UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 OR 15(d) of The Securities Exchange Act of 1934

Date of Report (Date of earliest event reported) September 9, 2019

YIELD10 BIOSCIENCE, INC.
(Exact Name of Registrant as Specified in Its Charter)

DELAWARE
(State or Other Jurisdiction of Incorporation)

001-33133	**04-3158289**
(Commission File Number)	(IRS Employer Identification No.)

19 Presidential Way, Woburn, Massachusetts	**01801**
(Address of Principal Executive Offices)	(Zip Code)

(617) 583-1700
(Registrant's Telephone Number, Including Area Code)

(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (*see* General Instruction A.2. below):

o Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

o Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

o Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

o Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c)).

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock	YTEN	The Nasdaq Capital Market

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (17 CFR §230.405) or Rule 12b-2 of the Securities Exchange Act of 1934 (17 CFR §240.12b-2).

Emerging growth company o

If an emerging growth company, indicate by check mark if the registrant has 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. o

Item 8.01. Other Events

Yield10 Bioscience, Inc., a Delaware corporation (the "Company"), is filing this Current Report on Form 8-K to retrospectively adjust certain items contained in the Company's Annual Report on Form 10-K for the year ended December 31, 2018 (the "2018 Form 10-K"), originally filed with the Securities and Exchange Commission ("SEC") on March 28, 2019, to reflect the Company's adoption of ASU 2016-02, *Leases Topic 842 (Topic 842)*, with retrospective application to January 1, 2017. All other information provided in the 2018 Form 10-K remains unchanged and this report does not modify the disclosures in the 2018 Form 10-K in any way other than with respect to the retrospective adoption of Topic 842.

Topic 842 is intended to improve financial reporting of leasing transactions by requiring organizations that lease assets to recognize assets and liabilities for the rights and obligations created by leases that extend more than twelve months on the balance sheet. This accounting update also requires additional disclosures surrounding the amount, timing, and uncertainty of cash flows arising from leases. Adoption of the standard requires the Company to restate certain previously reported results, including the recognition of additional right-of-use assets and lease obligations for operating leases.

The retrospectively adjusted financial statements and management discussion of the results of operations are filed as Exhibit 99.1 to this report and are incorporated herein by reference. This report does not reflect events occurring after the original filing of the 2018 Form 10-K and should be read in conjunction with other information that the Company has filed with the SEC.

Item 9.01 Financial Statements and Exhibits.

(d) **Exhibits.**

Exhibit No.	**Description**
23.1	Consent of RSM US LLP
99.1	Management's Discussion and Analysis of Financial Results of Operations and Financial Statements and Notes thereto, as modified solely to include retrospective adoption of ASU 2016-02, *Leases (Topic 842).*

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 hereunto duly authorized.

		YIELD10 BIOSCIENCE, INC.
Date: September 9, 2019	By:	/s/ Oliver Peoples
		Oliver Peoples
		President and Chief Executive Officer

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the Registration Statements of Form S-1 (Nos. 333-220040, 333-221283, 333-222147, 333-231474), Form S-3 (No. 333-217051) and Forms S-8 (Nos. 333-138631, 333-145232, 333-155115, 333-157869, 333-165405, 333-172724, 333-181268, 333-187589, 333-194858, 333-194859, 333-202983, 333-217052, 333-226731) of Yield10 Bioscience, Inc. of our report dated March 28, 2019, except for the change in method of accounting for leasing transactions due to the adoption of Financial Accounting Standard Board's Accounting Standards Update 2016-02, *Leases*, described in the Change in Accounting Principle section of Note 2 and the New Lease Accounting section of Note 11, as to which the date is September 9, 2019, relating to the consolidated financial statements of Yield10 Bioscience, Inc. and its subsidiaries appearing in the Current Report on Form 8-K of Yield10 Bioscience, Inc. filed on September 9, 2019.

/s/ RSM US LLP
Boston, Massachusetts
September 9, 2019

Exhibit 99.1

The Company's 2018 Annual Report is being revised to reflect the implementation of certain reporting changes related to new accounting policies as described in Item 8.01 of the accompanying Current Report on Form 8-K. The 2018 Annual Report is revised as follows:

- The information previously set forth in each of the sections identified and described below under the heading "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" in the 2018 Annual Report is replaced in its entirety by the information set forth below in this Exhibit 99.1 in the corresponding sections under the heading of "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations":
  - Comparison of the Years Ended December 31, 2018 and 2017
  - Liquidity and Capital Resources
- The information previously set forth under the heading "Item 8. Financial Statements and Supplementary Data" in the 2018 Annual Report is replaced in its entirety by the information set forth below in this Exhibit 99.1 under the heading "Item 8. Financial Statements and Supplementary Data."

Other than as set forth herein, the 2018 Annual Report remains materially consistent with the Company's previously issued 2018 Annual Report. Those sections of the 2018 Annual Report which have not been revised as set forth herein are not materially impacted by the actions taken described in this Exhibit 99.1 and the accompanying Current Report on Form 8-K and/or have already been updated through the Quarterly Reports on Form 10-Q for the quarters ended March 31 and June 30, 2019 (the "Quarterly Reports on Form 10-Q") and are not included in this Exhibit 99.1. Accordingly, the revised information set forth in this Exhibit 99.1 should be read in conjunction with the 2018 Annual Report and Quarterly Reports on Form 10-Q.

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

Comparison of the Years Ended December 31, 2018 and 2017

Revenue

	Year ended December 31,		
	2018	2017	Change
Grant revenue	$ 556	$ 944	$ (388)

Total revenue was $556 and $944 for the years ended December 31, 2018 and 2017, respectively, and was derived solely from our research grants. Grant revenue for the year ended December 31, 2018 was primarily earned from the Company's sub-award with Michigan State University. During the year ended December 31, 2017, grant revenue primarily consisted of $913 in grant revenue earned from the DOE Camelina grant.

We anticipate that grant revenue will increase over the next twelve months as we dedicate greater resources to our DOE sub-award with Michigan State University.

Expenses

	Year ended December 31,		
	2018	2017	Change
Research and development expenses	$ 4,783	$ 4,619	$ 164
General and administrative expenses	5,092	5,641	(549)
Total expenses	$ 9,875	$ 10,260	$ (385)

Research and Development Expenses

Research and development expenses were fairly consistent at $4,783 and $4,619 for the years ended December 31, 2018 and 2017, respectively. The four percent increase of $164 was primarily due to a $106 net increase in employee compensation and benefits and a $103 increase in our research consulting and third-party analytical expenses. These increases were partially offset by an $46 decrease in sponsored research fees. The increase in employee compensation and benefits was primarily the result of hiring additional research personnel, partially offset by our elimination of the 2018 accrual for employee bonuses. Our increase in research consulting expense was primarily the result of payments we made to our Scientific Advisory Board and for third-party bioinformatics support. Sponsored research expense decreased during 2018 compared to 2017 as a result of the discontinuation in research services performed for us by North Carolina State University as a subcontractor under our DOE Camelina grant that ended in 2017.

Based on our current financial forecasts, we expect research and development expenses during 2019 will remain at a level consistent with 2018 provided that we are able to raise additional funds to support our ongoing operations. Our forecasts related to research and development expenses are subject to significant change as events and opportunities occur during 2019 that could result in modifications to our business plans.

General and Administrative Expenses

General and administrative expenses were $5,092 and $5,641 for the fiscal years ended December 31, 2018 and December 31, 2017, respectively. The decrease of $549 was primarily due to reductions in employee compensation and related benefits expenses and professional fees, partially offset by increases in licensing and facility related charges. General and administrative employee compensation and benefits decreased by $515 from $2,483 during the year ended December 31, 2017 to $1,968 during the year ended December 31, 2018. The decrease stems from our elimination of the 2018 accrual for employee bonuses and lower stock compensation expense recorded during 2018. Professional fees decreased by $151 during the year ended December 31, 2018 in comparison to the previous year as a result of lower general legal and accounting fees. Licensing fees increased by $140 during the year ended December 31, 2018, primarily as a result of our signing a research license agreement with the University of Missouri for certain gene technologies. Facility related expenses increased during the year ended December 31, 2018 due to our recording a lease impairment charge of $255 for the Lowell, Massachusetts facility.

We expect our general and administrative expenses during 2019 will remain at a level consistent with 2018 provided

that we are able to raise additional funds to support our ongoing operations. Our forecasts related to general and administrative expenses are subject to significant change as events and opportunities occur during 2019 that could result in modifications to our business plans.

Other Income (Expense), net

	Year ended December 31,		
	2018	2017	Change
Total other income (expense), net	$ 134	$ (80)	$ 214

Other income (expense), net, reflects net income of $134 and net expense of $80 for the years ended December 31, 2018 and December 31, 2017, respectively. Net income during 2018 is primarily the result of $158 of investment income earned from the Company's short-term investments and higher average cash balances held during the year partially offset by imputed interest charges related to the Company's final installment payments made in connection with the early termination of a third-party manufacturing agreement that ended during 2016. Other expense, net, of $80 during 2017 is primarily due to the imputed interest charges referred to above.

