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**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

**FORM 10-Q**

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

For the quarterly period ended March 31, 2021

OR

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

For the transition period from                      to

Commission file number 001-33133

**YIELD10 BIOSCIENCE, INC.**

**Delaware**

(State or other jurisdiction of  
incorporation or organization)

**19 Presidential Way  
Woburn, MA**

(Address of principal executive offices)

**04-3158289**

(I.R.S. Employer  
Identification No.)

**01801**

(Zip Code)

**(617) 583-1700**

(Registrant's telephone number, including area code)

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

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes  No

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

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
Emerging growth company	<input type="checkbox"/>		

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.

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

The number of shares outstanding of the registrant's common stock as of May 7, 2021 was 4,868,466.

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**Yield10 Bioscience, Inc.**  
**Form 10-Q**  
**For the Quarter Ended March 31, 2021**

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**PART I. FINANCIAL INFORMATION**

**ITEM 1. CONDENSED CONSOLIDATED FINANCIAL STATEMENTS**

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

(in thousands, except share and per share data)

	March 31, 2021	December 31, 2020
<b>Assets</b>		
Current Assets:		
Cash and cash equivalents	\$ 18,582	\$ 3,423
Short-term investments	3,262	6,279
Accounts receivable	39	86
Unbilled receivables	120	27
Prepaid expenses and other current assets	527	527
Total current assets	22,530	10,342
Long-term investments	886	—
Restricted cash	264	264
Property and equipment, net	968	921
Right-of-use assets	2,625	2,712
Other assets	295	283
Total assets	\$ 27,568	\$ 14,522
<b>Liabilities and Stockholders' Equity</b>		
Current Liabilities:		
Accounts payable	\$ 111	\$ 60
Accrued expenses	840	1,297
Lease liabilities	470	457
Total current liabilities	1,421	1,814
Lease liabilities, net of current portion	3,041	3,163
Other long-term liabilities	12	13
Total liabilities	4,474	4,990
Commitments and contingencies (Note 9)		
Stockholders' Equity:		
Preferred stock (\$0.01 par value per share); 5,000,000 shares authorized; no shares issued or outstanding	—	—
Common stock (\$0.01 par value per share); 60,000,000 shares authorized at March 31, 2021 and December 31, 2020; 4,865,335 and 3,334,048 shares issued and outstanding at March 31, 2021 and December 31, 2020, respectively	49	33
Additional paid-in capital	400,865	384,758
Accumulated other comprehensive loss	(159)	(159)
Accumulated deficit	(377,661)	(375,100)
Total stockholders' equity	23,094	9,532
Total liabilities and stockholders' equity	\$ 27,568	\$ 14,522

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

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

	Three Months Ended March 31,	
	2021	2020
<b>Revenue:</b>		
Grant revenue	\$ 196	\$ 179
Total revenue	196	179
<b>Expenses:</b>		
Research and development	1,316	1,460
General and administrative	1,432	1,387
Total expenses	2,748	2,847
Loss from operations	(2,552)	(2,668)
<b>Other income (expense):</b>		
Change in fair value of warrants	—	(957)
Other income (expense), net	(1)	33
Total other income (expense)	(1)	(924)
Net loss from operations before income taxes	(2,553)	(3,592)
Income tax provision	(8)	(8)
Net loss	\$ (2,561)	\$ (3,600)
Basic and diluted net loss per share	\$ (0.60)	\$ (2.12)
<b>Number of shares used in per share calculations:</b>		
Basic and diluted	4,296,129	1,697,125

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

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

	<b>Three Months Ended March 31,</b>	
	<b>2021</b>	<b>2020</b>
Net loss:	\$ (2,561)	\$ (3,600)
Other comprehensive loss		
Change in unrealized gain on investments	1	22
Change in foreign currency translation adjustment	(1)	(55)
Total other comprehensive loss	—	(33)
Comprehensive loss	\$ (2,561)	\$ (3,633)

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

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

	<b>Three Months Ended</b>	
	<b>March 31,</b>	
	<b>2021</b>	<b>2020</b>
<b>Cash flows from operating activities</b>		
Net loss	\$ (2,561)	\$ (3,600)
Adjustments to reconcile net loss to cash used in operating activities:		
Depreciation and amortization	54	48
Change in fair value of warrants	—	957
Loss on disposal of fixed assets	—	206
Charge for 401(k) company common stock match	44	42
Stock-based compensation	324	137
Non-cash lease expense	87	151
Deferred income tax provision	6	30
Changes in operating assets and liabilities:		
Accounts receivable	47	18
Unbilled receivables	(93)	(105)
Prepaid expenses and other assets	(6)	(69)
Accounts payable	51	(144)
Accrued expenses	(480)	259
Lease liabilities	(109)	(236)
Other liabilities	(1)	18
Net cash used for operating activities	(2,637)	(2,288)
<b>Cash flows from investing activities</b>		
Purchase of property and equipment	(101)	(42)
Proceeds from sale of property and equipment	—	10
Purchase of investments	(869)	(503)
Proceeds from the maturity of short-term investments	3,000	750
Net cash provided by investing activities	2,030	215
<b>Cash flows from financing activities</b>		
Proceeds from warrants exercised (Note 11)	3,856	928
Proceeds from public offering, net of issuance costs	11,993	—
Taxes paid on employees' behalf related to vesting of stock awards	(83)	—
Net cash provided by financing activities	15,766	928
Effect of exchange rate changes on cash, cash equivalents and restricted cash	—	(55)
Net increase (decrease) in cash, cash equivalents and restricted cash	15,159	(1,200)
Cash, cash equivalents and restricted cash at beginning of period	3,687	5,749
Cash, cash equivalents and restricted cash at end of period	<u>\$ 18,846</u>	<u>\$ 4,549</u>

