain patent rights using the CRISPR/Cas9 technology, and it is later determined that such patent rights are invalid or owned by other parties, this could have a material adverse effect on our business.

We rely in part on trade secrets to protect our technology, and our failure to obtain or maintain trade secret protection could harm our business.

We rely on trade secrets to protect some of our technology and proprietary information, especially where we believe patent protection is not appropriate or obtainable. However, trade secrets are difficult to protect. Litigating a claim that a third party had illegally obtained and was using our trade secrets would be expensive and time consuming, and the outcome would be unpredictable. Moreover, if our competitors independently develop similar knowledge, methods and know-how, it will be difficult for us to enforce our rights and our business could be harmed.

Risks Relating to Owning our Common Stock

Raising additional funds may cause dilution to our existing stockholders, restrict our operations or require us to relinquish rights to our technologies.

If we raise additional funds through equity offerings or offerings of equity-linked securities, including warrants or convertible debt securities, we expect that our existing stockholders will experience significant dilution, and the terms of such securities may include liquidation or other preferences that adversely affect your rights as a stockholder. Debt financing, if available, may subject us to restrictive covenants that could limit our flexibility in conducting future business activities, including covenants limiting or restricting our ability to incur additional debt, dispose of assets or make capital expenditures. We may also incur ongoing interest expense and be required to grant a security interest in our assets in connection with any debt issuance. If we raise additional funds through strategic partnerships or licensing agreements with third parties, we may have to relinquish valuable rights to our technologies or grant licenses on terms that are not favorable to us.

A material weakness was identified in our internal control over financial reporting, which could impact our business and financial results.

Our internal control over financial reporting may not prevent or detect misstatements because of its inherent limitations, including the possibility of human error, the circumvention or overriding of controls, or fraud. Even effective internal controls can provide only reasonable assurance with respect to the preparation and fair presentation of financial statements. If we fail to maintain the adequacy of our internal controls, including any failure to implement required new or

improved controls, or if we experience difficulties in their implementation, our business and financial results could be harmed and we could fail to meet our financial reporting obligations. For example, in connection with the evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2016, we determined that our controls over accounting for stock based compensation expense did not operate effectively. Specifically, our procedures did not operate as designed to validate the calculation for stock based compensation expense resulting from an option award modification. We determined that this constitutes a material weakness.

Trading volume in our stock is low and an active trading market for our common stock may not be available on a consistent basis to provide stockholders with adequate liquidity. Our stock price may be extremely volatile, and our stockholders could lose a significant part of their investment.

Trading volume in our stock is low and an active trading market for shares of our common stock may not be sustained on a consistent basis. The public trading price for our common stock will be affected by a number of factors, including:

- any change in the status of our NASDAQ listing;
- the need for near term financing to continue operations;
- reported progress in our efforts to develop crop related technologies, relative to investor expectations;
- changes in earnings estimates, investors' perceptions, recommendations by securities analysts or our failure to achieve analysts' earnings estimates;
- quarterly variations in our or our competitors' results of operations;
- general market conditions and other factors unrelated to our operating performance or the operating performance of our competitors;
- future issuances and/or sales of our securities;
- announcements or the absence of announcements by us, or our competitors, regarding acquisitions, new products, significant contracts, commercial relationships or capital commitments;
- commencement of, or involvement in, litigation;
- any major change in our board of directors or management;
- changes in governmental regulations or in the status of our regulatory approvals;
- announcements related to patents issued to us or our competitors and to litigation involving our intellectual property;
- a lack of, or limited, or negative industry or security analyst coverage;
- uncertainty regarding our ability to secure additional cash resources with which to operate our business;
- short-selling or similar activities by third parties; and
- other factors described elsewhere in these Risk Factors.

As a result of these factors, our stockholders may not be able to resell their shares at, or above, their purchase price. In addition, the stock prices of many technology companies have experienced wide fluctuations that have often been unrelated to the operating performance of those companies. Any negative change in the public's perception of the prospects of industrial or agricultural biotechnology companies could depress our stock price regardless of our results of operations. These factors may have a material adverse effect on the market price of our common stock.

Provisions in our certificate of incorporation and by-laws and Delaware law might discourage, delay or prevent a change of control of our company or changes in our management and, therefore, depress the trading price of our common stock.

Provisions of our certificate of incorporation and by-laws and Delaware law may discourage, delay or prevent a merger, acquisition or other change in control that stockholders may consider favorable, including transactions in which our stockholders might otherwise receive a premium for their shares of our common stock. These provisions may also prevent or frustrate attempts by our stockholders to replace or remove our management.

In addition, Section 203 of the Delaware General Corporation Law prohibits a publicly-held Delaware corporation from engaging in a business combination with an interested stockholder, which generally refers to a person which together with its affiliates owns, or within the last three years has owned, 15% or more of our voting stock, for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner.

The existence of the foregoing provisions and anti-takeover measures could limit the price that investors might be willing to pay in the future for shares of our common stock. They could also deter potential acquirers of our company, thereby reducing the likelihood that our stockholders could receive a premium for their common stock in an acquisition.

Concentration of ownership among our officers, directors and principal stockholders may prevent other stockholders from influencing significant corporate decisions and depress our stock price.

Based on the number of shares outstanding as of May 31, 2017, our officers, directors and stockholders who hold at least 5% of our stock beneficially own a combined total of approximately 69.1% of our outstanding common stock, including shares of common stock subject to stock options and warrants that are currently exercisable or are exercisable within 60 days after May 31, 2017. If these officers, directors, and principal stockholders or a group of our principal stockholders act together, they will be able to exert a significant degree of influence over our management and affairs and control matters requiring stockholder approval, including the election of directors and approval of mergers, business combinations or other significant transactions. The interests of one or more of these stockholders may not always coincide with our interests or the interests of other stockholders. For instance, officers, directors, and principal stockholders, acting together, could cause us to enter into transactions or agreements that we would not otherwise consider. Similarly, this concentration of ownership may have the effect of delaying or preventing a change in control of our company otherwise favored by our other stockholders. As of May 31, 2017, Jack W. Schuler and William P. Scully beneficially owned approximately 47.2% and approximately 10.2% of our common stock, respectively.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS.

Recent Sales of Unregistered Securities

On July 7, 2017, we completed an offering of our securities. Investors participating in the transaction purchased a total of 570,784 shares of common stock at a price of \$4.00 per share and an equal number of warrants with an exercise price of \$5.04 per share, exercisable beginning on the six-month anniversary of the date of issuance. The warrants expire on the sixth anniversary of the date that they become exercisable. The shares of common stock sold in the offering are registered under a Form S-3 registration statement that became effective April 12, 2017. The warrants and the shares of common stock issuable upon the exercise of the warrants are not included in the Form S-3 registration statement and were issued pursuant to Section 4(a)(2) of the Securities Act of 1933, as amended (the "Act"). Proceeds from this transaction were approximately \$2,012, net of issuance costs of \$272, and will be used for general corporate purposes, including working capital, and repayment of existing corporate obligations.

On July 7, 2017, we issued 4,267 shares of common stock to participants in the Yield10 Bioscience, Inc. 401(k) Plan as a matching contribution. The issuance of these securities is exempt from registration pursuant to Section 3(a)(2) of the Act as exempted securities.

Issuer Purchases of Equity Securities

During the three months ended June 30, 2017, there were no repurchases made by us or on our behalf, or by any "affiliated purchasers," of shares of our common stock.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES.

None.

ITEM 4. MINE SAFETY DISCLOSURES.

Not applicable.

ITEM 5. OTHER INFORMATION.

None.

ITEM 6. EXHIBITS.

- [3.1](#) Restated Certificate of Incorporation, as amended (filed herewith).
- [31.1](#) Certification Pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934 of the Principal Executive Officer (filed herewith).
- [31.2](#) Certification Pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934 of the Principal Financial Officer (filed herewith).
- [32.1](#) Section 1350 Certification (furnished herewith).
- 101.1 The following financial information from the Yield10 Bioscience, Inc. Quarterly Report on Form 10-Q for the quarter ended June 30, 2017 formatted in XBRL: (i) Condensed Consolidated Balance Sheets, June 30, 2017 and December 31, 2016; (ii) Condensed Consolidated Statements of Operations, Three and Six Months Ended June 30, 2017 and 2016; (iii) Condensed Consolidated Statements of Comprehensive Loss, Three and Six Months Ended June 30, 2017 and 2016; (iv) Condensed Consolidated Statements of Cash Flows, Six Months Ended June 30, 2017 and 2016; and (v) Notes to Consolidated Financial Statements.

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.

YIELD10 BIOSCIENCE, INC.

August 11, 2017

By: /s/ OLIVER PEOPLES

Oliver Peoples

President and Chief Executive Officer

(Principal Executive Officer)

August 11, 2017

By: /s/ CHARLES B. HAASER

Charles B. Haaser

Chief Accounting Officer

(Principal Financial and Accounting Officer)

CERTIFICATE OF AMENDMENT
OF
RESTATED CERTIFICATE OF INCORPORATION
OF
YIELD10 BIOSCIENCE, INC.