Deemed Dividend on Series A Convertible Preferred Stock Issuance

During December 2017, the Company closed on a public offering of securities that included 4,667,000 Class A Units, priced at a public offering price of $2.25 per unit, with each unit consisting of one share of common stock, a Series A five-year warrant to purchase one share of common stock at an exercise price of $2.25 per share, and a Series B nine-month warrant to purchase 0.5 share of common stock at an exercise price of $2.25 per share, and 3,987 Class B Units, priced at a public offering price of $1,000 per unit, with each unit consisting of one share of preferred stock convertible to 445 shares of common stock at a conversion price of $2.25 per common share, Series A five-year warrants to purchase 445 shares of common stock at an exercise price of $2.25 per share, and Series B nine-month warrants to purchase 223 shares of common stock with an exercise price of $2.25 per share. Proceeds received from the offering were allocated to the various elements of the offering based on their relative fair values. The Series A Convertible Preferred Stock was valued on an as-if-converted basis based on the underlying common stock. The Series A and Series B warrants were valued using the Black-Scholes model.

After allocation of the proceeds, the effective conversion price of the Series A Convertible Preferred Stock was determined to be beneficial and, as a result, the Company recorded a non-cash deemed dividend of approximately $1,427 equal to the intrinsic value of the beneficial conversion feature. The Series A Convertible Preferred Stock was considered a participating security. In accordance with applicable accounting guidance, the Company's net loss of $9,396 from continuing operations for the year ended December 31, 2017 was increased by the amount of the deemed dividend from the beneficial conversion feature, resulting in a net loss attributable to common shareholders of $10,823, or $3.29 per common share.

As of March 31, 2018, preferred shareholders had converted all 3,987 of the preferred shares into an aggregate of 1,772,000 shares of common stock.

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 the Company's initial founding, including our fiscal year ended December 31, 2018. As of December 31, 2018, we had an accumulated deficit of $351,938. Our total unrestricted cash, cash equivalents and short-term investments as of December 31, 2018, were $5,769 as compared to $14,487 at December 31, 2017. As of December 31, 2018, we had no outstanding debt.

Our cash, cash equivalents and short-term investments at December 31, 2018, were held for working capital purposes. As of December 31, 2018, we had restricted cash of $332 which consisted of $307 held in connection with the lease agreement for our Woburn, Massachusetts facility and $25 held in connection with our corporate credit card used for small and incidental purchases.

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 December 31, 2018, we were in compliance with this policy.

We currently anticipate $9,000 - $9,500 of cash usage during 2019 to fund our operations. In March 2019 we closed on a registered direct offering of our common stock, raising $2.6 million, net of offering costs. We estimate that our current cash resources, including funds raised in the March offering, will be sufficient to fund operations and meet our obligations, when due, into the fourth quarter of 2019. 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 follow the guidance of Accounting Standards Codification ("ASC") Topic 205-40, *Presentation of Financial Statements-Going Concern*, in order to determine whether there is substantial doubt about the Company's ability to continue as a going concern for one year after the date our 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. We do 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, we will 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 the Company's present capital resources are not sufficient to fund our planned operations for a twelve-month period ending in March 2020, and therefore, raise substantial doubt about our ability to continue as a going concern.

If we issue equity or debt securities to raise additional funds, (i) the Company may incur fees associated with such issuance, (ii) our existing stockholders will experience dilution from the issuance of new equity securities, (iii) the Company may incur ongoing interest expense and be required to grant a security interest in Company 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 the Company.

Net cash used in operating activities was $8,754 during the year ended December 31, 2018, compared to net cash used by operating activities during 2017 of $8,202. Net cash used by operations during the year ended December 31, 2018 primarily reflects the net loss of $9,185, payment of 2017 employee bonuses of approximately $529 and payment of final obligations totaling $500 related to the Company's strategic restructuring initiated during 2016, partially offset by non-cash expenses, including stock-based compensation expense of $1,181, depreciation expense of $196, a 401(k) stock matching contribution expense of $102, noncash lease expense of $588 and a facility lease impairment charge of $255.

Net cash of $2,788 was used in investing activities during the year ended December 31, 2018, compared to net cash used in investing activities during 2017 of $6. During the year ended December 31, 2018, the Company purchased $11,496 in short-term investments, including U.S. Treasury notes and federal agency bonds. Also, during 2018, $8,750 of short-term investments matured and converted to cash.

Net cash of $118 was provided by financing activities during the year ended December 31, 2018, compared to net cash provided by financing activities of $15,272 during the year ended December 31, 2017. During 2017, we completed a registered direct offering of our securities, receiving cash proceeds from the transaction of $1,966, net of issuance costs of $317. Also, during 2017, we completed a public offering of our securities, receiving cash proceeds of $13,097, net of issuance costs of $1,392. During the years ended December 31, 2018 and December 31, 2017, the Company paid taxes of $6 and $12, respectively, related to our net settlement of employee vested stock awards. These taxes include payment of minimum federal, state or Canadian provincial income tax withholdings associated with employee restricted stock units (RSUs) that vested during each year. 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.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

YIELD10 BIOSCIENCE, INC.
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Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Yield10 Bioscience, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Yield10 Bioscience, Inc. and its subsidiaries (the Company) as of December 31, 2018 and 2017, the related consolidated statements of operations, comprehensive loss, stockholders' equity and cash flows for each of the years then ended, and the related notes to the consolidated financial statements (collectively, the financial statements). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for the years then ended, in conformity with accounting principles generally accepted in the United States of America.

Going Concern

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1, the Company has suffered recurring losses from operations which raises substantial doubt about its ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Change in Accounting Principle

As discussed in Note 2 to the financial statements, the Company elected to change its method of accounting for leasing transactions due to the adoption of Financial Accounting Standard Board's Accounting Standards Update 2016-02, *Leases*. This change has been retrospectively applied as of January 1, 2017.

Basis of Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ RSM US LLP

We have served as the Company's auditor since 2017.

Boston, Massachusetts
March 28, 2019, except for the matter described in Change in the Accounting Principle section of Note 2 and the New Lease Accounting section of Note 11, as to which the date is September 9, 2019

YIELD10 BIOSCIENCE, INC.
(formerly known as Metabolix, Inc.)

CONSOLIDATED BALANCE SHEETS
(In thousands, except share and per share amounts)

	December 31, 2018 (as adjusted)	December 31, 2017 (as adjusted)
Assets		
Current Assets:		
Cash and cash equivalents	$ 3,023	$ 14,487
Short-term investments	2,746	—
Accounts receivable	94	54
Unbilled receivables	66	65
Prepaid expenses and other current assets	448	222
Total current assets	6,377	14,828
Restricted cash	332	317
Property and equipment, net	1,385	1,539
Right-of-use assets	4,766	5,443
Other assets	100	109
Total assets	$ 12,960	$ 22,236
Liabilities and Stockholders' Equity		
Current Liabilities:		
Accounts payable	$ 117	$ 76
Accrued expenses	680	1,757
Lease liabilities	844	575
Total current liabilities	1,641	2,408
Lease liabilities, net of current portion	5,621	6,326
Total liabilities	7,262	8,734
Commitments and contingencies (Note 7)		
Stockholders' Equity:		
Series A Convertible Preferred Stock ($0.01 par value per share); 5,000,000 authorized at December 31, 2018 and 2017, respectively; 0 and 1,826 shares issued and outstanding at December 31, 2018 and 2017, respectively	—	818
Common stock ($0.01 par value per share); 60,000,000 shares and 40,000,000 shares authorized at December 31, 2018 and 2017, respectively; 10,025,811 and 9,089,159 shares issued and outstanding at December 31, 2018 and 2017, respectively	100	91
Additional paid-in capital	357,646	355,431
Accumulated other comprehensive loss	(110)	(85)
Accumulated deficit	(351,938)	(342,753)
Total stockholders' equity	5,698	13,502
Total liabilities and stockholders' equity	$ 12,960	$ 22,236

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

YIELD10 BIOSCIENCE, INC.
(formerly known as Metabolix, Inc.)

CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except share and per share amounts)

	Years Ended December 31,	
	2018 (as adjusted)	2017 (as adjusted)
Revenue:		
Grant revenue	$ 556	$ 944
Total revenue	556	944
Expenses:		
Research and development	4,783	4,619
General and administrative	5,092	5,641
Total expenses	9,875	10,260
Loss from operations	(9,319)	(9,316)
Other income (expense), net	134	(80)
Net loss	$ (9,185)	$ (9,396)
Loss attributable to common shareholders and loss per common share:		
Net loss	$ (9,185)	$ (9,396)
Deemed dividend on Series A Convertible Preferred Stock issuance	—	(1,427)
Net loss applicable to common shareholders	$ (9,185)	$ (10,823)
Basic and Diluted net loss per share	$ (0.92)	$ (3.29)
Number of shares used in per share calculations:		
Basic & Diluted	9,932,487	3,288,618

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

YIELD10 BIOSCIENCE, INC.
(formerly known as Metabolix, Inc.)

CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(In thousands)

	Years Ended December 31,	
	2018 (as adjusted)	2017 (as adjusted)
Net loss	$ (9,185)	$ (9,396)
Other comprehensive income (loss):		
Change in foreign currency translation adjustment	(25)	(1)
Total other comprehensive loss	(25)	(1)
Comprehensive loss	$ (9,210)	$ (9,397)

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

YIELD10 BIOSCIENCE, INC.
(formerly known as Metabolix, Inc.)

CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Years Ended December 31,	
	2018 (as adjusted)	2017 (as adjusted)
Cash flows from operating activities		
Net loss	$ (9,185)	$ (9,396)
Adjustments to reconcile net loss to cash used in operating activities:		
Depreciation	196	206
Expense for 401(k) company common stock match	102	85
Stock-based compensation	1,181	1,395
Noncash lease expense	588	501
Changes in operating assets and liabilities:		
Accounts receivable	(40)	12
Due from related parties	—	1
Unbilled receivables	(1)	56
Prepaid expenses and other assets	(128)	749
Accounts payable	41	17
Accrued expenses	(1,072)	(752)
Lease liabilities	(436)	(1,076)
Net cash used in operating activities	(8,754)	(8,202)
Cash flows from investing activities		
Purchase of property and equipment	(42)	(6)
Purchase of investments	(11,496)	—
Proceeds from sale and maturity of short-term investments	8,750	—
Net cash used by investing activities	(2,788)	(6)
Cash flows from financing activities		
Proceeds from warrants exercised	124	—
Proceeds from private placement offering, net of issuance costs	—	1,966
Proceeds from public stock offerings, net of issuance costs	—	13,318
Taxes paid on employees' behalf related to vesting of stock awards	(6)	(12)
Net cash provided by financing activities	118	15,272
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(25)	(1)
Net (decrease) increase in cash, cash equivalents and restricted cash	(11,449)	7,063
Cash, cash equivalents and restricted cash at beginning of period	14,804	7,741
Cash, cash equivalents and restricted cash at end of period	$ 3,355	$ 14,804
Supplemental Cash Flow Disclosure:		
Interest paid	$ 19	$ 83
Supplemental Disclosure of Non-cash Information:		
Right-of-use assets acquired in exchange for lease liabilities	$ 184	$ —
Stock offering costs remaining in accounts payable and accrued expenses	$ —	$ 221
Deemed dividend related to Series A Convertible Preferred Stock beneficial conversion feature	$ —	$ 1,427

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

YIELD10 BIOSCIENCE, INC.
(formerly known as Metabolix, Inc.)

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In thousands, except share amounts)

	Series A Convertible Preferred Stock		Common Stock					
	Shares	Par Value	Shares	Par Value	Additional Paid-In Capital	Accumulated other Comprehensive Income (loss)	Accumulated Deficit	Total Stockholders' Equity
Balance, December 31, 2016	—	$ —	2,834,244	$ 28	$ 339,782	$ (84)	$ (333,357)	$ 6,369
Non-cash stock-based compensation expense	—	—	—	—	1,395	—	—	1,395
Issuance of common stock for 401k match	—	—	22,493	—	84	—	—	84
Issuance of stock for restricted stock unit release, net of 2,724 shares withheld for employee taxes (See Note 10)	—	—	34,193	1	(13)	—	—	(12)
Issuance of common stock in connection with registered direct offering, net of offering costs of $317	—	—	570,784	5	1,961	—	—	1,966
Issuance of common stock, preferred stock and warrants in connection with public offering, net of offering costs of $1,392	3,987	1,786	4,667,000	47	11,264	—	—	13,097
Beneficial conversion feature of Series A Convertible Preferred Stock	—	(1,427)	—	—	1,427	—	—	—
Deemed dividend to Series A Convertible Preferred Stockholders	—	1,427	—	—	(1,427)	—	—	—
Issuance of common stock upon conversion of Series A Convertible Preferred Stock	(2,161)	(968)	960,445	10	958	—	—	—
Effect of foreign currency translation	—	—	—	—	—	(1)	—	(1)
Net loss	—	—	—	—	—	—	(9,396)	(9,396)
Balance, December 31, 2017	1,826	$ 818	9,089,159	$ 91	$ 355,431	$ (85)	$ (342,753)	$ 13,502
Non-cash stock-based compensation expense	—	—	—	—	1,181	—	—	1,181
Issuance of common stock for 401k match	—	—	65,594	—	107	—	—	107
Issuance of stock for restricted stock unit release, net of 2,703 shares withheld for employee taxes (see Note 10)	—	—	4,401	—	(6)	—	—	(6)
Issuance of common stock upon conversion of Series A Convertible Preferred Stock	(1,826)	(818)	811,557	8	810	—	—	—
Issuance of common stock in connection upon exercise of Class B Warrants	—	—	55,100	1	123	—	—	124
Effect of foreign currency translation	—	—	—	—	—	(25)	—	(25)
Net loss	—	—	—	—	—	—	(9,185)	(9,185)
Balance, December 31, 2018 (as adjusted)	—	$ —	10,025,811	$100	$ 357,646	$ (110)	$ (351,938)	$ 5,698

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

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(In thousands, except for share and per share amounts)

1. Nature of Business and Basis of Presentation

Yield10 Bioscience, Inc. ("Yield10 Bioscience," "Yield10" or the "Company") is an agricultural bioscience company which uses its "Trait Factory" development process, which is a combination of the Company's unique background and expertise in metabolic modeling, genetic engineering, genome editing and next generation microbial gene systems, in order to develop high value seed traits for the agriculture and food industries. Specifically, Yield10 plans to efficiently develop superior gene traits for the major grain crops, which are; corn, soybean, canola, wheat and rice. The Company considers 10-20 percent increases in crop yield to be step-change increases. Yield10 is currently progressing several novel yield gene traits in its pipeline in canola, soybean and corn, the major North American row crops, among others. Over the last three years, the Company has evaluated certain of its traits in greenhouse studies and field tests conducted in the United States and Canada. Yield10 currently has two non-exclusive research license agreements in place with the Monsanto division of Bayer Crop Science, a division of Bayer AG, for the evaluation of the Company's C3003 and C3004 traits in soybean and with Forage Genetics International, LLC, a division of Land O'Lakes, Inc. for the evaluation of five yield traits in forage sorghum. The Company's business strategy is to progress its traits into field tests to generate validating yield data. Over the last three years, the Company has progressed its evaluation of C3003 in field test with Camelina and canola. Yield10 is planning to expand its field tests with additional traits and more events in 2019 and 2020. The Company plans to leverage data that it generates to support the performance of its traits in key crops to establish collaborations or sign licenses to the traits with major agricultural companies in order to generate revenue. Yield10 Bioscience is headquartered in Woburn, Massachusetts and has an oilseed development Center of Excellence in Saskatoon, Saskatchewan, Canada.

The accompanying 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 a single year, the Company has recorded losses since its initial founding, including its fiscal year ending December 31, 2018.

As of December 31, 2018, the Company held unrestricted cash, cash equivalents and short-term investments of $5,769. In March 2019 the Company closed on a registered direct offering of its common stock, raising $2,607, net of offering costs. The Company follows the guidance of Accounting Standards Codification ("ASC") Topic 205-40, *Presentation of Financial Statements-Going Concern,* 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. Based on its current cash forecast, which includes funds raised from the March 2019 offering, management expects that the Company's present capital resources will be sufficient to fund its planned operations and meet its obligations into the fourth quarter of 2019. 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'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, warrant holders' ability and willingness to exercise the Company's outstanding warrants, additional government grants or collaborative arrangements with third parties, as to which no assurance 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, management will 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 its cash forecast, management has determined that the Company's present capital resources will not be sufficient to fund its planned operations for the twelve months from the date that these financial statements are issued, which raises substantial doubt about the Company's ability to continue as a going concern.

If the Company issues equity or debt securities to raise additional funds, (i) the Company may incur fees associated with such issuance, (ii) its existing stockholders may experience dilution from the issuance of new equity securities, (iii) the Company may incur ongoing interest expense and be required to grant a security interest in Company 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 the Company’s existing stockholders. In addition, utilization of the Company’s 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 the Company raises additional funds through collaboration, licensing or other similar arrangements, it may be necessary to relinquish valuable rights to its potential products or proprietary technologies or grant licenses on terms that are not favorable to the Company.

2. Summary of Significant Accounting Policies

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.

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.

Cash, Cash Equivalents and Restricted Cash

The Company considers all highly liquid investments purchased with an original maturity date of ninety days or less at the date of purchase to be cash equivalents.

The following table provides a reconciliation of cash, cash equivalents and restricted cash reported within the Company's condensed consolidated balance sheets included herein:

	December 31, 2018	December 31, 2017
Cash and cash equivalents	$ 3,023	$ 14,487
Restricted cash	332	317
Total cash, cash equivalents and restricted cash	$ 3,355	$ 14,804

Amounts included in restricted cash represent those required to be set aside by contractual agreement. Restricted cash of $332 at December 31, 2018 and $317 at December 31, 2017 primarily consists of funds held in connection with the Company's lease agreement for its Woburn, Massachusetts facility.

Investments

The Company considers all investments purchased with an original maturity date of ninety days or more at the date of purchase and a maturity date of one year or less at the balance sheet date to be short-term investments. All other investments are classified as long-term. The Company held no long-term investments at December 31, 2018 and no short or long-term investments at December 31, 2017.

Other-than-temporary impairments of equity investments are recognized in the Company's statements of operations if the Company has experienced a credit loss and has the intent to sell the investment or if it is more likely than not that the Company will be required to sell the investment before recovery of the amortized cost basis. Realized gains and losses, dividends, interest income and declines in value judged to be other-than-temporary credit losses are included in other income (expense). Any premium or discount arising at purchase is amortized and/or accreted to interest income.