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

**YIELD10 BIOSCIENCE, INC.**  
**CONDENSED CONSOLIDATED STATEMENTS OF SERIES B CONVERTIBLE STOCK AND STOCKHOLDERS' EQUITY**  
**UNAUDITED**  
(In thousands, except share amounts)

Three Months Ended March 31, 2021

	Series B Convertible Preferred Stock		Series A Convertible Preferred Stock		Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Par Value	Shares	Par Value	Shares	Par Value				
<b>Balance, December 31, 2020</b>	—	\$ —	—	\$ —	3,334,048	\$ 33	\$ 384,758	\$ (159)	\$ (375,100)	\$ 9,532
Non-cash stock-based compensation expense	—	—	—	—	—	—	335	—	—	335
Issuance of common stock for 401(k) match	—	—	—	—	3,759	—	22	—	—	22
Issuance of common stock for warrant exercise (Note 11)	—	—	—	—	481,973	5	3,851	—	—	3,856
Issuance of common stock for restricted stock units	—	—	—	—	5,555	—	—	—	—	—
Taxes paid on employees' behalf related to vesting of stock awards	—	—	—	—	—	—	(83)	—	—	(83)
Issuance of common stock in connection with stock offering, net of offering costs	—	—	—	—	1,040,000	11	11,982	—	—	11,993
Net loss	—	—	—	—	—	—	—	—	(2,561)	(2,561)
<b>Balance, March 31, 2021</b>	—	\$ —	—	\$ —	4,865,335	\$ 49	\$ 400,865	\$ (159)	\$ (377,661)	\$ 23,094

Three Months Ended March 31, 2020

	Series B Convertible Preferred Stock		Series A Convertible Preferred Stock		Common Stock		Additional Paid-In Capital	Accumulated other Comprehensive Loss	Accumulated Deficit	Total Stockholders' Equity
	Shares	Par Value	Shares	Par Value	Shares	Par Value				
<b>Balance, December 31, 2019</b>	5,750	\$ —	796	\$ —	933,423	\$ 9	\$ 360,926	\$ (126)	\$ (364,894)	\$ (4,085)
Non-cash stock-based compensation expense	—	—	—	—	—	—	160	—	—	160
Issuance of common stock for 401(k) match	—	—	—	—	3,715	—	25	—	—	25
Issuance of common stock for warrant exercise	—	—	—	—	204,796	2	926	—	—	928
Issuance of common stock upon conversion of Series A Convertible Preferred Stock	—	—	(500)	—	62,500	1	(1)	—	—	—
Issuance of common stock upon conversion of Series B Convertible Preferred Stock	(5,750)	—	—	—	718,750	7	(7)	—	—	—
Reclassification of warrant liability to equity	—	—	—	—	—	—	15,934	—	—	15,934
Effect of foreign currency translation and unrealized loss on investments	—	—	—	—	—	—	—	(33)	—	(33)
Net loss	—	—	—	—	—	—	—	—	(3,600)	(3,600)
<b>Balance, March 31, 2020</b>	<u>—</u>	<u>\$ —</u>	<u>296</u>	<u>\$ —</u>	<u>1,923,184</u>	<u>\$ 19</u>	<u>\$ 377,963</u>	<u>\$ (159)</u>	<u>\$ (368,494)</u>	<u>\$ 9,329</u>

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

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

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

**1. NATURE OF BUSINESS AND BASIS OF PRESENTATION**

Yield10 Bioscience, Inc. ("Yield10" or the "Company") is an agricultural bioscience company that is using its differentiated trait gene discovery platform, the "Trait Factory", to develop improved Camelina varieties to produce proprietary products, and to produce other high value genetic traits for the agriculture and food industries. Yield10 is headquartered in Woburn, Massachusetts and has an Oilseed Center of Excellence in Saskatoon, Saskatchewan, Canada. The Company's goals are to efficiently develop and commercialize a high value crop products business by developing superior varieties of Camelina for the production of feedstock oils, nutritional oils, and PHA bioplastics, and to license its yield traits to major seed companies for commercialization in major row crops, including corn, soybean and canola.