Pursuant to Section 242 of the
General Corporation Law of the State of Delaware

YIELD10 BIOSCIENCE, Inc., a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, does hereby certify as follows:

1. The name of the corporation (hereinafter called the “**Corporation**”) is Yield10 Bioscience, Inc.
 2. The Certificate of Incorporation of the Corporation was filed with the Secretary of State of the State of Delaware on September 1, 1998. A Restated Certificate of Incorporation was filed with the Secretary of State of the State of Delaware on November 15, 2006 and thereafter Certificates of Designation were filed on July 8, 2009 and August 22, 2014 with the Secretary of State of the State of Delaware and Certificates of Amendment were filed on October 30, 2014 and May 26, 2015 with the Secretary of State of the State of Delaware and a Certificate of Designation was filed on September 11, 2015 with the Secretary of State of the State of Delaware, and a Certificate of Amendment was filed on January 6, 2017 with the Secretary of State of the State of Delaware.
 3. The first paragraph of Article IV of the Corporation’s Restated Certificate of Incorporation, as amended, is hereby deleted and replaced in its entirety with:

“The total number of shares of capital stock which the Corporation shall have authority to issue is two hundred fifty-five million (255,000,000) shares, of which (i) two hundred fifty million (250,000,000) shares shall be a class designated as common stock, par value \$.01 per share (the “Common Stock”), and (ii) five million (5,000,000) shares shall be a class designated as undesignated preferred stock, par value \$.01 per share (the “Undesignated Preferred Stock”).
-

Upon the effectiveness of this Certificate of Amendment to the Restated Certificate of Incorporation, as amended, every ten (10) issued and outstanding shares of Common Stock of the Corporation shall be changed, combined and reclassified into one (1) whole share of Common Stock, which shares shall be fully paid and nonassessable shares of Common Stock of the Corporation; provided, however, that in lieu of issuing fractional interests in shares of Common Stock to which any stockholder would otherwise be entitled pursuant hereto (after aggregating all fractions of a share to which such stockholder would otherwise be entitled), the Corporation shall take such actions as permitted by and in accordance with Section 155 of the DGCL.

4. The Board of Directors of the Corporation has duly adopted resolutions (i) authorizing the Corporation to execute and file with the Secretary of State of the State of Delaware this Certificate of Amendment to combine every ten (10) shares of the Corporation's Common Stock, issued and outstanding or held in the treasury of the Corporation into one (1) share of Common Stock, and (ii) declaring this Certificate of Amendment to be advisable and recommended for approval by the stockholders of the Corporation.

5. This Certificate of Amendment was duly adopted in accordance with the provisions of Section 242 of the DGCL by the Board of Directors and stockholders of the Corporation.

6. This Certificate of Amendment as filed under Section 242 of the General Corporation Law of the State of Delaware, has been duly authorized in accordance thereof.

7. This Certificate of Amendment shall take effect on May 26, 2017.

[Remainder of this page intentionally left blank.]

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment to Certificate of Incorporation to be signed by its duly authorized President and Chief Executive Officer this 25th day of May, 2017.

YIELD10 BIOSCIENCE, INC.

By: /s/ OLIVER P. PEOPLES

Name: Oliver P. Peoples, Ph.D.

Title: President and Chief Executive Officer

CERTIFICATE OF AMENDMENT
OF
RESTATED CERTIFICATE OF INCORPORATION
OF
METABOLIX, INC.

Pursuant to Section 242 of the
General Corporation Law of the State of Delaware

METABOLIX, Inc., a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the “*Corporation*”), does hereby certify as follows:

1. The name of the corporation (hereinafter called the “Corporation”) is Metabolix, Inc.

2. The Certificate of Incorporation of the Corporation was filed with the Secretary of State of the State of Delaware on September 1, 1998. A Restated Certificate of Incorporation was filed with the Secretary of State of the State of Delaware on November 15, 2006 and thereafter Certificates of Designation were filed on July 8, 2009 and August 22, 2014 with the Secretary of State of the State of Delaware and Certificates of Amendment were filed on October 30, 2014 and May 26, 2015 with the Secretary of State of the State of Delaware and a Certificate of Designation was filed on September 11, 2015 with the Secretary of State of the State of Delaware.

3. The Restated Certificate of Incorporation, filed on November 15, 2006, as amended, is hereby further amended to change the name of the Corporation to Yield! 0 Bioscience, Inc., by striking out Article I thereof and by substituting in lieu of said Article the following new Article I:

The name of the corporation (hereinafter called the “Corporation”) is

YIELD10 BIOSCIENCE, INC.

4. The amendment of the Restated Certificate of Incorporation, as amended, herein certified has been duly adopted in accordance with the provisions of Section 242 of the General Corporation Law of the State of Delaware.

[*Signature Page Follows*]

Signed this 6th day of January, 2017.

METABOLIX, INC.

By: /s/ OLIVER P. PEOPLES

Name: Oliver P. Peoples, Ph.D.

Title: President and Chief Executive Officer

CERTIFICATE OF ELIMINATION OF THE
SERIES B PREFERRED STOCK OF
METABOLIX, INC.

Pursuant to Section 151(g)
of the General Corporation Law
of the State of Delaware

Metabolix, Inc., a Delaware corporation (the “ **Corporation** ”), in accordance with the provisions of Section 151(g) of the General Corporation Law of the State of Delaware, hereby certifies as follows:

1. That, pursuant to Section 151 of the General Corporation Law of the State of Delaware and authority granted in the Amended and Restated Certificate of Incorporation of the Corporation, as theretofore amended (the “ **Certificate of Incorporation** ”), the Board of Directors of the Corporation, by resolution duly adopted, authorized the issuance of a series of 50,000 shares of Series B Preferred Stock, par value \$.01 per share, of the Corporation (the “ **Series B Preferred Stock** ”), and established the voting powers, designations, preferences and relative, participating, optional or other rights, if any, or the qualifications, limitations or restrictions thereof, and, on August 22, 2014, filed a Certificate of Designation (the “ **Certificate of Designation** ”) with respect to such Series B Preferred Stock in the office of the Secretary of State of the State of Delaware (the “ **Secretary of State** ”).

2. That no shares of said Series B Preferred Stock are outstanding and no shares thereof will be issued subject to said Certificate of Designation.

3. That the Board of Directors of the Corporation has adopted the following resolutions:

RESOLVED: That no shares of the Corporation's authorized Series B Preferred Stock, par value \$0.01 per share (the "**Series B Preferred Stock**") are outstanding and that no shares of the Series B Preferred Stock will be issued subject to the certificate of designation previously filed on August 22, 2014 with respect to the Series B Preferred Stock.

RESOLVED: That the proper officers of the Corporation (the "**Authorized Officers**") be and hereby are authorized and directed to file a certificate setting forth this resolution with the Secretary of State of the State of Delaware pursuant to the provisions of Section 151(g) of the General Corporation Law of the State of Delaware for the purpose of eliminating from the Corporation's certificate of incorporation all matters set forth in the Certificate of Designation with respect to the Series B Preferred Stock; and further that upon such filing all authorized shares of Series B Preferred Stock shall be eliminated and restored to the status of authorized but unissued shares of undesignated preferred stock under the Corporation's certificate of incorporation.

4. That, accordingly, all matters set forth in the Certificate of Designation with respect to the Series B Preferred Stock be, and hereby are, eliminated from the Certificate of Incorporation, as heretofore amended, of the Corporation.

[Remainder of page intentionally left blank]

IN WITNESS WHEREOF, the undersigned authorized officer of the Corporation, has executed this Certificate of Elimination as of September 11, 2015.

METABOLIX, INC.

By: /s/ Joseph Shaulson

Name: Joseph Shaulson

Title: President & CEO

**CERTIFICATE OF AMENDMENT TO
AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF
METABOLIX, INC.**

Metabolix , Inc. (the “**Corporation**”), a corporation organized under and by virtue of the provisions of the General Corporation Law of the State of Delaware (the “**General Corporation Law**”),

DOES HEREBY CERTIFY:

1. Pursuant to Section 242 of the General Corporation Law, this Certificate of Amendment to Amended and Restated Certificate of Incorporation (this - **Amendment**) amends the provisions of the Amended and Restated Certificate of Incorporation of the Corporation (the “**Certificate**”).

2. This Amendment has been approved and duly adopted by the Corporation’s Board of Directors and its stockholders in accordance with the provisions of Section 242 of the General Corporation Law, and the provisions of the Certificate.

3. The following language is hereby added to the end of the first paragraph of ARTICLE IV of the Certificate:

“Effective at 5:00 p.m. EDT, on May 26, 2015, every six outstanding shares of Common Stock will be combined into and automatically become one share of outstanding Common Stock of the Corporation. The Corporation will not issue fractional shares on account of the foregoing reverse stock split; all shares that are held by a stockholder as of the effective date hereof shall be aggregated and each fractional share resulting from the reverse stock split after giving effect to such aggregation shall be cancelled.