Deferred Equity Financing Costs

The Company entered into a common stock purchase agreement in 2015 with Aspire Capital Fund, LLC, (Aspire) under which Aspire committed to purchase up to an aggregate of $20,000 of the Company's common stock over a 30-month period. Offering costs of $622 incurred to establish this agreement were recorded as deferred equity financing costs. During 2017 these deferred offering costs were recognized in full within general and administrative expense when the Aspire agreement ended before any shares of common stock were sold.

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.

Comprehensive Income (Loss)

Comprehensive income (loss) is comprised of net income (loss) and certain changes in stockholders' equity that are excluded from net income (loss). The Company includes unrealized gains and losses on debt securities and foreign currency translation adjustments in other comprehensive income (loss).

Concentration of Credit Risk

Financial instruments that potentially subject the Company to concentrations of credit risk primarily consist of cash and cash equivalents, short-term investments and accounts receivable. 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 are acquired in accordance with the Company's investment policy which establishes a concentration limit per issuer.

The Company's receivables related to government grants are believed to have a low risk of default. At December 31, 2018, the Company's accounts and unbilled receivables of $160 are all due from research grants with the U.S. government under which the Company serves as either the primary contractor or as a subcontractor. At December 31, 2017, the Company's accounts and unbilled receivables of $119 included $104, or 87%, from grants with the U.S. government.

Fair Value Measurements

The carrying amounts of the Company's financial instruments as of December 31, 2018 and December 31, 2017, which include cash equivalents, accounts receivable, unbilled receivables, accounts payable, and accrued expenses, approximate their fair values due to the short-term nature of these instruments. See Note 4 for further discussion on fair value measurements.

Segment Information

The accounting guidance for segment reporting establishes standards for reporting information on operating segments in annual financial statements. The Company is an agricultural bioscience company operating in one segment, which is the development of new technologies to enable step-change increases in crop yield to enhance global food security. The Company's chief operating decision-maker does not manage any part of the Company separately, and the allocation of resources and assessment of performance are based on the Company's consolidated operating results. As of December 31, 2018, and December 31, 2017, less than 10% of the Company's combined total assets were located outside of the United States. During the year ended December 31, 2018, reported net income (loss) from the Company's wholly-owned subsidiaries located outside of the United States totaled $3,103, primarily as a result of the Company's accounting for the dissolution of its inactive German subsidiary, Metabolix GmbH. During the year ended December 31, 2017, the reported net income (loss) from the Company's foreign subsidiaries was less than 10% of the combined net income (loss) of the consolidated Company.

Property and Equipment

Property and equipment are stated at cost less accumulated depreciation. Repairs and maintenance are charged to operating expense as incurred. Depreciation is computed using the straight-line method over the estimated useful lives of the assets once they are placed in service as follows:

Asset Description	Estimated Useful Life (years)
Equipment	3
Furniture and Fixtures	5
Software	3
Leasehold improvements	Shorter of useful life or term of lease

The Company records incentive payments received from its landlords as a lease incentive obligation and amortizes these amounts as reductions to lease expense over the lease term.

Impairment of Long-Lived Assets

Long-lived assets, such as property and equipment, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Accounting guidance further requires that companies recognize an impairment loss only if the carrying amount of a long-lived asset is not recoverable based on its undiscounted future cash flows and measure an impairment loss as the difference between the carrying amount and fair value of the asset.

Grant Revenue

The Company's source of continuing revenue is from its government research grants in which it serves as either the primary contractor or as a subcontractor. These grants are considered an ongoing major and central operation of the Company's business. Revenue is earned as research expenses related to the grants are incurred. Revenue earned on government grants, but not yet invoiced as of the balance sheet date, are recorded as unbilled receivables in the accompanying consolidated balance sheets for the years ended December 31, 2018 and December 31, 2017. Funds received from government grants in advance of work being performed are recorded as deferred revenue until earned.

Research and Development

All costs associated with internal research and development are expensed as incurred. Research and development expenses include, among others, direct costs for salaries, employee benefits, subcontractors, product trials, facility related expenses, depreciation, and stock-based compensation. Costs incurred in connection with government research grants are recorded as research and development expenses.

General and Administrative Expenses

The Company's general and administrative expense includes costs for salaries, employee benefits, facilities expenses, consulting and professional service fees, travel expenses, depreciation expenses and office related expenses incurred to support the administrative operations of the Company.

Intellectual Property Costs

The Company includes all costs associated with the prosecution and maintenance of patents within general and administrative expenses in the consolidated statement of operations.

Stock-Based Compensation

All share-based payments to employees, members of the Board of Directors and non-employees are recognized within operating expense based on the straight-line recognition of their grant date fair value over the period during which the recipient is required to provide service in exchange for the award. See Note 10 for a description of the types of stock-based awards granted, the compensation expense related to such awards and detail of equity-based awards outstanding.

Basic and Diluted Net Loss per Share

Basic net income (loss) per share is computed by dividing net income (loss) available to common shareholders by the weighted-average number of common shares outstanding. Diluted net loss per share is computed by dividing net income available to common shareholders 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, such as the Company's fiscal years ending December 31, 2018 and 2017, all common stock equivalents are excluded from the calculation because they would have an anti-dilutive effect in the calculation of loss per share; 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, convertible preferred stock and warrants.

The Company follows the two-class method when computing net loss per share, when it has issued shares that meet the definition of participating securities. The two-class method determines net income per share for each class of common and participating securities according to dividends declared or accumulated and participating rights in undistributed earnings. The two-class method requires income available to common stockholders for the period to be allocated between common and participating securities based on their respective rights to receive dividends, as if all income for the period has been distributed or losses to be allocated if they are contractually required to fund losses. In periods of net loss, a participating security that does not have a contractual obligation to share in the loss is not allocated a portion of the net loss when determining loss per share under the two-class method. During 2017, the Company completed an offering of its securities that included preferred shares meeting the definition of participating securities (See Note 9). However, due to the Company's net loss in 2017, no allocation of the net loss was allocated to the preferred shares as the holders of the preferred shares do not have a contractual obligation to fund losses and loss per share has been computed and presented based on the loss being fully assigned to the Company's weighted average outstanding common shares during the year. There were no amounts allocated to participating securities during the year ended December 31, 2018, as the Company had no outstanding securities that met the definition of participating securities.

The number of shares of potentially dilutive common stock presented on a weighted average basis, related to options, restricted stock units, convertible preferred stock 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 years ended December 31, 2018 and 2017, respectively, are shown below:

	Year Ended December 31,	
	2018	**2017**
Options	1,294,180	622,329
Restricted stock awards	8,866	16,165
Series A Convertible Preferred Stock	—	30,553
Warrants	7,433,084	943,749
Total	8,736,130	1,612,796

Income Taxes

The Company accounts for income taxes using the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been recognized in the consolidated financial statements or in the Company's tax returns. Under this method, deferred tax assets and liabilities are determined based on the difference between the financial statement and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. A valuation allowance is provided to reduce the deferred tax asset to a level which, more likely than not, will be realized.

In December 2017, the Tax Cuts and Jobs Act, or the Tax Act ("TCJA"), was signed into law. Among other things, the Tax Act permanently lowered the corporate federal income tax rate to 21% effective for tax years including or commencing January 1, 2018. As a result of the reduction of the corporate federal income tax rate, GAAP requires companies to revalue their deferred tax assets and deferred tax liabilities as of the date of enactment, with the resulting tax effects accounted for in the

reporting period of enactment. Due to its ongoing tax losses and 100% valuation allowance assigned to its deferred tax assets, the enactment of TCJA was immaterial to the Company's financial statements.

The Company accounts for uncertain tax positions using a "more-likely-than-not" threshold for recognizing and resolving uncertain tax positions. The evaluation of uncertain tax positions is based on factors that include, but are not limited to, changes in tax law, the measurement of tax positions taken or expected to be taken in tax returns, the effective settlement of matters subject to audit, new audit activity and changes in facts or circumstances related to a tax position. The provision for income taxes includes the effects of any resulting tax reserves or unrecognized tax benefits that are considered appropriate as well as the related net interest and penalties, if any. The Company evaluates uncertain tax positions on a quarterly basis and adjusts the level of the liability to reflect any subsequent changes in the relevant facts surrounding the uncertain positions.

See Note 11 for further discussion of income taxes. The Company had no amounts recorded for any unrecognized tax benefits as of December 31, 2018 and 2017.

Restructuring Charges

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. Obligations associated with these charges are reduced or adjusted as payments are made or the Company's estimates are revised.