The accompanying condensed consolidated financial statements are presented in U.S. dollars, are unaudited, and have been prepared by Yield10 in accordance with accounting principles generally accepted in the United States of America ("GAAP") and pursuant to the rules and regulations of the U.S. Securities and Exchange Commission ("SEC"). Certain information and footnote disclosures normally included in the Company's annual consolidated financial statements have been condensed or omitted. The year-end condensed consolidated balance sheet data was derived from audited financial statements but does not include all disclosures required by GAAP. The condensed consolidated financial statements, in the opinion of management, reflect all adjustments (consisting only of normal recurring adjustments) necessary for fair statements of the financial position and results of operations for the interim periods ended March 31, 2021 and March 31, 2020.

The results of operations for the interim periods are not necessarily indicative of the results of operations to be expected for any future period or the entire fiscal year. These interim unaudited condensed consolidated financial statements should be read in conjunction with the audited consolidated financial statements for the year ended December 31, 2020, which are contained in the Company's [Annual Report on Form 10-K](#) filed with the SEC on March 16, 2021.

The accompanying condensed consolidated financial statements have been prepared on a basis which assumes that the Company will continue as a going concern and which contemplates the realization of assets and satisfaction of liabilities and commitments in the normal course of business. With the exception of a single year, the Company has recorded losses since its initial founding, including the three months ended March 31, 2021.

As of March 31, 2021, the Company held unrestricted cash, cash equivalents and investments of \$22,730. 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, management expects that the Company's present capital resources will be sufficient to fund its planned operations for at least that period of time. 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 may be forced to curtail the Company's research efforts, explore strategic alternatives and/or wind down its operations and pursue options for liquidating its remaining assets, including intellectual property.

If the Company issues equity or debt securities to raise additional funds in the future, (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 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.

The full impact of the COVID-19 pandemic continues to evolve as of the date of this report. As such, the full magnitude that the pandemic will have on the Company's financial condition, liquidity and future results of operations is uncertain. While management currently expects the impact of COVID-19 to be temporary, there is uncertainty around the duration and its broader impact on the economy and therefore the effects it will have on Yield10's financial condition, liquidity, operations, suppliers, industry, and workforce. Given the evolving nature of the COVID-19 pandemic and the global responses to it, the Company is not able to estimate the effects of the COVID-19 pandemic on its results of operations, financial condition, or liquidity for future periods.

## 2. ACCOUNTING POLICIES

### Principles of Consolidation

The Company's unaudited condensed consolidated financial statements are prepared in accordance with accounting principles generally accepted in the United States of America. The unaudited condensed consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries. All intercompany transactions were eliminated, including transactions with its subsidiaries, Metabolix Oilseeds, Inc. and Yield10 Bioscience Securities Corp.

### Reverse Stock Split

On January 15, 2020, the Company effected a 1-for-40 reverse stock split of its common stock. Unless otherwise indicated, all share amounts, per share data, share prices, and conversion rates set forth in these notes and the accompanying unaudited condensed financial statements have, where applicable, been adjusted retroactively to reflect this reverse stock split.

### 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 Unaudited Condensed Consolidated Balance Sheets included herein:

	<b>March 31, 2021</b>	<b>December 31, 2020</b>
Cash and cash equivalents	\$ 18,582	\$ 3,423
Restricted cash	264	264
<b>Total cash, cash equivalents and restricted cash</b>	<b>\$ 18,846</b>	<b>\$ 3,687</b>

Amounts included in restricted cash represent those required to be set aside by contractual agreement. Restricted cash of \$264 at March 31, 2021 and December 31, 2020 consists primarily of funds held in connection with the Company's lease agreement for its Woburn, Massachusetts facility.

### Investments

The Company classifies investments purchased with an original maturity date of more than ninety days at the date of purchase and a maturity date of one year or less at the balance sheet date to be short-term investments. The Company classifies investments with a maturity date of greater than one year from the balance sheet date as long-term investments.

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.

### Use of Estimates

The preparation of financial statements in conformity with 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 grant revenue and expenses during the reporting periods. Actual results could differ from those estimates.

## Foreign Currency Translation

The functional currency for Metabolix Oilseeds, Inc. is the Canadian dollar. Foreign denominated assets and liabilities of Metabolix Oilseeds 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 all or substantially 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 Loss

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

## 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 deferred tax assets to a level which, more likely than not, will be realized.

The Company accounts for uncertain tax positions using a "more-likely-than-not" threshold for recognizing and resolving uncertain tax positions. The evaluation of uncertain tax positions is based on factors 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.

## Concentration of Credit Risk

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

At March 31, 2021 and December 31, 2020, 100% of the Company's accounts and unbilled receivables are due from the U.S. and Canadian government grants. During the three months ended March 31, 2021, revenue earned from the Company's Michigan State University ("MSU") sub-award and from its research grant funded through the National Research Council Canada, represented 80.3% and 19.7% of recognized government grant revenue, respectively. During the three months ended March 31, 2020, the MSU sub-award represented 100.0%, of government grant revenue earned for the period.