In lieu of any interest in a fractional share to which a stockholder would otherwise be entitled as a result of such reverse stock split, such stockholder will be paid a cash amount for such fractional shares equal to the product obtained by multiplying (a) the closing price of the shares of Common Stock on the first trading day immediately preceding the effective date of the reverse split, as reported on The NASDAQ Capital Market by (b) the number of shares of Common Stock held by such stockholder that would otherwise have been exchanged for such fractional share interest. The par value of the Common Stock and the total number of authorized shares of Common Stock will not change as a result of such reverse stock split.”

[End of Text]

IN WITNESS WHEREOF, the undersigned authorized officer of the Corporation, has executed this Certificate of Amendment to Amended and Restated Certificate of Incorporation as of May 26, 2015.

METABOLIX, INC.

By: /s/ Joseph Shaulson

Name: Joseph Shaulson

Title: President & CEO

**CERTIFICATE OF AMENDMENT TO
AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF
METABOLIX, INC.**

Metabolix, Inc. (the “**Corporation**”), a corporation organized under and by virtue of the provisions of the General Corporation Law of the State of Delaware (the “**General Corporation Law**”),

DOES HEREBY CERTIFY:

1. Pursuant to Section 242 of the General Corporation Law, this Certificate of Amendment to Amended and Restated Certificate of Incorporation (this “**Amendment**”) amends the provisions of the Amended and Restated Certificate of Incorporation of the Corporation (the “**Certificate**”).

2. This Amendment has been approved and duly adopted by the Corporation’s Board of Directors and its stockholders in accordance with the provisions of Section 242 of the General Corporation Law, and the provisions of the Certificate.

3. The first paragraph of ARTICLE IV of the Certificate is hereby amended and restated in its entirety to read as set forth below:

“The total number of shares of capital stock which the Corporation shall have authority to issue is Two Hundred Fifty Five Million (255,000,000) shares, of which (i) Two Hundred Fifty Million (250,000,000) shares shall be a class designated as common stock, par value \$.01 per share (the “**Common Stock**”), (ii) Four Million Nine Hundred Fifty Thousand (4,950,000) shares shall be a class designated as undesignated preferred stock, par value \$.01 per share (the “**Undesignated Preferred Stock**”) and (iii) Fifty Thousand (50,000) shares shall be a class designated as Series B Convertible Preferred Stock, par value \$.01 per share (the “**Series B Preferred Stock**”).”

[End of Text]

IN WITNESS WHEREOF, the undersigned authorized officer of the Corporation, has executed this Certificate of Amendment to Amended and Restated Certificate of Incorporation as of October 30, 2014.

METABOLIX, INC.

By: /s/ Joseph Shaulson

Name: Joseph Shaulson

Title: President & CEO

METABOLIX, INC.

**CERTIFICATE OF DESIGNATION OF PREFERENCES,
RIGHTS AND LIMITATIONS
OF
SERIES B CONVERTIBLE PREFERRED STOCK**

PURSUANT TO SECTION 151 OF THE
DELAWARE GENERAL CORPORATION LAW

The undersigned, Joseph Shaulson and Sarah P. Cecil, do hereby certify that:

1. They are the President and Secretary, respectively, of Metabolix, Inc., a Delaware corporation (the "Corporation").
2. The Corporation is authorized to issue Five Million shares of preferred stock, \$0.01 par value, none of which have been issued.
3. The following resolutions were duly adopted by the board of directors of the Corporation (the "Board of Directors");

WHEREAS, the certificate of incorporation of the Corporation provides for a class of its authorized stock known as preferred stock, consisting of Five Million shares, \$0.01 par value per share, issuable from time to time in one or more series;

WHEREAS, the Board of Directors is authorized to fix the dividend rights, dividend rate, voting rights, conversion rights, rights and terms of redemption and liquidation preferences of any wholly unissued series of preferred stock and the number of shares constituting any series and the designation thereof, of any of them; and

WHEREAS, it is the desire of the Board of Directors, pursuant to its authority as aforesaid, to fix the rights, preferences, restrictions and other matters relating to a series of the preferred stock, which shall consist of up to 50,000 shares of the preferred stock which the Corporation has the authority to issue, as follows:

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors does hereby provide for the issuance of a series of preferred stock for cash or exchange of other securities, rights or property and does hereby fix and determine the rights, preferences, restrictions and other matters relating to such series of preferred stock as follows:

TERMS OF PREFERRED STOCK

Section 1. Definitions. For the purposes hereof, the following terms shall have the following meanings:

“Affiliate” means any Person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a Person, as such terms are used in and construed under Rule 405 of the Securities Act.

“Alternate Consideration” shall have the meaning set forth in Section 7(d).

“Business Day” means any day except any Saturday, any Sunday, any day which is a federal legal holiday in the United States or any day on which banking institutions in the State of New York are authorized or required by law or other governmental action to close.

“Charter Amendment” means the amendment of the Corporation’s Amended and Restated Certificate of Incorporation, as amended, to increase the authorized number of shares of Common Stock to not less than 150,000,000.

“Commission” means the United States Securities and Exchange Commission.

“Common Stock” means the Corporation’s common stock, par value \$0.01 per share, and stock of any other class of securities into which such securities may hereafter be reclassified or changed.

“Common Stock Equivalents” means any securities of the Corporation which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, rights, options, warrants or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock.

“Conversion Price” shall have the meaning set forth in Section 6(b).

“Conversion Shares” means, collectively, the shares of Common Stock issuable upon conversion of the shares of Series B Preferred Stock in accordance with the terms hereof.

“Conversion Shares Registration Statement” means a registration statement that registers the resale of all Conversion Shares of the Holders, who shall be named as “selling stockholders” therein and meets the requirements of Section 9 of the Purchase Agreement.

“Delaware Courts” shall have the meaning set forth in Section 8(c).

“Fundamental Transaction” shall have the meaning set forth in Section 7(d).

“Holder” shall have the meaning given such term in Section 2.

“Issue Date Price” shall have the meaning set forth in Section 7(t).

“Liquidation” shall have the meaning set forth in Section 5.

“Person” means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.

“Purchase Agreement” means the Securities Purchase Agreement, dated as of August 4, 2014, among the Corporation and the original Holders, as amended, modified or supplemented from time to time in accordance with its terms.

“Purchase Rights” shall have the meaning set forth in Section 7(b).

“Securities” means the Series B Preferred Stock and the Underlying Shares.

“Securities Act” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

“Series B Preferred Stock” shall have the meaning set forth in Section 2.

“Stated Value” shall have the meaning set forth in Section 2, as the same may be increased pursuant to Section 3.

“Stockholder Approval” means the approval of the Charter Amendment by the requisite stockholders of the Corporation.

“Successor Entity” shall have the meaning set forth in Section 7(d).

“Trading Day” means a day on which the principal Trading Market is open for business.

“Trading Market” means any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE MKT, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, or the New York Stock Exchange (or any successors to any of the foregoing).

“Transaction Documents” means this Certificate of Designation, the Purchase Agreement, and all exhibits and schedules hereto and thereto.

“Transfer Agent” means American Stock Transfer and Trust Company, the current transfer agent of the Corporation, and any successor transfer agent of the Corporation.

“Underlying Shares” means the shares of Common Stock issued and issuable upon conversion of the Series B Preferred Stock.

Section 2. Designation, Amount and Par Value. The series of preferred stock shall be designated as its Series B Convertible Preferred Stock (the “Series 13 Preferred Stock”) and the number of shares so designated shall be up to 50,000 (which shall not be subject to increase without the written consent of all of the holders of the Series B Preferred Stock (each, a “Holder” and collectively, the “Holders”)). Each share of Series B Preferred Stock shall have a par value of \$.01 per share and a stated value equal to \$1,000 (the “Stated Value”).

Section 3. Dividends. Except for stock dividends or distributions for which adjustments are to be made pursuant to Section 7, Holders shall be entitled to receive, and the Corporation shall pay, dividends or distributions on shares of Series B Preferred Stock equal (on an as-if-converted-to-Common Stock basis) to and in the same form as dividends or distributions actually paid on shares of the Common Stock when, as and if such dividends or distributions are paid on shares of the Common Stock. No other dividends or distributions shall be paid on shares of Series B Preferred Stock.

Section 4. Voting Rights. Except as otherwise provided herein or as otherwise required by law, the Series B Preferred Stock shall have no voting rights. However, as long as any shares of Series B Preferred Stock are outstanding, the Corporation shall not, without the affirmative vote of the Holders of a majority of the then outstanding shares of the Series B Preferred Stock, alter or change adversely the powers, preferences or rights given to the Series B Preferred Stock or alter or amend this Certificate of Designation in a manner that adversely affects the powers, preferences or rights given to the Series B Preferred Stock.