Change in Accounting Principle

In February 2016, the FASB issued ASU No. 2016-02, which requires lessees to recognize most leases on their balance sheet as right-of-use assets and lease liabilities. In July 2018, the FASB issued ASU No. 2018-10, "*Codification Improvements to Topic 842, Leases*" ("ASU 2018-10") which provided narrow amendments to clarify how to apply certain aspect of the new lease standard, and ASU No. 2018-11, "*Leases (Topic 842 - Targeted Improvements" ("ASU 2018-11*"), which addressed implementation issues related to the new lease standard. The new guidance was effective for annual reporting periods beginning after December 15, 2018 and interim periods within those fiscal years, and early adoption was permitted (collectively, "Topic 842"). Under the new standard, disclosures are required to enable users of financial statements to better assess the amount, timing, and uncertainty of cash flows arising from leases. Topic 842 required filers to adopt the new standard using a modified retrospective approach under either of two transition methods; (1) to apply the new lease requirements at the beginning of the earliest period presented, or (2) to apply the new lease requirements at the effective date. The Company adopted the new standard on January 1, 2019 and elected to apply the new lease requirements at the beginning of the earliest period presented. Adoption of Topic 842 had a material impact on the Company's previously reported 2018 and 2017 balance sheets. The accompanying financial statements for the years ended December 31, 2018 and 2017 have been adjusted to reflect the impact of Topic 842. See Note 11.

Recent Accounting Standards Changes

From time to time, new accounting pronouncements are issued by the Financial Accounting Standards Board ("FASB") or other standard setting bodies that the Company adopts as of the specified effective date.

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 in the treatment of this area between GAAP and IFRS, 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 Company adopted the new standard effective January 1, 2018 using the modified retrospective method and determined that its grant revenue, which is its sole source of revenue, does not fall within the guidance of the new standard. The Company will review future customer revenue agreements against the guidance provided by ASU No. 2014-09 to ensure that revenue is recorded appropriately.

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*. This new standard amended certain aspects of accounting and disclosure requirements for financial instruments, including the requirement that equity investments with readily determinable fair values are to be measured at fair value with any changes in fair value recognized in a company's statements of operations. Prior to adoption of ASU 2016-01, companies recognized changes in fair value in accumulated other comprehensive income (loss), net. 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. 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 Company adopted this new standard on January 1, 2018, using the modified retrospective method, and determined that it did not have a material impact on its financial statements.

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 Company adopted this new standard on January 1, 2018 and determined that it did not have a material impact on its financial statements.

In October 2016, the FASB issued ASU No. 2016-16, *Income Taxes (Topic 740): Intra-Entity Transfer of Assets Other Than Inventory*. This new standard eliminates the deferral of the tax effects of intra-entity asset transfers other than inventory. As a result, the income tax consequences from the intra-entity transfer of an asset other than inventory and associated changes to deferred taxes will be recognized when the transfer occurs. The Company adopted this new standard on January 1, 2018 and determined that it did not have a material impact on its financial statements.

In November 2016, the FASB issued ASU 2016-18, *Statement of Cash Flows (Topic 230): Restricted Cash* ("ASU 2016-18"). The new standard provides uniform guidance for the classification and presentation of changes in restricted cash on the statement of cash flows under Topic 230, *Statement of Cash Flows*. ASU 2016-18 requires that a statement of cash flows explain the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash. Therefore, amounts included in restricted cash should be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. ASU 2016-18 was effective for the Company for its fiscal year beginning January 1, 2018, including interim periods, and requires a retrospective presentation of each period presented. As a result, the Company's consolidated statement of cash flows for the fiscal years ended December 31, 2018 and December 31, 2017 have been prepared in accordance with the new requirements of ASU 2016-18.

In July 2018, the FASB issued ASU 2018-07, *Stock-based Compensation: Improvements to Nonemployee Share-based Payment Accounting*, which amends the existing accounting standards for share-based payments to nonemployees. ASU 2018-07 aligns much of the guidance on measuring and classifying nonemployee awards with that of awards to employees. Under the new guidance, the measurement of nonemployee equity awards is fixed on the grant date. Entities are required to apply ASU 2018-07 by recognizing a cumulative effect adjustment to retained earnings as of the beginning of the annual period of adoption. The ASU becomes effective during the first quarter of 2019 with early adoption permitted. The Company adopted ASU 2018-07 on July 1, 2018 and determined that it did not have a material impact on its financial statements.

New pronouncements that are not yet effective but may impact the Company's financial statements in the future are described below.

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.

3. INVESTMENTS

The Company's investments consist of the following:

	Accumulated Cost at December 31, 2018	Unrealized		Market Value at December 31, 2018
		Gain	(Loss)	
Short-term investments				
Government securities	$ 2,746	$ —	$ —	$ 2,746
Total	$ 2,746	$ —	$ —	$ 2,746

The Company did not own any investments at December 31, 2017.

4. 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.

The Company’s financial assets classified as Level 2 at December 31, 2018, were initially valued at the transaction price and subsequently valued utilizing third-party pricing services. Because the Company’s investment portfolio may include securities that do not always trade on a daily basis, the pricing services use many observable market inputs to determine value including reportable trades, benchmark yields and benchmarking of like securities. The Company validates the prices provided by the third-party pricing services by reviewing their pricing methods and obtaining market values from other pricing sources. After completing the validation procedures, the Company did not adjust or override any fair value measurements provided by these pricing services as of December 31, 2018.

The tables below present information about the Company’s assets that are measured at fair value on a recurring basis as of December 31, 2018 and December 31, 2017 and indicate the fair value hierarchy of the valuation techniques utilized to determine such fair value.

	Fair value measurements at reporting date using			
Description	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	Balance as of December 31, 2018
Cash equivalents:				
Money market funds	$ 2,663	$ —	$ —	$ 2,663
Short-term investments:				
U.S. government and agency securities	—	2,746	—	2,746
Total	$ 2,663	$ 2,746	$ —	$ 5,409

	Fair value measurements at reporting date using			
	Quoted prices in active markets for identical assets	Significant other observable inputs	Significant unobservable inputs	Balance as of
Description	(Level 1)	(Level 2)	(Level 3)	December 31, 2017
Cash equivalents:				
Money market funds	$ 11,025	$ —	$ —	$ 11,025
Total	$ 11,025	$ —	$ —	$ 11,025

There were no transfers of financial assets or liabilities between category levels for the years ended December 31, 2018 and December 31, 2017.

5. Property and Equipment, Net

Property and equipment consist of the following:

	Year ended December 31,	
	2018	2017
Equipment	$ 907	$ 1,059
Furniture and fixtures	119	119
Leasehold improvements	1,749	1,749
Software	72	96
Total property and equipment, at cost	2,847	3,023
Less: Accumulated depreciation	(1,462)	(1,484)
Property and equipment, net	$ 1,385	$ 1,539

Depreciation expense for the years ended December 31, 2018 and December 31, 2017, was $196 and $206, respectively.

6. Accrued Expenses

Accrued expenses consist of the following:

	Year ended December 31,	
	2018	2017
Employee compensation and benefits	$ 98	$ 646
Leased facilities	50	43
Commercial manufacturing	—	489
Professional services	234	335
Other	298	244
Total accrued expenses	$ 680	$ 1,757

Included within the employee compensation and benefits accrual at December 31, 2017 is $542 for 2017 employee bonuses that were paid in early 2018. A bonus accrual was not recorded at December 31, 2018. Accrued professional services at December 31, 2017 includes $216 of professional fees related to the Company's securities offering that was completed in December of that year and accrued commercial manufacturing expenses at December 31, 2017 represents a manufacturing

contract obligation recorded in connection with the Company's discontinuation of its biopolymer business during 2016. See Note 15.

7. Commitments and Contingencies

Contractual Commitments

In connection with the wind down of its biopolymer operations during 2016, the Company ceased pilot production of biopolymer material and reached agreements with the owner-operators of its biopolymer production facilities regarding the early termination of their services. The Company recorded contract termination costs and an associated contract termination obligation related to these manufacturing agreements of $2,641 during 2016. The Company made the final payments of $489 against the termination obligation during 2018.

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 December 31, 2018, and December 31, 2017, 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 these agreements is minimal. Accordingly, the Company has no liabilities recorded for these agreements as of December 31, 2018 and December 31, 2017.

8. License Agreements

During 2018 and 2017 the Company entered into two non-exclusive licensing arrangements with third parties for the evaluation of the Company's yield trait genes. Neither of these research arrangements will provide licensing revenue to the Company while the third parties perform their trait evaluations.

In December 2017, the Company granted a license to the Monsanto Division of Bayer Crop Science (formerly Monsanto Company), a division of Bayer AG, to evaluate the Company's novel C3003 and C3004 yield traits in soybean. Under this license, Monsanto Crop Science has the non-exclusive right to begin work with C3003 in its soybean program as a strategy to improve seed yield. Monsanto may also conduct research with the Company's C3004 yield trait, a trait accessible through genome editing, in combination with C3003 to evaluate the effectiveness of the combination in improving seed yield in soybean.

In September 2018, the Company granted a non-exclusive license to Forage Genetics International, LLC ("Forage Genetics"), a subsidiary of Land O'Lakes, Inc., to evaluate five of the Company's novel traits in forage sorghum. The traits included in the research license include C3003 as well as four traits from the Company's GRAIN platform, C4001, C4002, C4003 and C4029. The C4000 series traits have been shown to significantly increase photosynthesis and biomass in research conducted by the Company. The key objective of the licensing agreement is to provide Forage Genetics with novel traits to test alone and/or in any combination in sorghum that may lead to the identification of new yield traits for potential future licensing from the Company for development and commercial deployment.