## Fair Value Measurements

The carrying amounts of the Company's financial instruments as of March 31, 2021 and December 31, 2020, 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 5 for further discussion on fair value measurements.

## Segment Information

The accounting guidance for segment reporting establishes standards for reporting information on operating segments in financial statements. The Company is an agricultural bioscience company operating in one segment, which is the development of improved Camelina varieties to produce proprietary products, and to produce other high value genetic traits for the agriculture and food industries. 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.

## Property and Equipment

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

<b>Asset Description</b>	<b>Estimated Useful Life (years)</b>
Equipment	3
Furniture and fixtures	5
Software	3
Leasehold improvements	Shorter of useful life or term of lease

## Right-of-Use Assets

The Company's right-of-use assets consist of leased assets recognized in accordance with ASC 842, *Leases*, ("ASC 842") which requires lessees to recognize a lease liability and a corresponding right-of-use asset for long-term lease contracts. Right-of-use assets represent the Company's right to use an underlying asset for the lease term and lease liabilities represent its obligation to make lease payments arising from the lease, both of which are recognized based on the present value of the future minimum lease payments over the lease term at the commencement date. The Company uses its incremental borrowing rate in calculating the present value of future lease payments when interest rates are not implicit in the lease. Leases with terms of 12 months or less at inception are expensed as costs are incurred and not capitalized under ASC 842.

## 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 a 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 unaudited condensed consolidated balance sheets at March 31, 2021 and December 31, 2020. Funds received from government grants in advance of work being performed, if any, 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, crop trials, facility related expenses, depreciation, and stock-based compensation. Costs incurred in connection with government research grants are recorded as research and development expense.

## 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, stock-based compensation 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 Company's unaudited condensed 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 expenses 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 7 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.

## Recent Accounting Standards

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. During the three months ended March 31, 2021, the Company did not adopt any new accounting guidance.

The following new pronouncement is not yet effective but may impact the Company's financial statements in the future.

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*. The FASB subsequently issued amendments to ASU 2016-13, which have the same effective date and transition date as the initial pronouncement. This standard requires entities to estimate an expected lifetime credit loss on financial assets ranging from short-term trade accounts receivable to long-term financings and report credit losses using an expected losses model rather than the incurred losses model that was previously used, and establishes additional disclosures related to credit risks. For available-for-sale debt securities with unrealized losses, this standard now requires allowances to be recorded instead of reducing the amortized cost of the investment. This standard limits the amount of credit losses to be recognized for available-for-sale debt securities to the amount by which carrying value exceeds fair value and requires the reversal of previously recognized credit losses if fair value increases. The guidance is effective for fiscal years beginning after December 15, 2022 for SEC filers that are eligible to be smaller reporting companies under the SEC's definition, and interim periods within those fiscal years. The Company is currently evaluating the impact this guidance will have on its unaudited condensed consolidated financial statements.

## 3. BASIC AND DILUTED NET INCOME (LOSS) PER SHARE

Basic net income (loss) per share is computed by dividing net income (loss) by the weighted-average number of common shares outstanding. Diluted net income (loss) per share is computed by dividing net income (loss) by the weighted-average number of dilutive common shares outstanding during the period. Diluted shares outstanding is calculated by adding to the weighted shares outstanding any potential (unissued) shares of common stock from outstanding stock options and warrants based on the treasury stock method, as well as weighted shares outstanding of any potential (unissued) shares of common stock from restricted stock units and the conversion of convertible preferred stock. In periods when a net loss is reported, all common stock equivalents are excluded from the calculation because they would have an anti-dilutive effect, meaning the loss per share would be reduced. Therefore, in periods when a loss is reported, basic and dilutive loss per share are the same. Common stock equivalents include stock options, restricted stock awards, convertible preferred stock and warrants.

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 three months ended March 31, 2021 and March 31, 2020, respectively, are shown below. Issued and outstanding warrants and more detailed information related to the Company's convertible preferred stock shown in the table below are described in greater detail in Note 11, contained herein.

	Three Months Ended March 31,	
	2021	2020
Options	156,035	68,032
Restricted Stock Awards	10,369	9,341
Series A Convertible Preferred Stock	—	39,060
Series B Convertible Preferred Stock	—	126,374
Warrants	175,995	2,846,199
Total	342,399	3,089,006

#### 4. INVESTMENTS

Investments consist of the following at March 31, 2021 and December 31, 2020:

	Accumulated Cost at March 31, 2021	Unrealized		Market Value at March 31, 2021
		Gain	(Loss)	
Short-term investments				
U.S. government and agency securities	\$ 3,261	\$ 1	\$ —	\$ 3,262
Long-term investments				
U.S. government and agency securities	\$ 886	\$ —	\$ —	\$ 886
Total	<u>\$ 4,147</u>	<u>\$ 1</u>	<u>\$ —</u>	<u>\$ 4,148</u>

	Accumulated Cost at December 31, 2020	Unrealized		Market Value at December 31, 2020
		Gain	(Loss)	
Short-term investments				
U.S. government and agency securities	\$ 6,279	\$ —	\$ —	\$ 6,279
Total	<u>\$ 6,279</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 6,279</u>

All investments are classified as available for sale as of March 31, 2021 and December 31, 2020. The Company held no long-term investments at December 31, 2020.