Section 5. Liquidation. Upon any liquidation, dissolution or winding-up of the Corporation, whether voluntary or involuntary (a “Liquidation”), the Holders shall be entitled to receive out of the assets, whether capital or surplus, of the Corporation an amount equal (on an as-if-converted-to-Common Stock basis) to and in the same form as amounts actually paid on shares of the Common Stock. The Corporation shall mail written notice of any such Liquidation, not less than 45 days prior to the payment date stated therein, to each Holder.

Section 6. Conversion.

a) Mandatory, Automatic Conversion. Upon the filing and acceptance of the Charter Amendment with the Secretary of State of the State of Delaware, each share of Series B Preferred Stock shall automatically convert into that number of shares of Common Stock determined by dividing the Stated Value of such share of Series B Preferred Stock by the Conversion Price. Any conversion pursuant to this Section 6(a) shall occur automatically and without any further action by the Holders and whether or

not the certificates representing such shares of Series 13 Preferred Stock are surrendered to the Corporation or its Transfer Agent. Upon the occurrence of such automatic conversion, the Corporation shall provide written notice to the Holders, and the Holders shall, a reasonable time thereafter, surrender the certificates representing such shares at the office of the Corporation or any Transfer Agent for the Series B Preferred Stock. Thereupon, there shall be issued and delivered to such Holder promptly at such office and in its name as shown on the Corporation's stock records, a certificate or certificates for the number of shares of Common Stock into which the shares of Series B Preferred Stock surrendered were convertible on the date on which such automatic conversion occurred. All Shares of Series B Preferred Stock converted into Common Stock in accordance with the terms hereof shall be deemed to have been retired and canceled and shall not be reissued.

b) Conversion Price. The conversion price for the Series B Preferred Stock (the "Conversion Price") shall equal \$1.00, subject to adjustment as provided in Section 7.

c) Fractional Shares. No fractional shares or scrip representing fractional shares shall be issued upon the conversion of the Series B Preferred Stock. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such conversion, the Corporation shall, at its election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Conversion Price or round up to the next whole share.

d) Transfer Taxes and Expenses. The issuance of certificates for shares of the Common Stock on conversion of Series B Preferred Stock shall be made without charge to any Holder for any documentary stamp or similar taxes that may be payable in respect of the issue or delivery of such certificates; provided that the Corporation shall not be required to pay any tax that may be payable in respect of any transfer involved in the issuance and delivery of any such certificate upon conversion in a name other than that of the Holders of such shares of Series B Preferred Stock and the Corporation shall not be required to issue or deliver such certificates unless or until the Person or Persons requesting the issuance thereof shall have paid to the Corporation the amount of such tax or shall have established to the satisfaction of the Corporation that such tax has been paid.

e) Issuance Limitations. Notwithstanding anything herein to the contrary, the Series B Preferred Stock may not be converted into any shares of Common Stock unless the Corporation has obtained Stockholder Approval.

Section 7. Certain Adjustments.

a) Stock Dividends and Stock Splits. If the Corporation, at any time while

the Series B Preferred Stock is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions payable in shares of Common Stock on shares of Common Stock or any other Common Stock Equivalents (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Corporation upon conversion of, or payment of a dividend on, Series B Preferred Stock), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, (iii) combines (including by way of a reverse stock split) outstanding shares of Common Stock into a smaller number of shares, or (iv) issues, in the event of a reclassification of shares of the Common Stock, any shares of capital stock of the Corporation, then the Conversion Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock outstanding immediately before such event, and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event. Any adjustment made pursuant to this Section 7(a) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination or re-classification.

b) Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 7(a), if, at any time while the Series B Preferred Stock is outstanding, the Corporation grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of shares of Common Stock (the "Purchase Rights"), then each Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which such Holder could have acquired if such Holder had held the number of shares of Common Stock acquirable upon complete conversion of such Holder's Series B Preferred Stock immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the grant, issue or sale of such Purchase Rights.

c) Pro Rata Distributions. During such time as Series B Preferred Stock is outstanding, if the Corporation declares or makes any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a "Distribution"), at any time after the issuance of the Series B Preferred Stock, then, in each such case, Holders shall be entitled to participate in such Distribution to the same extent that such Holders would have participated therein if such Holders had held the number of shares of Common Stock acquirable upon complete conversion of Series B Preferred Stock immediately before the date of which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution.

d) Fundamental Transaction. If, at any time while Series B Preferred Stock is outstanding, (i) the Corporation, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Corporation with or into another Person, (ii) the Corporation, directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Corporation or another Person) is completed pursuant to which holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding Common Stock, (iv) the Corporation, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property, or (v) the Corporation, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with another Person whereby such other Person acquires more than 50% of the outstanding shares of Common Stock (not including any shares of Common Stock held by the other Person or other Persons making or party to, or associated or Affiliated with the other Persons making or party to, such stock or share purchase agreement or other business combination) (each a "Fundamental Transaction"), then, upon any subsequent conversion of Series B Preferred Stock, Holders shall have the right to receive, for each Conversion Share that would have been issuable upon such conversion immediately prior to the occurrence of such Fundamental Transaction (without regard to any limitation in Section 6(e) on the conversion of Series B Preferred Stock), the number of shares of Common Stock of the successor or acquiring corporation or of the Corporation, if it is the surviving corporation, and any additional consideration (the "Alternate Consideration") receivable as a result of such Fundamental Transaction by a holder of the number of shares of Common Stock for which Series B Preferred Stock is convertible immediately prior to such Fundamental Transaction (without regard to any limitation in Section 6(e) on the conversion of Series B Preferred Stock). For purposes of any such conversion, the determination of the Conversion Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Corporation shall apportion the Conversion Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, the Holders shall be given the same choice as to the Alternate Consideration as to the securities, cash or property to be received upon any conversion of Series B Preferred Stock following such Fundamental Transaction. To the extent necessary to effectuate the foregoing provisions, any successor to the Corporation or surviving entity in such Fundamental

Transaction shall file a new Certificate of Designation with the same terms and conditions and issue to the Holders new preferred stock consistent with the foregoing provisions and evidencing the Holders' right to convert such preferred stock into Alternate Consideration. The Corporation shall cause any successor entity in a Fundamental Transaction in which the Corporation is not the survivor (the "Successor Entity") to assume in writing all of the obligations of the Corporation under this Certificate of Designation and the Purchase Agreement in accordance with the provisions of this Section 7(d) pursuant to written agreements and shall, at the option of a Holders, deliver to the Holders in exchange for Series B Preferred Stock a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to Series B Preferred Stock which is convertible into a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon conversion of Series B Preferred Stock (without regard to any limitations on the conversion of Series B Preferred Stock) prior to such Fundamental Transaction, and with a conversion price which applies the Conversion Price to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such conversion price being for the purpose of protecting the economic value of Series B Preferred Stock immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the Holders. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for (so that from and after the date of such Fundamental Transaction, the provisions of this Certificate of Designation and the other Transaction Documents referring to the "Corporation" shall refer instead to the Successor Entity), and may exercise every right and power of the Corporation and shall assume all of the obligations of the Corporation under this Certificate of Designation and the other Transaction Documents with the same effect as if such Successor Entity had been named as the Corporation herein.

e) Calculations. All calculations under this Section 7 shall be made to the nearest cent or the nearest 11100th of a share, as the case may be. For purposes of this Section 7, the number of shares of Common Stock deemed to be issued and outstanding as of a given date shall be the number of shares of Common Stock (excluding any treasury shares of the Corporation) issued and outstanding.

f) Notice to the Holders of Adjustment to Conversion Price. Whenever the Conversion Price is adjusted pursuant to any provision of this Section 7, the Corporation shall promptly deliver to each Holder a notice setting forth the Conversion Price after such adjustment and setting forth a brief statement of the facts requiring such adjustment.

Section 8. Miscellaneous.

a) Notices. Any and all notices or other communications or deliveries to be provided by the Holders hereunder shall be in writing and delivered personally, by facsimile, or sent by a nationally recognized overnight courier service, addressed to the Corporation, at the address set forth above Attention: Secretary, or such other address as the Corporation may specify for such purposes by notice to the Holders delivered in accordance with this Section 8(a). Any and all notices or other communications or deliveries to be provided by the Corporation hereunder shall be in writing and delivered personally, by facsimile, or sent by a nationally recognized overnight courier service addressed to each Holder at the facsimile number or address of such Holder appearing on the books of the Corporation, or if no such facsimile number or address appears on the books of the Corporation, at the facsimile number or address of such Holder, as set forth in Schedule I to the Purchase Agreement. Any notice or other communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number set forth in this Section 8(a) prior to 5:30 p.m. (New York City time) on any date, (ii) the next Trading Day after the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number set forth in this Section 8(a) on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (iii) the second Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given.

b) Lost or Mutilated Series B Preferred Stock Certificate. If a Holder's Series B Preferred Stock certificate shall be mutilated, lost, stolen or destroyed, the Corporation shall execute and deliver, in exchange and substitution for and upon cancellation of a mutilated certificate, or in lieu of or in substitution for a lost, stolen or destroyed certificate, a new certificate for the shares of Series B Preferred Stock so mutilated, lost, stolen or destroyed, but only upon receipt of evidence of such loss, theft or destruction of such certificate, and of the ownership hereof reasonably satisfactory to the Corporation and, if requested by the Corporation, in its reasonable discretion, the receipt of a bond in a customary amount.