9. Capital Stock

Common Stock

On May 23, 2018, the Company held its 2018 Annual Meeting, at which stockholders approved an amendment to the Certificate of Incorporation to increase from 40,000,000 shares to 60,000,000 shares the aggregate number of shares of common stock that are authorized to be issued. As a result of this vote, on May 23, 2018, the Company filed a Certificate of Amendment to its Certificate of Incorporation with the Secretary of State of the State of Delaware to increase the number of authorized shares. Also, at the Annual Meeting, stockholders approved the adoption of the Company's 2018 Stock Plan. The 2018 Stock Plan reserves for issuance 1,300,000 shares of the Company's common stock for grants of incentive stock options, nonqualified stock options, stock grants and stock-based awards. Shares available under the 2018 Stock Plan will be increased on the first day of January 2019 and 2020 in an amount equal to 5% of the outstanding shares of common stock on the day prior to the increase in each respective year or such smaller number of shares of common stock as determined by the Board of Directors.

During December 2017, the Company closed on a public offering of its securities, receiving cash proceeds of $13,097, net of issuance costs of $1,392. The offering included 4,667,000 Class A Units, priced at a public offering price of $2.25 per unit, with each unit consisting of one share of common stock, a Series A five-year expiration warrant to purchase one share of common stock at an exercise price of $2.25 per share, and a Series B nine-month expiration warrant to purchase 0.5 share of common stock at an exercise price of $2.25 per share, and 3,987 Class B Units, priced at a public offering price of $1,000 per unit, with each unit consisting of one share of preferred stock, having a conversion price of $2.25, Series A five-year warrants to purchase 445 shares of common stock at an exercise price of $2.25 per share, and Series B nine-month warrants to purchase 223 shares of common stock with an exercise price of $2.25 per share. The Company determined that both the preferred stock and the warrants should be recorded within stockholders' equity at December 31, 2017.

Proceeds received from the offering were allocated to the various elements of the offering based on their relative fair values. The fair value of the Common Stock is its closing market price on December 21, 2017, the closing date of the offering. The Series A Convertible Preferred Stock was valued on an as-if-converted basis based on the underlying common stock and the Series A and Series B warrants were valued using the Black-Scholes model with the following weighted-average input at the time of issuance:

- an expected term of 5.0 years and 0.75 years for the Series A and Series B warrants, respectively,
- risk free rates of 2.2 percent and 1.7 percent for the Series A and Series B warrants, respectively, based on the published rates of U.S. treasury bills with similar terms, and
- volatility of 125 percent based on the Company’s historical volatility.

After allocation of the proceeds, the effective conversion price of the Series A Convertible Preferred Stock was determined to be beneficial and, as a result, the Company recorded a one-time non-cash deemed dividend during December 2017 of $1,427 equal to the intrinsic value of the beneficial conversion feature. The Series A Convertible Preferred Stock did not have a stated redemption date, and as a consequence, accounting guidance required immediate recognition of a beneficial conversion feature rather than amortization of the benefit over time. The Series A Convertible Preferred Stock was considered a participating security. In accordance with applicable accounting guidance, the Company's 2017 loss of $9,396 from operations was increased by the amount of the deemed dividend resulting in a net loss attributable to common shareholders of $10,823. As of March 19, 2018, preferred shareholders had converted all 3,987 of the preferred shares into 1,772,000 shares of common stock.

On September 12, 2017, the Company issued warrants to purchase 30,000 shares of common stock to the Company's investor relations consultant, in consideration for services rendered and to be rendered by the consultant. These warrants have an exercise price of $2.90 per share and are exercisable in whole or part at any time during the period commencing on September 12, 2017 and ending on September 11, 2024. The Company reviewed the accounting guidance for warrants and determined that the warrants should be recorded as equity within additional paid-in capital.

On July 7, 2017, the Company completed a registered direct offering of its securities. Proceeds from the transaction were approximately $1,966, net of issuance costs of $317. 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 January 7, 2018 and until their expiration on January 7, 2024. In accordance with accounting guidance for warrants, these warrants were also recorded as equity within additional paid-in capital.

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.

Preferred Stock

The Company's certificate of incorporation, as amended and restated, authorizes it to issue up to 5,000,000 shares of $0.01 par value preferred stock.

As discussed above, during December 2017 the Company closed on a public offering of its securities that included issuance of 3,987 shares of Series A Convertible Preferred Stock. Each preferred share was convertible, at the holder's option, into 445 shares of common stock at a conversion price of $2.25 per share, subject to adjustments as a result of stock dividends and stock splits. The Company determined the Series A Convertible Preferred Stock should be classified as equity as it was not mandatorily redeemable, there were no unconditional obligations requiring the Company to settle in a variable number of common shares or settle through the transfer of assets and the monetary value of the preferred shares was fixed. As of March 19, 2018, all of the 3,987 preferred shares had been converted to 1,772,000 shares of common stock. When converted, the shares of converted Series A Convertible Preferred Stock were restored to the status of authorized but unissued shares of preferred stock, subject to reissuance by the Board of Directors.

Warrants

The following table summarizes information with regard to outstanding warrants to purchase common stock as of December 31, 2018:

Issuance	Number of Shares Issuable Upon Exercise of Outstanding Warrants	Exercise Price	Expiration Date
June 2015 Private Placement	393,300	$ 39.80	June 15, 2019
July 2017 Registered Direct Offering	570,784	$ 5.04	January 7, 2024
December 2017 Public Offering - Series A	6,439,000	$ 2.25	December 21, 2022
Consultant	30,000	$ 2.90	September 11, 2024
Total	7,433,084		

During 2018 a total of 55,100 Series B warrants from the December 2017 public offering were exercised resulting in the issuance of 55,100 shares of common stock and the Company's receipt of $124 in cash proceeds. On September 21, 2018, the remaining unexercised Series B warrants expired in accordance with their terms.

Reserved Shares

The following common stock shares were reserved for future issuance upon exercise of stock options, release of Restricted Stock Units ("RSUs"), conversion of outstanding Series A Convertible Preferred Stock and conversion of outstanding warrants:

	December 31, 2018	December 31, 2017
Stock Options	1,745,037	702,033
RSUs	7,101	14,367
Series A Convertible Preferred Stock	—	811,555
Warrants	7,433,084	10,652,586
Total number of common shares reserved for future issuance	9,185,222	12,180,541

10. Stock-Based Compensation

Stock Option Plans

The Company adopted a stock plan in 2006 (the "2006 Plan"), which provided for the granting of incentive stock options, nonqualified stock options, stock appreciation rights, deferred stock awards, restricted stock awards, unrestricted stock awards, cash-based awards and dividend equivalent rights. In October 2014, the 2006 Plan was terminated, and the Company adopted a new plan (the "2014 Plan"). No further grants or awards were subsequently made under the 2006 Plan. A total of 146,724 options were awarded from the 2006 Plan and as of December 31, 2018, 21,867 of these options remain outstanding and eligible for future exercise.

The 2014 Plan provides for the granting of incentive stock options, nonqualified stock options, stock appreciation rights, deferred stock awards, restricted stock awards, unrestricted stock awards, cash-based awards and dividend equivalent rights. In May 2018, the 2014 Plan was terminated, and the Company adopted a new 2018 Stock Option and Incentive Plan (the "2018 Stock Plan"). A total of 675,529 options have been awarded from the 2014 Plan and as of December 31, 2018, 667,699 of these options remain outstanding and eligible for future exercise. A total of 144,541 restricted stock awards have been awarded from the 2014 Plan and as of December 31, 2018, 7,101 of these restricted stock awards are unvested and outstanding. No further stock awards may be issued from the 2014 Plan.

The 2018 Stock Plan reserves for issuance 1,300,000 shares of the Company's common stock for grants of incentive stock options, nonqualified stock options, stock grants and stock-based awards. Shares available under the 2018 Stock Plan will be increased on the first day of January 2019 and 2020 in an amount equal to 5% of the outstanding shares of common stock on the day prior to the increase in each respective year or such smaller number of shares of common stock as determined by the Board of Directors. In its meeting held on February 12, 2019, the Company's Board of Directors approved the addition of 501,290 shares to the 2018 Stock Plan which represented 5% of the outstanding shares of common stock on December 31, 2018. As of December 31, 2018, a total of 1,038,242 options have been awarded from the 2018 Stock Plan, and as of that date, 1,036,304 options remain outstanding.

Expense Information for Stock Awards

The Company recognized stock-based compensation expense, related to employee stock awards, including awards to non-employees and members of the Board of Directors, of $1,181 and $1,395 for the years ended December 31, 2018 and 2017, respectively. At December 31, 2018, there was approximately $1,184 of stock-based compensation expense related to unvested awards not yet recognized which is expected to be recognized over a weighted average period of 3.31 years.

Stock Options

Options granted under the 2006 Plan, 2014 Plan and 2018 Stock Plan generally vest ratably over periods of one to four years from the date of hire for new employees, or date of award for existing employees, or date of commencement of services with the Company for non-employees, and generally expire ten years from the date of issuance. The Company's policy is to issue new shares upon the exercise of stock options.