#### 5. FAIR VALUE MEASUREMENTS

The Company has certain financial assets recorded at fair value which have been classified as Level 1 and Level 2 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 March 31, 2021 and December 31, 2020 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 March 31, 2021 and December 31, 2020.

The tables below present information about the Company's assets and liabilities that are measured at fair value on a recurring basis as of March 31, 2021 and December 31, 2020 and indicate the fair value hierarchy of the valuation techniques utilized to determine such fair value.

Description	Fair value measurements at reporting date using			Balance as of March 31, 2021
	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	
<b>Assets</b>				
Cash equivalents:				
Money market funds	\$ 17,900	\$ —	\$ —	\$ 17,900
Short-term investments:				
U.S. government and agency securities	—	3,262	—	3,262
Long-term investments:				
U.S. government and agency securities	—	886	—	886
Total assets	\$ 17,900	\$ 4,148	\$ —	\$ 22,048

Description	Fair value measurements at reporting date using			Balance as of December 31, 2020
	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	
<b>Assets</b>				
Cash equivalents:				
Money market funds	\$ 2,873	\$ —	\$ —	\$ 2,873
Short-term investments:				
U.S. government and agency securities	—	6,279	—	6,279
Total assets	\$ 2,873	\$ 6,279	\$ —	\$ 9,152

There were no transfers of financial assets or liabilities between category levels during the three months ended March 31, 2021 and the three months ended March 31, 2020.

During November 2019, the Company issued Series A Warrants and Series B Warrants in two concurrent securities offerings that were considered free standing financial instruments, that were legally detachable and separately exercisable from the common and preferred stock issued in the two offerings. The Company determined that all of the Series A Warrants and Series B Warrants should be classified as a warrant liability in accordance with ASC 480, *Distinguishing Liabilities from Equity*, and recognized at their inception date fair value due to the insufficiency of common shares available to permit their exercise. The warrant liability met Level 3 classification criteria for classification within the fair value hierarchy. On January 15, 2020, the Company filed an amendment to its Certificate of Incorporation with the State of Delaware to effect a 1-for-40 reverse stock split. As a result of the reverse stock split, the Company's number of authorized but unissued shares of Common Stock increased significantly and the Series A Warrants and Series B Warrants became eligible for exercise. Prior to reclassification as equity, on January 15, 2020, the Company adjusted the warrant liability to its then \$15,934 fair value using the Black-Scholes valuation model, recording a loss on the adjustment to fair value of \$957.

The following table shows a reconciliation of the beginning and ending balances for the Level 3 warrant liability for the three months ending March 31, 2020.

	<b>Three Months Ended March 31, 2020</b>
Warrant liability, December 31, 2019	\$ 14,977
Recognized loss from mark-to-market adjustment prior to reclassification of warrant liability to equity	957
Reclassification from warrant liability to equity	(15,934)
Warrant liability, March 31, 2020	\$ —

The Company owns 648,149 shares of Series A Redeemable Convertible Preferred Stock of Tephra, Inc. ("Tephra"), a privately held medical device company located in Lexington, Massachusetts, that is engaged in the development of medical device products that restore, maintain, or improve tissue function. The Company received the preferred shares from Tephra

during 2002 in connection with a technology sublicense agreement that was later terminated during 2016. The preferred shares owned by the Company represent less than one percent of Tepha's current outstanding common shares on a fully diluted basis and were fully written off through an impairment charge during 2005 prior to Tepha initiating commercial product sales.

## 6. ACCRUED EXPENSES

Accrued expenses consisted of the following at:

	March 31, 2021	December 31, 2020
Employee compensation and benefits	\$ 330	\$ 620
Leased facilities	63	188
Professional services	249	235
Other	198	254
Total accrued expenses	<u>\$ 840</u>	<u>\$ 1,297</u>

## 7. STOCK-BASED COMPENSATION

### *Expense Information for Employee and Non-Employee Stock Awards*

The Company recognized stock-based compensation expense related to stock awards, including awards to non-employees and members of the Board of Directors of \$324 and \$137 for the three months ended March 31, 2021 and three months ended March 31, 2020, respectively. At March 31, 2021, there was approximately \$3,860 of pre-tax stock-based compensation expense related to unvested awards not yet recognized.

The compensation expense related to unvested stock awards is expected to be recognized over a remaining weighted average period of 3.19 years.