c) Governing Law. All questions concerning the construction, validity, enforcement and interpretation of this Certificate of Designation shall be governed by and construed and enforced in accordance with the internal laws of the State of Delaware, without regard to the principles of conflict of laws thereof. Each party agrees that all legal proceedings concerning the interpretation, enforcement and defense of the transactions contemplated by any of the Transaction Documents (whether brought against a party hereto or its respective Affiliates, directors, officers, shareholders, employees or agents) shall be commenced in the state and federal courts of the State of Delaware (the "Delaware Courts"). Each party hereto hereby irrevocably submits to the exclusive jurisdiction of the Delaware Courts for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein (including with respect to the

enforcement of any of the Transaction Documents), and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of such Delaware Courts, or such Delaware Courts are improper or inconvenient venue for such proceeding. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Certificate of Designation and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by applicable law. Each party hereto hereby irrevocably waives, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to this Certificate of Designation or the transactions contemplated hereby. If any party shall commence an action or proceeding to enforce any provisions of this Certificate of Designation, then the prevailing party in such action or proceeding shall be reimbursed by the other party for its attorneys' fees and other costs and expenses incurred in the investigation, preparation and prosecution of such action or proceeding.

d) Waiver. Any waiver by the Corporation or a Holder of a breach of any provision of this Certificate of Designation shall not operate as or be construed to be a waiver of any other breach of such provision or of any breach of any other provision of this Certificate of Designation or a waiver by any other Holders. The failure of the Corporation or a Holder to insist upon strict adherence to any term of this Certificate of Designation on one or more occasions shall not be considered a waiver or deprive that party (or any other Holder) of the right thereafter to insist upon strict adherence to that term or any other term of this Certificate of Designation on any other occasion. Any waiver by the Corporation or a Holder must be in writing.

e) Severability. If any provision of this Certificate of Designation is invalid, illegal or unenforceable, the balance of this Certificate of Designation shall remain in effect, and if any provision is inapplicable to any Person or circumstance, it shall nevertheless remain applicable to all other Persons and circumstances.

f) Next Business Day. Whenever any payment or other obligation hereunder shall be due on a day other than a Business Day, such payment shall be made on the next succeeding Business Day.

g) Headings. The headings contained herein are for convenience only, do not constitute a part of this Certificate of Designation and shall not be deemed to limit or affect any of the provisions hereof.

h) Status of Converted or Redeemed Series B Preferred Stock. Shares of Series B Preferred Stock may only be issued pursuant to the Purchase Agreement. If any shares of Series B Preferred Stock shall be converted, redeemed or reacquired by the Corporation, such shares shall resume the status of authorized but unissued shares of preferred stock and shall no longer be designated as Series B Convertible Preferred Stock.

RESOLVED, FURTHER, that the Chairman, the president or any vice-president, and the secretary or any assistant secretary, of the Corporation be, and they hereby are, authorized and directed to prepare and file this Certificate of Designation of Preferences, Rights and Limitations in accordance with the foregoing resolution and the provisions of Delaware law.

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IN WITNESS WHEREOF, the undersigned have executed this Certificate this 22nd day of August 2014.

/s/ Joseph Shaulson

/s/ Sarah P. Cecil

Joseph Shaulson
President

Sarah P. Cecil
Secretary

CERTIFICATE OF DESIGNATIONS
OF
SERIES A JUNIOR PARTICIPATING CUMULATIVE
PREFERRED STOCK
OF
METABOLIX, INC.

METABOLIX, INC., a corporation organized and existing under the General Corporation Law of the State of Delaware (the "Corporation"), in accordance with the provisions of Section 103 thereof,

DOES HEREBY CERTIFY:

Pursuant to the authority conferred upon the Board of Directors by the Amended and Restated Certificate of Incorporation (the "Certificate of Incorporation"), and Section 151(g) of the General Corporation Law of the State of Delaware, on July 7, 2009, the Board of Directors adopted the following resolution determining it desirable and in the best interests of the Corporation and its stockholders for the Corporation to create a series of 45,000 shares of preferred stock designated as "Series A Junior Participating Cumulative Preferred Stock":

RESOLVED, that pursuant to the authority vested in the Board of Directors of this Corporation, in accordance with the provisions of the Certificate of Incorporation, a series of preferred stock, par value \$0.01 per share, of the Corporation be and hereby is created, and that the designation and number of shares thereof and the voting and other powers, preferences and relative, participating, optional or other rights of the shares of such series and the qualifications, limitations and restrictions thereof are as follows:

Series A Junior Participating Cumulative Preferred Stock

Section 1. Designation and Amount. There shall be a series of preferred stock that shall be designated as "Series A Junior Participating Cumulative Preferred Stock" (the "Series A Preferred Stock"), and the number of shares initially constituting such series shall be 45,000; provided, however, that if more than a total of 45,000 shares of Series A Preferred Stock shall be issuable upon the exercise of Rights (the "Rights") issued pursuant to the Shareholder Rights Agreement dated as of July 7, 2009, between the Corporation and American Stock Transfer & Trust Company, LLC, as Rights Agent (the "Rights Agreement"), the Board of Directors of the Corporation, pursuant to Section 151(g) of the General Corporation Law of the State of Delaware, may direct by resolution or resolutions that a certificate be properly executed,

acknowledged, filed and recorded, in accordance with the provisions of Section 103 thereof, providing for the total number of shares of Series A Preferred Stock authorized to be issued to be increased (to the extent that the Certificate of Incorporation then permits) to the largest number of whole shares (rounded up to the nearest whole number) issuable upon exercise of such Rights.

Section 2. Dividends and Distributions.

(A) (i) Subject to the rights of the holders of any shares of any class or series of preferred stock (or any similar stock) ranking prior and superior to the Series A Preferred Stock with respect to dividends, the holders of shares of Series A Preferred Stock, in preference to the holders of shares of common stock and of any other class or series of stock ranking junior to the Series A Preferred Stock, shall be entitled to receive, when, as and if declared by the Board of Directors out of funds legally available for the purpose, quarterly dividends payable in cash on the first day of March, June, September and December in each year (each such date being referred to herein as a "Quarterly Dividend Payment Date"), commencing on the first Quarterly Dividend Payment Date after the first issuance of a share or fraction of a share of Series A Preferred Stock, in an amount per share (rounded to the nearest cent) equal to the greater of (a) \$1.00 or (b) subject to the provisions for adjustment hereinafter set forth, 10,000 times the aggregate per share amount of all cash dividends, and 10,000 times the aggregate per share amount (payable in kind) of all non-cash dividends or other distributions other than a dividend payable in shares of common stock or a subdivision of the outstanding shares of common stock (by reclassification or otherwise), declared on the common stock since the immediately preceding Quarterly Dividend Payment Date, or, with respect to the first Quarterly Dividend Payment Date, since the first issuance of any share or fraction of a share of Series A Preferred Stock. The multiple of cash and non-cash dividends declared on the common stock to which holders of the Series A Preferred Stock are entitled, which shall be 10,000 initially but which shall be adjusted from time to time as hereinafter provided, is hereinafter referred to as the "Dividend Multiple." In the event the Corporation shall at any time after July 7, 2009 (the "Rights Declaration Date") (i) declare or pay any dividend on common stock payable in shares of common stock, or (ii) effect a subdivision or combination or consolidation of the outstanding shares of common stock (by reclassification or otherwise than by payment of a dividend in shares of common stock) into a greater or lesser number of shares of common stock, then in each such case the Dividend Multiple thereafter applicable to the determination of the amount of dividends which holders of shares of Series A Preferred Stock shall be entitled to receive shall be the Dividend Multiple applicable immediately prior to such event multiplied by a fraction, the numerator of which is the number of shares of common stock outstanding immediately after such event and the denominator of which is the number of shares of common stock that were outstanding immediately prior to such event.

(ii) Notwithstanding anything else contained in this paragraph (A), the Corporation shall, out of funds legally available for that purpose, declare a dividend or distribution on the Series A Preferred Stock as provided in this paragraph (A) immediately after it declares a dividend or distribution on the common stock (other than a dividend payable in shares of common stock); provided that, in the event no dividend or distribution shall have been declared on the common stock during the period between any Quarterly Dividend Payment Date and the next subsequent Quarterly Dividend Payment Date, a dividend of \$1.00 per share on the Series A Preferred Stock shall nevertheless be payable on such subsequent Quarterly Dividend Payment Date.