A summary of the activity related to the shares of common stock covered by outstanding options is as follows:

	Number of Shares	Weighted Average Exercise Price	Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Balance at December 31, 2017	702,033	$16.21		
Granted	1,050,667	1.62		
Exercised	—	—		
Forfeited	(2,979)	4.75		
Expired	(4,684)	412.74		
Balance at December 31, 2018	1,745,037	6.38	8.63	$—
Vested and expected to vest at December 31, 2018	1,745,037	6.38	8.63	—
Exercisable at December 31, 2018	877,058	11.05	7.87	—

The weighted average grant date fair value per share of options granted during fiscal years 2018 and 2017, was $1.33, and $2.10, respectively. No options were exercised during 2018 and 2017, and therefore the intrinsic value for exercised options during the two years was not applicable. The weighted average remaining contractual term for options outstanding as of December 31, 2018 was 8.6 years.

For the years ended December 31, 2018, and 2017, the Company determined the fair value of stock options using the Black-Scholes option pricing model with the following assumptions for option grants, respectively:

	Year Ended December 31,	
	2018	2017
Expected dividend yield	—	—
Risk-free rate	2.6% - 3.1%	1.8% - 2.2%
Expected option term (in years)	5.5 - 5.9	5.3 - 5.5
Volatility	107% - 110%	97% - 104%

The Company determined its volatility assumption based on actual market price fluctuations experienced during its trading history. The risk-free interest rate used for each grant is equal to the U.S. Treasury yield curve in effect at the time of grant for instruments with a term similar to the expected life of the related option. The expected term of the options is based upon evaluation of historical and expected future exercise behavior.

The stock price volatility and expected terms utilized in the calculation involve management's best estimates at that time, both of which impact the fair value of the option calculated under the Black-Scholes methodology and, ultimately, the expense that will be recognized over the life of the option. The accounting standard for stock-based compensation requires that the Company recognize compensation expense for only the portion of options that vest. The Company recognizes stock option forfeitures resulting from award terminations in the period in which the forfeiture occurs.

Restricted Stock Units ("RSUs")

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 did not award any RSUs during the year ended December 31, 2018. During the year ended December 31, 2017, the Company awarded a total of 25,337 RSUs to its non-employee directors in lieu of cash compensation for their services. These RSUs vested upon issuance resulting in immediate recognition of stock compensation expense for the fair value of the awards.

The Company will pay minimum required income tax withholding associated with RSUs for its employees. As the RSUs vest, the Company will withhold 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 years ended December 31, 2018 and December 31, 2017, the Company withheld vested shares with a fair value of $6 and $12 to pay for minimum tax withholding associated with RSU vesting.

A summary of RSU activity for the year ended December 31, 2018 is as follows:

	Number of RSUs	Weighted Average Remaining Contractual Life (years)
Outstanding at December 31, 2017	14,367	
Awarded	—	
Released	(7,104)	
Forfeited	(162)	
Outstanding at December 31, 2018	7,101	0.25
Weighted average remaining recognition period (years)	0.25	

11. LEASES

New Lease Accounting

Topic 842 is effective for annual reporting periods beginning after December 15, 2018 and for interim periods within those fiscal years. The Company adopted Topic 842 on January 1, 2019 and elected to apply the new lease accounting requirements to its financial statements beginning on January 1, 2017 (the earliest period presented in its comparative financial statements), using a modified retrospective approach. The new guidance also requires additional financial statement disclosures to enable users of financial statements to better assess the amount, timing, and uncertainty of cash flows arising from leases. Topic 842 replaced the previous lease accounting and reporting guidance of ASC Topic 840, *Leases*, ("ASC Topic 840") and requires lessees to reflect a right-of-use asset and a lease liability on their balance sheet for leases with terms of more than twelve months.

The Company adopted Topic 842, effective on January 1, 2019, and elected to apply the new lease requirements at the beginning of the earliest period presented. Application of Topic 842 to the accompanying financial statements for 2018 and 2017 resulted in it recording right-of-use assets of $4,766 and $5,443 and lease liabilities of $6,465 and $6,901 for real estate and equipment leases as of December 31, 2018 and 2017, respectively. The Company also eliminated $1,005 and $1,132 in lease incentive obligations from its balance sheet as of December 31, 2018 and 2017, respectively, as a result of the discontinuation of the previous guidance under ASC Topic 840. The impact of the application of the new pronouncement to the Company's statement of operations for the years ended December 31, 2018 and 2017 was immaterial.

Under Topic 842, leases are classified as either operating or finance leases, with classification based on criteria similar to previous lease accounting guidance, but without the explicit quantitative determining factors used to establish a lease as either a capital or an operating lease. The Company reviewed its 2017 and 2018 transitional leases and its currently active leases falling within the scope of Topic 842 and determined that all of these leases met the criteria for classification as operating leases.

Lease liabilities are recorded as of their commencement date and are calculated as the present value of the remaining lease payments, using the interest rate implicit in the lease, or if that rate is not readily determinable, using the lessee's incremental borrowing rate. Right-of-use assets are equal to the lease liability with adjustments made, as necessary, for lease prepayments, lease accruals, initial direct costs, lessor lease incentives and any lease impairments that may be present. Topic 842 further requires that lease expense for operating leases be calculated on a straight-line basis and reported as a single operating expense within income from operations.

Topic 842 provides a number of transitional practical expedients designed to assist lessees with initial implementation. The Company made the following elections in applying Topic 842.

- *Short-term lease exception.* Active leases as of January 1, 2017, and new leases entered into thereafter with terms of twelve months or less were and will be excluded from accounting under Topic 842.
- *Package of practical expedients.* These expedients, which must be elected in their entirety, permit a company to continue its historical accounting during the transition period for contractual arrangements containing embedded leases in lieu of performing a re-evaluation of the agreements in order to separate lease and non-lease components. The package of expedients also permit a company to maintain its previous accounting classification for transitional leases as either operating or finance leases without reassessment under the new guidance. Lastly, the package of practical expedients does not require reassessment and capitalization of initial direct costs incurred to establish a lease.

In applying the guidance of Topic 842 to the 2018 and 2017 transition years, the Company did not elect the available hindsight expedient with respect to the determination of lease terms used in the calculation of lease liabilities and right-of-use assets by considering the actual outcome of lease renewals.

Maturity Analysis of Lease Liabilities

At December 31, 2018, the Company's lease liabilities will mature as follows:

Year ended December 31,	**Undiscounted Cash Flows**
2019	$ 1,255
2020	1,080
2021	939
2022	969
2023	998
Thereafter	3,082
Total undiscounted future lease payments	8,323
Discount	(1,858)
Total lease liabilities	$ 6,465
Short-term lease liabilities	$ 844
Long-term lease liabilities	$ 5,621

At December 31, 2018, real estate and equipment leases represent approximately 99% and 1%, of the Company's lease liabilities, respectively.

Quantitative Disclosure of Lease Costs (unaudited)

	Year ended December 31,	
	2018	**2017**
Lease cost:		
Operating lease cost	$ 1,319	$ 1,064
Short-term lease cost	484	430
Sublease income	(474)	(440)
Total lease cost, net	$ 1,329	$ 1,054

Other information as of:	December 31, 2018	December 31, 2017
Weighted-average remaining lease term (years)	7.4	8.4
Weighted-average discount rate	6.75%	6.75%

Real Estate Leases

During 2016, the Company entered into a lease agreement for its headquarters, 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 lease agreement does not include any options for the early termination or the extension of the lease. 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 throughout 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. Upon the adoption of Topic 842, these improvements were recorded as a reduction in the valulation of the right-of-use asset.

In October 2016, the Company entered into a sublease agreement with a subsidiary of CJ CheilJedang Corporation ("CJ") with respect to CJ's 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. The sublease is coterminous with the Company's master lease, and CJ will pay 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. Future CJ sublease payments have not been presented as an offset to total undiscounted future lease payments of $8,323 shown in the lease maturity analysis table above. CJ 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, as amended, expires in May 2020. The terms of the agreement provide the Company with a five-year option to extend the lease provided written notice is given prior to August 31, 2019. The Company does not intend to elect this option. During July 2018, the Company discontinued further use of the Lowell space, and as a result, the Company recorded a non-cash lease exit charge of $255 for the facility in accordance with ASC Topic 420-10, *Exit or Disposal Obligations*. The exit charge was recorded as an increase in the Company's lease expense and a reduction to the associated right-of-use asset. The Company will continue to make monthly rental payments for the Lowell facility through its expiration in May 2020.

The Company's wholly-owned subsidiary, Metabolix Oilseeds, Inc. ("MOI"), located in Saskatoon, Saskatchewan, Canada, leases approximately 6,200 square feet of office, laboratory and greenhouse space located within Innovation Place at 410 Downey Road and within the research facility of National Research Council Canada located at 110 Gymnasium Place. None of the leases contain renewal or early termination options. MOI's leases for these facilities expire on various dates through May 2020.

12. Income Taxes

Tax Cuts and Jobs Act

In December 2017, the Tax Cuts and Jobs Act, or the Tax Act ("TCJA"), was signed into law. Among other things, the Tax Act permanently lowered the corporate federal income tax rate to 21% from the existing maximum rate of 35%, effective for tax years including or commencing January 1, 2018. As a result of the reduction of the corporate federal income tax rate GAAP required companies to revalue their deferred tax assets and deferred tax liabilities as of the date of enactment, with the resulting tax effects accounted for in the reporting period of enactment. For the year ending December 31, 2017, this revaluation resulted in a provision of $10,609 to income tax expense in continuing operations and a corresponding reduction the Company's valuation allowance. There was no impact, therefore, to the Company's income statement for the year ended December 31, 2017 as a result of the reduction in federal income tax rates. During 2018 the Company completed its review of

new tax regulations issued under TCJA and finalized adjustments related to its deferred tax assets and liabilities that resulted from changes in the tax law.