### *Stock Options*

A summary of option activity for the three months ended March 31, 2021 is as follows:

	Number of Shares	Weighted Average Exercise Price
Outstanding at December 31, 2020	339,108	\$ 32.39
Granted	131,343	\$ 16.46
Exercised	—	\$ —
Forfeited	—	\$ —
Expired	(11)	\$ 21,888.00
Outstanding at March 31, 2021	<u>470,440</u>	\$ 27.43
Options exercisable at March 31, 2021	107,034	\$ 80.78

In accordance with the terms of the 2018 Stock Option and Incentive Plan ("2018 Stock Plan"), effective January 1, 2021, the Company's Board of Directors approved the addition of 166,702 shares to the 2018 Stock Plan, which was 5% of the Company's outstanding common stock on the day prior to the increase.

### *Restricted Stock Units*

The Company records stock compensation expense for restricted stock units ("RSUs") on a straight-line basis over their requisite service period, which approximates the vesting period, based on each RSU's award date market value. As RSUs vest, the Company withholds a number of shares from its employees with an aggregate fair market value equal to the minimum tax withholding amount from the common stock issuable at the vest date. During the three months ended March 31, 2021, 8,500 employee RSUs vested, of which 2,945 common shares with a total market value of \$67 were withheld to pay employee tax withholding.

A summary of RSU activity for the three months ended March 31, 2021 is as follows:

	Number of RSUs	Weighted Average Remaining Contractual Life (years)
Outstanding at December 31, 2020	8,500	
Awarded	18,862	
Common stock issued upon vesting	(8,500)	
Forfeited	—	
Outstanding at March 31, 2021	<u>18,862</u>	0.67

## 8. LEASES

### *Lease Accounting*

As a lessee, the Company follows the lease accounting guidance codified in ASC 842. Under ASC 842, a lease is classified as a finance lease if any of five criteria described in the guidance apply to the lease. Any lease not classified as a finance lease is classified as an operating lease with expense recognition occurring on a straight-line basis over the term of the lease. The Company's existing lease subject to ASC 842 meets the standards for operating lease classification.

Under ASC 842, a lease liability is recorded on the commencement date of a lease and is 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. A right-of-use asset equal to the lease liability is also recorded with adjustments made, as necessary, for lease prepayments, lease accruals, initial direct costs and lessor lease incentives that may be present within the terms of the lease. The Company adopted the short-term lease exception that permits lessees to omit leases with terms of twelve months or less from the accounting requirements of ASC 842.

### *Maturity Analysis of Lease Liabilities*

The Company's Woburn, Massachusetts facility is the only lease included in the Company's right-of-use assets and corresponding lease liabilities. No other active real estate or equipment leases fall within the scope of ASC 842. At March 31, 2021, the Company's lease liability related to its Woburn facility will mature as follows:

Year ended December 31,	Undiscounted Cash Flows
2021 (April to December)	\$ 531
2022	726
2023	749
2024	771
2025	793
Thereafter	747
Total undiscounted future lease payments	<u>4,317</u>
Amount of lease payments representing interest	(806)
Total lease liabilities	<u>\$ 3,511</u>
Short-term lease liability	\$ 470
Long-term lease liability	\$ 3,041

## Quantitative Disclosure of Lease Costs

	Three Months Ended March 31,	
	2021	2020
<b>Lease cost:</b>		
Operating lease cost	\$ 151	\$ 203
Short-term lease cost	156	183
Sublease income	(173)	(137)
Total lease cost, net	<u>\$ 134</u>	<u>\$ 249</u>
<b>Other information as of:</b>	<b>March 31, 2021</b>	<b>December 31, 2020</b>
Weighted-average remaining lease term (years)	5.7	5.9
Weighted-average discount rate	7.25%	7.25%

### Real Estate Leases

During 2016, the Company entered into a lease agreement, as amended, for its headquarters pursuant to which the Company leases 22,213 square feet of office and research and development space located at 19 Presidential Way, Woburn, Massachusetts. The lease agreement will terminate on November 30, 2026 and does not include options for an early termination or for an extension of the lease. Pursuant to the lease, the Company is required to pay certain pro rata taxes and operating costs associated with the premises throughout the term of the lease. During the initial buildout of the rented space, the landlord paid for certain tenant improvements that resulted in increased rental payments by the Company. Upon adopting ASC 842 these improvements were recorded as a reduction in the valuation of the associated right-of-use asset. The Company has provided the landlord with a security deposit of \$229.

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 CJ sublease is coterminous with the Company's master lease and CJ will pay rent and operating expenses proportionate to 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 \$4,317 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.

Through May 2020, the Company leased approximately 13,702 square feet of office and laboratory space in Lowell, Massachusetts. The lease terminated in accordance with the terms of the lease agreement and the facility has been returned to the landlord. No further expenses are anticipated under this lease.