(B) Dividends shall begin to accrue and be cumulative on outstanding shares of Series A Preferred Stock from the Quarterly Dividend Payment Date next preceding the date of issue of such shares of Series A Preferred Stock, unless the date of issue of such shares is prior to the record date for the first Quarterly Dividend Payment Date, in which case dividends on such shares shall begin to accrue from the date of issue of such shares, or unless the date of issue is a Quarterly Dividend Payment Date or is a date after the record date for the determination of holders of shares of Series A Preferred Stock entitled to receive a quarterly dividend and before such Quarterly Dividend Payment Date, in either of which events such dividends shall begin to accrue and be cumulative from such Quarterly Dividend Payment Date. Accrued but unpaid dividends shall not bear interest. Dividends paid on the shares of Series A Preferred Stock in an amount less than the total amount of such dividends at the time accrued and payable on such shares shall be allocated pro rata on a share-by-share basis among all such shares at the time outstanding. The Board of Directors may fix in accordance with applicable law a record date for the determination of holders of shares of Series A Preferred Stock entitled to receive payment of a dividend or distribution declared thereon, which record date shall be not more than such number of days prior to the date fixed for the payment thereof as may be allowed by applicable law.

Section 3. Voting Rights. In addition to any other voting rights required by law, the holders of shares of Series A Preferred Stock shall have the following voting rights:

(A) Subject to the provision for adjustment hereinafter set forth, each share of Series A Preferred Stock shall entitle the holder thereof to 10,000 votes on all matters submitted to a vote of the stockholders of the Corporation. The number of votes which a holder of a share of Series A Preferred Stock is entitled to cast, which shall initially be 10,000 but which may be adjusted from time to time as hereinafter provided, is hereinafter referred to as the "Vote Multiple." In the event the Corporation shall at any time after the Rights Declaration Date (i) declare or pay any dividend on common stock payable in shares of common stock, or (ii) effect a subdivision or combination or consolidation of the outstanding shares of common stock (by

reclassification or otherwise than by payment of a dividend in shares of common stock) into a greater or lesser number of shares of common stock, then in each such case the Vote Multiple thereafter applicable to the determination of the number of votes per share to which holders of shares of Series A Preferred Stock shall be entitled shall be the Vote Multiple immediately prior to such event multiplied by a fraction, the numerator of which is the number of shares of common stock outstanding immediately after such event and the denominator of which is the number of shares of common stock that were outstanding immediately prior to such event.

(B) Except as otherwise provided herein or by law, the holders of shares of Series A Preferred Stock and the holders of shares of common stock and the holders of shares of any other capital stock of this Corporation having general voting rights, shall vote together as one class on all matters submitted to a vote of stockholders of the Corporation.

(C) (i) Whenever, at any time or times, dividends payable on any shares of Series A Preferred Stock shall be in arrears in an amount equal to at least six full quarter dividends (whether or not declared and whether or not consecutive), the holders of record of the outstanding shares of Series A Preferred Stock shall have the exclusive right, voting separately as a single class, to elect two directors of the Corporation at a special meeting of stockholders of the Corporation or at the Corporation's next annual meeting of stockholders, and at each subsequent annual meeting of stockholders, as provided below.

(ii) Upon the vesting of such right of the holders of shares of Series A Preferred Stock, the maximum authorized number of members of the Board of Directors shall automatically be increased by two and the two vacancies so created shall be filled by vote of the holders of the outstanding shares of Series A Preferred Stock as hereinafter set forth. A special meeting of the stockholders of the Corporation then entitled to vote shall be called by the Chairman and Chief Executive Officer or the Secretary of the Corporation, if requested in writing by the holders of record of not less than 5% of the shares of Series A Preferred Stock then outstanding. At such special meeting, or, if no such special meeting shall have been called, then at the next annual meeting of stockholders of the Corporation, the holders of the shares of Series A Preferred Stock shall elect, voting as above provided, two directors of the Corporation to fill the aforesaid vacancies created by the automatic increase in the number of members of the Board of Directors. At any and all such meetings for such election, the holders of a majority of the outstanding shares of Series A Preferred Stock shall be necessary to constitute a quorum for such election, whether present in person or proxy, and such two directors shall be elected by the vote of at least a majority of the shares of Series A Preferred Stock held by such stockholders present or represented at the meeting, the holders of Series A Preferred Stock being entitled to cast a number of votes per share of Series A Preferred Stock as is specified in paragraph (A) of this Section 3. Each such additional director shall not be a member of Class I, Class II or Class III of the Board of Directors of the Corporation, but shall serve until the next annual meeting of

stockholders for the election of directors, or until his successor shall be elected and shall qualify, or until his right to hold such office terminates pursuant to the provisions of this Section 3(C). Any director elected by holders of shares of Series A Preferred Stock pursuant to this Section 3(C) may be removed at any annual or special meeting, by vote of a majority of the stockholders voting as a class who elected such director, with or without cause. In case any vacancy shall occur among the directors elected by the holders of shares of Series A Preferred Stock pursuant to this Section 3(C), such vacancy may be filled by the remaining director so elected, or his successor then in office, and the director so elected to fill such vacancy shall serve until the next meeting of stockholders for the election of directors.

(iii) The right of the holders of shares of Series A Preferred Stock, voting separately as a class, to elect two members of the Board of Directors of the Corporation as aforesaid shall continue until, and only until, such time as all arrears in dividends (whether or not declared) on the Series A Preferred Stock shall have been paid or declared and set apart for payment, at which time such right shall terminate, except as herein or by law expressly provided subject to reversion in the event of each and every subsequent default of the character above-mentioned. Upon any termination of the right of the holders of the Series A Preferred Stock as a class to vote for directors as herein provided, the term of office of all directors then in office elected by the holders of shares of Series A Preferred Stock pursuant to this Section 3(C) shall terminate immediately. Whenever the term of office of the directors elected by the holders of shares of Series A Preferred Stock pursuant to this Section 3(C) shall terminate and the special voting powers vested in the holders of the Series A Preferred Stock pursuant to this Section 3(C) shall have expired, the maximum number of members of this Board of Directors of the

Corporation shall be such number as may be provided for in the By-laws of the Corporation, irrespective of any increase made pursuant to the provisions of this Section 3(C). The voting rights granted by this Section 3(C) shall be in addition to any other voting rights granted to the holders of the Series A Preferred Stock in this Section 3.

(D) Except as otherwise required by applicable law or as set forth herein, holders of Series A Preferred Stock shall have no special voting rights and their consent shall not be required (except to the extent they are entitled to vote with holders of common stock as set forth herein) for taking any corporate action.

Section 4. Certain Restrictions.

(A) Whenever dividends or distributions payable on the Series A Preferred Stock as provided in Section 2 are in arrears, thereafter and until all accrued and unpaid dividends and distributions, whether or not declared, on shares of Series A Preferred Stock outstanding shall have been paid in full, the Corporation shall not:

(i) declare or pay dividends on, make any other distributions on, or redeem or purchase or otherwise acquire for consideration any shares of stock ranking junior (either as to dividends or upon liquidation, dissolution or winding up) to the Series A Preferred Stock;

(ii) declare or pay dividends on or make any other distributions on any shares of stock ranking on a parity (either as to dividends or upon liquidation, dissolution or winding up) with the Series A Preferred Stock, except dividends paid ratably on the Series A Preferred Stock and all such parity stock on which dividends are payable or in arrears in proportion to the total amounts to which the holders of all such shares are then entitled;

(iii) except as permitted in subsection 4(A)(iv) below, redeem, purchase or otherwise acquire for consideration shares of any stock ranking on a parity (either as to dividends or upon liquidation, dissolution or winding up) with the Series A Preferred Stock, provided that the Corporation may at any time redeem, purchase or otherwise acquire shares of any such parity stock in exchange for shares of any stock of the Corporation ranking junior (either as to dividends or upon dissolution, liquidation or winding up) to the Series A Preferred Stock; or

(iv) purchase or otherwise acquire for consideration any shares of Series A Preferred Stock, or any shares of any stock ranking on a parity (either as to dividends or upon liquidation, dissolution or winding up) with the Series A Preferred Stock, except in accordance with a purchase offer made in writing or by publication (as determined by the Board of Directors) to all holders of such shares upon such terms as the Board of Directors, after consideration of the respective annual dividend rates and other relative rights and preferences of the respective series and classes, shall determine in good faith will result in fair and equitable treatment among the respective series or classes.

(B) The Corporation shall not permit any subsidiary of the Corporation to purchase or otherwise acquire for consideration any shares of stock of the Corporation unless the Corporation could, under subsection (A) of this Section 4, purchase or otherwise acquire such shares at such time and in such manner.

Section 5. Reacquired Shares. Any shares of Series A Preferred Stock purchased or otherwise acquired by the Corporation in any manner whatsoever shall be retired promptly after the acquisition thereof. All such shares shall upon their retirement become authorized but unissued shares of preferred stock and may be reissued as part of a new series of preferred stock to be created by resolution or resolutions of the Board of Directors, subject to the conditions and restrictions on issuance set forth herein.