Income Taxes and Deferred Tax Assets and Liabilities

The components of loss from operations before provision for income taxes consist of the following:

	Year Ended December 31,	
	2018	2017
Domestic	$ (12,273)	$ (9,523)
Foreign	3,103	126
Loss before taxes	$ (9,170)	$ (9,397)

Significant components of the Company's net deferred tax assets are as follows:

	Year Ended December 31,	
	2018	2017
Deferred Tax Assets:		
Net operating loss carryforward	$ 24,261	$ 20,490
Capitalization of research and development expense	1,385	1,606
Credit carryforwards	2,664	2,493
Depreciation	—	990
Stock compensation	966	1,035
Other temporary differences	695	794
Total deferred tax assets.	29,971	27,408
Valuation allowance	(29,672)	(27,408)
Net deferred tax assets	299	—
Deferred Tax Liabilities:		
Depreciation	(299)	—
Net deferred taxes	$ —	$ —

Tax Rate

The items accounting for the difference between the income tax computed at the federal statutory rate of 21% and the provision for income taxes were as follows:

	Year Ended December 31,	
	2018	2017
Federal income tax at statutory federal rate	21.0 %	34.0 %
State taxes	8.0 %	4.9 %
Permanent differences	(0.1)%	(2.3)%
Tax credits	3.1 %	3.7 %
Federal rate change under tax reform	0.0 %	(112.9)%
State rate change on deferred balances	0.0 %	0.1 %
Stock compensation	(3.6)%	(12.7)%
Other	0.6 %	1.2 %
Change in valuation allowance	(25.2)%	84.0 %
German subsidiary dissolution	(3.8)%	0.0 %
Total	0.0 %	0.0 %

Tax Attributes

At December 31, 2018, the Company had U.S. net operating loss carryforwards (NOLs) for federal and state income tax purposes of approximately $89,971 and $84,918, respectively. The Company's existing federal and state operating loss carryforwards will begin to expire on various dates through 2038. Included in the $89,971 of federal net operating losses are losses of $12,162 that will carry forward indefinitely as a result of new regulations issued under TCJA. The Company also had available research and development and investment tax credits for federal and state income tax purposes of approximately $1,382 and $846, respectively. These federal and state research and development credits will begin to expire on various dates through 2038. In Canada, the Company has cumulative research tax credits totaling $614 that may be carried forward up to twenty years from the year earned. These credits will begin to expire in 2032 if not used. Management of the Company has evaluated the positive and negative evidence bearing upon the realizability of its deferred tax assets, which are comprised principally of net operating loss carryforwards and research and development credits. Under the applicable accounting standards, management has considered the Company's history of losses and concluded that it is more likely than not that the Company will not recognize the benefits of federal and state deferred tax assets. Accordingly, a full valuation allowance has been established against the deferred tax assets.

Utilization of the net operating loss and research and development credit carryforwards may be subject to a substantial annual limitation under Section 382 of the Internal Revenue Code of 1986 due to ownership change limitations that have occurred previously or that could occur in the future. These ownership changes may limit the amount of net operating loss and research and development credit carryforwards that can be utilized annually to offset future taxable income and tax, respectively. The Company completed an evaluation of its ownership changes through December 31, 2015 and determined that an ownership change occurred on August 22, 2014 in connection with an equity offering. As a consequence of this ownership change, the Company's NOLs, tax credit carryforwards and other tax deductions allocable to the tax periods preceding the ownership change became subject to limitation under Section 382. The Company has reduced its associated deferred tax assets accordingly. The Company has not yet completed an evaluation of ownership changes for the years 2016 through 2018. To the extent an ownership change occurs in the future, the net operating loss, credit carryforwards and other deferred tax assets may be subject to further limitations.

Other

During the year ended December 31, 2018, the Company decided to dissolve its wholly-owned German subsidiary, Metabolix GmbH, that has been inactive since 2014. As a result of this decision, the Company has written off the German

deferred tax assets and related full valuation allowance resulting in no impact to the tax provision. The majority of the deferred tax asset value related to net operating loss carryforwards.

The tax years 2014 through 2017 remain open to examination by major taxing jurisdictions to which the Company is subject, which are primarily in the U.S. The statute of limitations for net operating losses utilized in future years will remain open beginning in the year of utilization.

The Company's policy is to record estimated interest and penalties related to uncertain tax positions as income tax expense. As of December 31, 2018 and 2017, the Company had no accrued interest or penalties recorded related to uncertain tax positions.

No additional provision has been made for U.S. income taxes related to the undistributed earnings of the wholly-owned subsidiaries of Yield10 Bioscience, Inc. or for unrecognized deferred tax liabilities for temporary differences related to investments in subsidiaries as the amounts are not significant. As such, earnings are expected to be permanently reinvested, the investments are essentially permanent in duration, or the Company has concluded that no additional tax liability will arise as a result of the distribution of such earnings. A liability could arise if amounts are distributed by such subsidiaries or if such subsidiaries are ultimately disposed. It is not practical to estimate the additional income taxes related to permanently reinvested earnings or the basis differences related to investment in subsidiaries. Unremitted earnings at December 31, 2018 and December 31, 2017 approximated $491 and $482, respectively.

13. Employee Benefits

The Company maintains a 401(k) savings plan in which substantially all of its regular U.S. employees are eligible to participate. Participants may contribute up to 60% of their annual compensation to the plan, subject to eligibility requirements and annual IRS limitations. The Company's plan provides for a matching contribution in common stock of up to 4.5% of a participant's total compensation dependent upon the level of participant contributions made during the plan year. Pursuant to this plan, the Company issued 65,594, and 22,493 shares of common stock during the years ended December 31, 2018, and December 31, 2017, respectively, and recorded $102, and $85, respectively, of related expense. Company contributions are fully vested upon issuance.

14. U.S. Department of Energy Grants

On April 17, 2018 the Company entered into a sub-award with Michigan State University ("MSU") to support a Department of Energy funded grant entitled "*A Systems Approach to Increasing Carbon Flux to Seed Oil*." The Company's participation under this grant commenced on September 15, 2017 and as of December 31, 2018, the first two years of the sub-award totaling $1,212 have been authorized. The Company anticipates that additional option years will be awarded annually to Yield10 through September 14, 2022 for total sub-award funding of $2,957, provided the U.S. Congress continues to appropriate funds for the program, the Company is able to make progress towards meeting grant objectives and it remains in compliance with other terms and conditions of the sub-award. During the years ended December 31, 2018 and December 31, 2017, the Company recognized $419 and $0, respectively, in revenue related to this sub-award.

In 2015, the Company entered into a multi-year $1,997 grant agreement entitled, *Production of High Oil, Transgene Free Camelina Sativa Plants through Genome Editing*, with the U.S. Department of Energy for the development of Camelina sativa feedstock. The Company is used the funds to perform research to increase oil content and/or seed yield to maximize oil yields per acre. The Company recognized revenue from the grant over the term of the agreement as it incurred related research and development costs and it met its prorated cost-sharing obligation of approximately $500. During the years ended December 31, 2018 and December 31, 2017, the Company recognized $137 and $913, respectively, in revenue related to this grant. The grant ended September 30, 2018 and all revenue under the grant has been recognized.

15. Restructuring

During 2016, the Company initiated 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 significantly reduced staffing levels and in January 2017, the Company formally changed its name to Yield10 Bioscience, Inc.

In connection with the wind down of its biopolymer operations, the Company ceased pilot production of biopolymer materials and reached agreements with the owner-operators of its biopolymer production facilities regarding the termination of their services. Through May 2018, the Company made cash payments of $3,317, 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 fully settle these agreements and other restructuring activities. No further restructuring obligations remain outstanding at December 31, 2018.

16. Geographic Information

The geographic distribution of the Company's revenues and long-lived assets from continuing operations is summarized as follows:

	U.S.	Canada	Eliminations	Total
Year Ended December 31, 2018				
Net revenues to unaffiliated customers	$ 556	$ —	$ —	$ 556
Inter-geographic revenues	—	1,418	(1,418)	—
Net revenues	$ 556	$ 1,418	$ (1,418)	$ 556
Identifiable long-lived assets	$ 1,372	$ 13	$ —	$ 1,385
Year Ended December 31, 2017				
Net revenues to unaffiliated customers	$ 944	$ —	$ —	$ 944
Inter-geographic revenues	—	1,154	(1,154)	—
Net revenues	$ 944	$ 1,154	$ (1,154)	$ 944
Identifiable long-lived assets	$ 1,533	$ 6	$ —	$ 1,539

Foreign revenue is based on the country in which the Company's subsidiary that earned the revenue is domiciled. During 2018, grant revenue earned from the Company's now completed Camelina grant with the Department of Energy and with the new Michigan State University sub-award totaled $137 and $419, or 100% of the Company's total revenue.

17. Subsequent Event

On March 18, 2019, the Company completed a registered direct offering of its securities. Proceeds from the transaction were approximately $2,607, net of issuance costs of $323. Investors participating in the transaction purchased a total of 2,421,662 shares of common stock at a price of $1.21 per share.