The Company's wholly-owned subsidiary, Metabolix Oilseeds, Inc. ("MOI"), located in Saskatoon, Saskatchewan, Canada, leases approximately 7,000 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 September 2021.

## 9. COMMITMENTS AND CONTINGENCIES

### Contractual Commitments

#### *Exclusive Collaboration Agreement with Rothamsted Research ("Rothamsted")*

On November 12, 2020, the Company signed an exclusive collaboration agreement with UK-based Rothamsted to support Rothamsted's program to develop omega-3 oils in *Camelina sativa*. Under the agreement, Yield10 is providing Rothamsted with financial support for ongoing research including further DHA+EPA trait improvement, field testing and nutritional studies. The Company will pay Rothamsted quarterly research funding and option fees of \$31 for two years totaling \$250, of which \$219 remains outstanding as of March 31, 2021. As part of the agreement, the Company has an exclusive two-year option to sign a global, exclusive or non-exclusive license agreement to the technology. The current agreement terminates automatically on its second anniversary unless terminated earlier in accordance with the terms of the agreement.

#### *License Agreement with the University of Massachusetts ("UMASS")*

Pursuant to a license agreement with UMASS dated as of June 30, 2015 and subsequently amended, the Company has an exclusive, worldwide license under certain patents and patent applications, including issued patents covering the Company's yield trait gene C3003, relating to the manufacture of plants with enhanced photosynthesis. The agreement provides an exclusive, worldwide license to make, have made, use, offer for sale and import any transgenic plant seed or plant grown from transgenic plant material for sale to a farmer or grower that is derived from (in whole or in part) one or more issued or pending claims of the licensed patents or patent applications.

Pursuant to the UMASS license agreement, the Company is required to use diligent efforts to develop licensed products throughout the field of use and to introduce licensed products into the commercial market. The Company's failure to achieve any milestone provided for under the agreement would give UMASS the right to terminate the agreement, following a notice period, unless the Company is able to reach agreement with UMASS as to a potential adjustment to the applicable milestone.

The Company is obligated to pay UMASS milestone payments relating to regulatory filings and approvals covered by the agreement, minimum annual royalties or royalties on any sales of licensed products following regulatory approval, as well as a percentage of any sublicense income, if any, related to the licensed products. The Company or UMASS may terminate the agreement in accordance with the terms of the agreement.

#### *License Agreement with the University of Missouri ("UM")*

Pursuant to a license agreement with UM dated as of May 17, 2018, Yield10 has an exclusive, worldwide license to two novel gene technologies to boost oil content in crops. Both technologies are based on significant new discoveries around the function and regulation of ACCase, a key rate-limiting enzyme involved in oil production. The UM license was expanded during May 2019 to include an exclusive worldwide license to a third gene in the ACCase complex, that the Company has designated C3012, that may complement the activity of C3007 to boost oil content in crops.

Pursuant to the UM license agreement, the Company is required to use diligent efforts to develop licensed products throughout the licensed field and to introduce licensed products into the commercial market. The Company's failure to achieve any milestone provided for under the license agreement would give UM the right to terminate the license agreement or render it nonexclusive, unless the Company is able to reach agreement with UM as to the potential adjustment of the applicable milestone.

The Company is obligated to pay UM a license execution payment, milestone payments relating to any regulatory filings and approvals covered by the license agreement, royalties on any sales of licensed products following regulatory approval, as well as a percentage of any sublicense royalties, if any, related to the licensed products. The Company or UM may terminate the license agreement in accordance with the terms of the agreement.

#### *Facility Leases*

The Company leases facilities under non-cancelable leases expiring at various dates through November 30, 2026. See Note 8.

#### **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 its business, financial condition or results of operations.

#### **Guarantees**

As of March 31, 2021, and December 31, 2020, 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 and contractors. 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 has not incurred material costs to defend lawsuits or settle claims related to these

indemnification provisions. As a result, the estimated fair value of the indemnifications under these agreements is believed to be minimal. Accordingly, the Company has no liabilities recorded for these agreements as of March 31, 2021 and December 31, 2020.

## 10. GEOGRAPHIC INFORMATION

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

	U.S.	Canada	Eliminations	Total
<b>Three Months Ended March 31, 2021</b>				
Grant revenue from external customers	\$ 157	\$ 39	\$ —	\$ 196
Inter-geographic revenues	—	453	(453)	—
Revenues	<u>\$ 157</u>	<u>\$ 492</u>	<u>\$ (453)</u>	<u>\$ 196</u>
<b>Three Months Ended March 31, 2020</b>				
Grant revenue from external customers	\$ 179	\$ —	\$ —	\$ 179
Inter-geographic revenues	—	404	(404)	—
Revenues	<u>\$ 179</u>	<u>\$ 404</u>	<u>\$ (404)</u>	<u>\$ 179</u>

Foreign revenue is based on the country in which the Company's subsidiary that earned the revenue is domiciled. During the three months ended March 31, 2021 and March 31, 2020, revenue earned from the Company's Michigan State University sub-award represented 80.3% and 100.0%, respectively, of total government grant revenue for each period.