Section 6. Liquidation, Dissolution or Winding Up. Upon any liquidation, dissolution or winding up of the Corporation (voluntary or otherwise), no distribution shall

be made (x) to the holders of shares of stock ranking junior (either as to dividends or upon liquidation, dissolution or winding up) to the Series A Preferred Stock unless, prior thereto, the holders of shares of Series A Preferred Stock shall have received an amount (the “Series A Liquidation Preference”) equal to accrued and unpaid dividends and distributions thereon, whether or not declared, to the date of such payment, plus an amount equal to the greater of (1) \$10,000.00 per share or (2) an aggregate amount per share, subject to the provision for adjustment hereinafter set forth, equal to 10,000 times the aggregate amount of all cash or other property to be distributed per share to holders of common stock upon such liquidation, dissolution or winding up of the Corporation, or (y) to the holders of stock ranking on a parity (either as to dividends or upon liquidation, dissolution or winding up) with the Series A Preferred Stock, except distributions made ratably on the Series A Preferred Stock and all other such parity stock in proportion to the total amounts to which the holders of all such shares are entitled upon such liquidation, dissolution or winding up. In the event the Corporation shall at any time after the Rights Declaration Date (i) declare or pay any dividend on common stock payable in shares of common stock, or (ii) effect a subdivision or combination or consolidation of the outstanding shares of common stock (by reclassification or otherwise than by payment of a dividend in shares of common stock) into a greater or lesser number of shares of common stock, then in each such case the aggregate amount per share to which holders of shares of Series A Preferred Stock were entitled immediately prior to such event under clause (x) of the preceding sentence shall be adjusted by multiplying such amount by a fraction, the numerator of which is the number of shares of common stock outstanding immediately after such event and the denominator of which is the number of shares of common stock that were outstanding immediately prior to such event.

In the event, however, that there are not sufficient assets available to permit payment in full of the Series A Liquidation Preference and the liquidation preferences of all other classes and series of stock of the Corporation, if any, that rank on a parity with the Series A Preferred Stock in respect thereof, then the assets available for such distribution shall be distributed ratably to the holders of the Series A Preferred Stock and the holders of such parity shares in proportion to their respective liquidation preferences.

Neither the consolidation of nor merging of the Corporation with or into any other corporation or corporations, nor the sale or other transfer of all or substantially all of the assets of the Corporation, shall be deemed to be a liquidation, dissolution or winding up of the Corporation within the meaning of this Section 6.

Section 7. Consolidation, Merger, etc. In case the Corporation shall enter into any consolidation, merger, combination or other transaction in which the outstanding shares of

common stock are exchanged for or changed into other stock or securities, cash and/or any other property, then in any such case each share of Series A Preferred Stock shall at the same time be similarly exchanged or changed in an amount per share (subject to the provision for adjustment hereinafter set forth) equal to 10,000 times the aggregate amount of stock, securities, cash and/or any other property (payable in kind), as the case may be, into which or for which each share of common stock is changed or exchanged, plus accrued and unpaid dividends, if any, payable with respect to the Series A Preferred Stock. In the event the Corporation shall at any time after the Rights Declaration Date (i) declare or pay any dividend on common stock payable in shares of common stock, or (ii) effect a subdivision or combination or consolidation of the outstanding shares of common stock (by reclassification or otherwise than by payment of a dividend in shares of common stock) into a greater or lesser number of shares of common stock, then in each such case the amount set forth in the preceding sentence with respect to the exchange or change of shares of Series A Preferred Stock shall be adjusted by multiplying such amount by a fraction, the numerator of which is the number of shares of common stock outstanding immediately after such event and the denominator of which is the number of shares of common stock that were outstanding immediately prior to such event.

Section 8. Redemption. The shares of Series A Preferred Stock shall not be redeemable; provided, however, that the foregoing shall not limit the ability of the Corporation to purchase or otherwise deal in such shares to the extent otherwise permitted hereby and by law.

Section 9. Ranking. Unless otherwise expressly provided in the Certificate of Incorporation or a Certificate of Designations relating to any other series of preferred stock of the Corporation, the Series A Preferred Stock shall rank junior to every other series of the Corporation's preferred stock previously or hereafter authorized, as to the payment of dividends and the distribution of assets on liquidation, dissolution or winding up and shall rank senior to the common stock.

Section 10. Fractional Shares. Series A Preferred Stock may be issued in whole shares or in any fraction of a share that is one ten-thousandth (1/10,000th) of a share or any integral multiple of such fraction, which shall entitle the holder, in proportion to such holder's fractional shares, to exercise voting rights, receive dividends, participate in distributions and to have the benefit of all other rights of holders of Series A Preferred Stock. In lieu of fractional shares, the Corporation may elect to make a cash payment as provided in the Rights Agreement for fractions of a share other than one ten-thousandth (1/10,000th) of a share or any integral multiple thereof.

Section 11. Amendment. At any time any shares of Series A Preferred Stock are outstanding, the Certificate of Incorporation and the foregoing Sections 1 through 10, inclusive, and this Section 11 of the Certificate of Designations shall not be amended in any manner,

including by merger, consolidation or otherwise, which would materially alter or change the powers, preferences or special rights of the Series A Preferred Stock so as to affect them adversely without the affirmative vote of the holders of two-thirds or more of the outstanding shares of Series A Preferred Stock, voting separately as a class.

IN WITNESS WHEREOF, the Corporation has caused this Certificate to be signed this 8th day of July, 2009.

METABOLIX, INC.

By: /s/ Richard P. Eno

Name: Richard P. Eno

Title: President and CEO

[Signature Page to Certificate of Designations of
Series A Junior Participating Cumulative Preferred Stock]

AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION
OF
METABOLIX, INC.

Metabolix, Inc., a corporation organized and existing under the laws of the State of Delaware (the “Corporation”), hereby certifies as follows:

1. The name of the Corporation is Metabolix, Inc. The original certificate of incorporation of Metabolix, Inc. was filed with the Secretary of State of the State of Delaware on September 1, 1998.
2. This Amended and Restated Certificate of Incorporation was duly adopted in accordance with the provisions of Sections 242 and 245 of the Delaware General Corporation Law (the “DGCL”).
3. The text of the Certificate of Incorporation of this corporation be hereby amended and restated in its entirety to provide as herein set forth in full.

ARTICLE I

The name of the Corporation is Metabolix, Inc.

ARTICLE II

The address of the Corporation’s registered office in the State of Delaware is do The Corporation Trust Company, 1209 Orange Street in the City of Wilmington, County of New Castle. The name of its registered agent at such address is The Corporation Trust Company.

ARTICLE III

The purpose of the Corporation is to engage in any lawful act or activity for which corporations may be organized under the DGCL.

ARTICLE IV

CAPITAL STOCK

The total number of shares of capital stock which the Corporation shall have authority to issue is One Hundred Five Million (105,000,000) shares, of which (i) One Hundred Million (100,000,00) shares shall be a class designated as common stock, par value \$.01 per share (the "Common Stock"), and (ii) Five Million (5,000,000) shares shall be a class designated as undesignated preferred stock, par value \$.01 per share (the "Undesignated Preferred Stock").

The number of authorized shares of the class of Undesignated Preferred Stock may from time to time be increased or decreased (but not below the number of shares outstanding) by the affirmative vote of the holders of a majority of the outstanding shares of Common Stock entitled to vote, without a vote of the holders of the Undesignated Preferred Stock (except as otherwise provided in any certificate of designations of any series of Undesignated Preferred Stock).

The powers, preferences and rights of, and the qualifications, limitations and restrictions upon, each class or series of stock shall be determined in accordance with, or as set forth below in, this Article IV.

A. COMMON STOCK

Subject to all the rights, powers and preferences of the Undesignated Preferred Stock and except as provided by law or in this Article IV (or in any certificate of designations of any series of Undesignated Preferred Stock):

(a) the holders of the Common Stock shall have the exclusive right to vote for the election of directors of the Corporation (the "Directors") and on all other matters requiring stockholder action, each outstanding share entitling the holder thereof to one vote on each matter properly submitted to the stockholders of the Corporation for their vote; provided, however, that, except as otherwise required by law, holders of Common Stock, as such, shall not be entitled to vote on any amendment to this Certificate (or on any amendment to a certificate of designations of any series of Undesignated Preferred Stock) that alters or changes the powers, preferences, rights or other terms of one or more outstanding series of Undesignated Preferred Stock if the holders of such affected series are entitled to vote, either separately or together with the holders of one or more other such series, on such amendment pursuant to this Certificate (or pursuant to a certificate of designations of any series of Undesignated Preferred Stock) or pursuant to the DGCL;

(b) dividends may be declared and paid or set apart for payment upon the Common Stock out of any assets or funds of the Corporation legally available for the payment

of dividends, but only when and as declared by the Board or any authorized committee thereof; and

(c) upon the voluntary or involuntary liquidation, dissolution or winding up of the Corporation, the net assets of the Corporation shall be distributed pro rata to the holders of the Common Stock.

B. UNDESIGNATED PREFERRED STOCK

The Board of Directors or any authorized committee thereof is expressly authorized, to the fullest extent permitted by law, to provide for the issuance of the shares of Undesignated Preferred Stock in one or more series of such stock, and by filing a certificate pursuant to applicable law of the State of Delaware, to establish or change from time to time the number of shares of each such series, and to fix the designations, powers, including voting powers, full or limited, or no voting powers, preferences and the relative, participating, optional or other special rights of the shares of each series and any qualifications, limitations and restrictions thereof

ARTICLE V

STOCKHOLDER ACTION

1. Action without Meeting. Except as otherwise provided herein, any action required or permitted to be taken by the stockholders of the Corporation at any annual or special meeting of stockholders of the Corporation must be effected at a duly called annual or special meeting of stockholders and may not be taken or effected by a written consent of stockholders in lieu thereof.

2. Special Meetings. Except as otherwise required by statute and subject to the rights, if any, of the holders of any series of Undesignated Preferred Stock, special meetings of the stockholders of the Corporation may be called only by the Board of Directors acting pursuant to a resolution approved by the affirmative vote of a majority of the Directors then in office. Only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of stockholders of the Corporation.

ARTICLE VI

DIRECTORS

1. General. The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors except as otherwise provided herein or required by law.

2. Election of Directors. Election of Directors need not be by written ballot unless the By-laws of the Corporation (the “By-laws”) shall so provide.

3. Number of Directors; Term of Office. The number of Directors of the Corporation shall be fixed solely and exclusively by resolution duly adopted from time to time by the Board of Directors. The Directors, other than those who may be elected by the holders of any series of Undesignated Preferred Stock, shall be classified, with respect to the term for which they severally hold office, into three classes, as nearly equal in number as reasonably possible. The initial Class I Directors of the Corporation shall be Edward M. Muller, Matthew Strobeck, Ph.D., and Robert L. Van Nostrand; the initial Class II Directors of the Corporation shall be Jack W. Lasersohn, Jay Kouba, Ph.D., and Oliver P. Peoples, Ph.D.; and the initial Class III Directors of the Corporation shall be Edward M. Giles, Anthony J. Sinskey, Sc.D., and James J. Barber, Ph.D. The initial Class I Directors shall serve for a term expiring at the annual meeting of stockholders to be held in 2007, the initial Class II Directors shall serve for a term expiring at the annual meeting of stockholders to be held in 2008, and the initial Class III Directors shall serve for a term expiring at the annual meeting of stockholders to be held in 2009. At each annual meeting of stockholders, Directors elected to succeed those Directors whose terms expire shall be elected for a term of office to expire at the third succeeding annual meeting of stockholders after their election. Notwithstanding the foregoing, the Directors elected to each class shall hold office until their successors are duly elected and qualified or until their earlier resignation or removal.

Notwithstanding the foregoing, whenever, pursuant to the provisions of Article IV of this Certificate, the holders of any one or more series of Undesignated Preferred Stock shall have the right, voting separately as a series or together with holders of other such series, to elect Directors at an annual or special meeting of stockholders, the election, term of office, filling of vacancies and other features of such directorships shall be governed by the terms of this Certificate and any certificate of designations applicable thereto.

4. Vacancies. Subject to the rights, if any, of the holders of any series of Undesignated Preferred Stock to elect Directors and to fill vacancies in the Board of Directors relating thereto, any and all vacancies in the Board of Directors, however occurring, including, without limitation, by reason of an increase in size of the Board of Directors, or the death, resignation, disqualification or removal of a Director, shall be filled solely and exclusively by the affirmative vote of a majority of the remaining Directors then in office, even if less than a quorum of the Board of Directors, and not by the stockholders. Any Director appointed in accordance with the preceding sentence shall hold office for the remainder of the full term of the class of Directors in which the new directorship was created or the vacancy occurred and until such Director’s successor shall have been duly elected and qualified or until his or her earlier resignation or removal. Subject to the rights, if any, of the holders of any series of Undesignated Preferred Stock to elect Directors, when the number of Directors is increased or decreased, the Board of Directors

shall, subject to Article VI.3 hereof, determine the class or classes to which the increased or decreased number of Directors shall be apportioned; provided, however, that no decrease in the number of Directors shall shorten the term of any incumbent Director. In the event of a vacancy in the Board of Directors, the remaining Directors, except as otherwise provided by law, shall exercise the powers of the full Board of Directors until the vacancy is filled.

5. Removal. Subject to the rights, if any, of any series of Undesignated Preferred Stock to elect Directors and to remove any Director whom the holders of any such stock have the right to elect, any Director (including persons elected by Directors to fill vacancies in the Board of Directors) may be removed from office (i) only with cause and (ii) only by the affirmative vote of the holders of 75% or more of the shares then entitled to vote at an election of Directors. At least forty-five (45) days prior to any meeting of stockholders at which it is proposed that any Director be removed from office, written notice of such proposed removal and the alleged grounds thereof shall be sent to the Director whose removal will be considered at the meeting.

ARTICLE VII

LIMITATION OF LIABILITY

A Director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a Director, except for liability (a) for any breach of the Director's duty of loyalty to the Corporation or its stockholders, (b) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (c) under Section 174 of the DGCL or (d) for any transaction from which the Director derived an improper personal benefit. If the DGCL is amended after the effective date of this Certificate to authorize corporate action further eliminating or limiting the personal liability of Directors, then the liability of a Director of the Corporation shall be eliminated or limited to the fullest extent permitted by the DGCL, as so amended.

Any repeal or modification of this Article VII by either of (i) the stockholders of the Corporation or (ii) an amendment to the DGCL, shall not adversely affect any right or protection existing at the time of such repeal or modification with respect to any acts or omissions occurring before such repeal or modification of a person serving as a Director at the time of such repeal or modification.

ARTICLE VIII

AMENDMENT OF BY-LAWS

1. Amendment by Directors. Except as otherwise provided by law, the By-laws of the Corporation may be amended or repealed by the Board of Directors by the affirmative vote of a majority of the Directors then in office.

2. Amendment by Stockholders. The By-laws of the Corporation may be amended or repealed at any annual meeting of stockholders, or special meeting of stockholders called for such purpose as provided in the By-laws, by the affirmative vote of at least 75% of the outstanding shares entitled to vote on such amendment or repeal, voting together as a single class; provided, however, that if the Board of Directors recommends that stockholders approve such amendment or repeal at such meeting of stockholders, such amendment or repeal shall only require the affirmative vote of the majority of the outstanding shares entitled to vote on such amendment or repeal, voting together as a single class.

ARTICLE IX

AMENDMENT OF CERTIFICATE OF INCORPORATION

The Corporation reserves the right to amend or repeal this Certificate in the manner now or hereafter prescribed by statute and this Certificate, and all rights conferred upon stockholders herein are granted subject to this reservation. Whenever any vote of the holders of voting stock is required to amend or repeal any provision of this Certificate, and in addition to any other vote of holders of voting stock that is required by this Certificate or by law, such amendment or repeal shall require the affirmative vote of the majority of the outstanding shares entitled to vote on such amendment or repeal, and the affirmative vote of the majority of the outstanding shares of each class entitled to vote thereon as a class, at a duly constituted meeting of stockholders called expressly for such purpose; provided, however, that the affirmative vote of not less than 75% of the outstanding shares entitled to vote on such amendment or repeal, and the affirmative vote of not less than 75% of the outstanding shares of each class entitled to vote thereon as a class, shall be required to amend or repeal any provision of Article V, Article VI, Article VII, Article VIII or Article IX of this Certificate.

[End of Text]

THIS AMENDED AND RESTATED CERTIFICATE OF INCORPORATION is executed as of this 15th day of November, 2006.

METABOLIX, INC.

By: /s/ James Barber

Name: James Barber

Title: Chief Executive Officer and President

CERTIFICATION

I, Oliver Peoples, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Yield10 Bioscience, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: August 11, 2017

/s/ OLIVER PEOPLES

Name: Oliver Peoples
 Title: *President and Chief Executive Officer*
(Principal Executive Officer)

CERTIFICATION

I, Charles B. Haaser, certify that:

1. I have reviewed this annual report on Form 10-K of Yield10 Bioscience, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: August 11, 2017

/s/ CHARLES B. HAASER

Name: Charles B. Haaser
 Title: Chief Accounting Officer
 (Principal Financial and Accounting Officer)

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the quarterly report on Form 10-Q of Yield10 Bioscience, Inc. (the “Company”) for the quarter ended June 30, 2017 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), we, Oliver Peoples, President, Chief Executive Officer and Principal Executive Officer of the Company and Charles B. Haaser, Chief Accounting Officer and Principal Financial and Accounting Officer of the Company, certify, pursuant to 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, to our knowledge that:

1. The Report fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and
2. The information in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

This certification is being provided pursuant to 18 U.S.C. 1350 and is not to be deemed a part of the Report, nor is it to be deemed to be “filed” for any purpose whatsoever.

Dated: August 11, 2017

/s/ OLIVER PEOPLES

President and Chief Executive Officer

(Principal Executive Officer)

Dated: August 11, 2017

/s/ CHARLES B. HAASER

Chief Accounting Officer

(Principal Financial and Accounting Officer)