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

	U.S.	Canada	Eliminations	Total
March 31, 2021	\$ 920	\$ 48	\$ —	\$ 968
December 31, 2020	\$ 866	\$ 55	\$ —	\$ 921

## 11. CAPITAL STOCK AND WARRANTS

### Common Stock

#### Registered Public Offerings

On February 3, 2021, the Company completed a public offering of 1,040,000 shares of its common stock at a public offering price of \$12.25 per share for total gross proceeds of \$12,740 before issuance costs of \$747.

On August 26, 2020, the Company completed a public offering of 835,000 shares of its common stock at a public offering price of \$4.25 per share. In addition, the underwriter exercised its over-allotment option to purchase 116,835 shares of common stock at the same price for total gross proceeds of \$4,045 before issuance costs of \$425.

#### Private Placement

Concurrent with the registered public offering completed on August 26, 2020, as described above, the Company completed a separate private placement offering of 396,450 shares of its common stock to certain existing shareholders at the same \$4.25 price offered to investors in the public offering. The proceeds from this private placement were \$1,685.

#### Reverse Stock Split

On January 15, 2020, the Company completed a 1-for-40 reverse stock split ("Reverse Stock Split") of its common stock by filing a certificate of amendment (the "Charter Amendment") with the State of Delaware to amend its certificate of incorporation. The ratio for the Reverse Stock Split was determined by the Company's board of directors following approval by stockholders at the Company's special meeting held on January 9, 2020. The Reverse Stock Split had the effect of increasing the Company's common shares available for issuance by reducing issued and outstanding common shares by a divisible factor of 40 while its authorized common shares remained at the current 60 million shares. Proportional adjustments were made to the Company's outstanding stock options and to the number of shares issued and issuable under the Company's equity compensation plans.

### *November 2019 Concurrent Securities Offerings*

On November 19, 2019, the Company closed on concurrent public and private securities offerings that included the following: common stock, Series A Convertible Preferred Stock, Series B Convertible Preferred Stock, Series A Warrants and Series B Warrants. Combined gross cash proceeds from the offerings totaled \$11,500, before issuance costs of \$1,254.

As of the November 19, 2019 closing date of the two offerings, the Company did not have sufficient authorized and available shares of common stock to permit conversion of the Series B Convertible Preferred Stock sold in the private placement or to permit the exercise of the 2,875,000 combined Series A Warrants and Series B Warrants issued under both the public and the private offerings. The Series B Convertible Preferred Shares and the warrants were not convertible or exercisable until more shares of common stock became available for issuance through the Company's filing of the Charter Amendment for the Reverse Stock Split described above. Upon the filing of the amendment on January 15, 2020, all of the Series B Convertible Preferred Stock sold in the private placement automatically converted into 718,750 shares of common stock and the Series A Warrants and Series B Warrants issued in both offerings became eligible for exercise.

At the time of their issuance, the Company determined that all of the Series A Warrants and Series B Warrants should be classified as a warrant liability and recorded at an inception date fair value of \$24,518 due to the insufficiency of common shares available to permit their exercise. The Company re-measured the fair value of the warrants on December 31, 2020 and again on January 15, 2020 (the date of filing the Charter Amendment to increase available shares of common stock), resulting in, respectively, the recognition of a gain of \$9,541 followed by a loss of \$957, due to the change in fair value at each valuation date. By filing the Charter Amendment and effecting the 1-for-40 Reverse Stock Split, the Company's outstanding common shares were reduced by a divisible factor of 40 while authorized common shares remained at the current 60 million shares. As a result of this corporate action, sufficient shares of authorized, but unissued shares of common stock became available for Series A and Series B warrant holders to exercise their warrants resulting in their reclassification from warrant liability to equity during the three months ended March 31, 2020.

### **Preferred Stock**

The Company's Certificate of Incorporation authorizes it to issue up to 5,000,000 shares of \$0.01 par value preferred stock.

#### *Description of Series A Convertible Preferred Stock*

The November 2019 public offering of the Company's securities included the issuance of 2,504 shares of Series A Convertible Preferred Stock. Each Series A Convertible Preferred Share was convertible into 125 shares of common stock at a conversion price of \$8.00 per share. All of the 2,504 shares of the Series A Convertible Preferred Stock converted to 313,000 shares of common stock by April 30, 2020.

#### *Description of Series B Convertible Preferred Stock*

The November 2019 private offering of the Company's securities included the issuance of 5,750 shares of Series B Convertible Preferred Stock. Each share of Series B Convertible Preferred Stock was convertible into 125 shares of common stock at a conversion price of \$8.00 per share. All of the Series B Convertible Preferred Stock converted automatically to 718,750 shares of common stock on January 15, 2020, upon the Company's filing of a Charter Amendment for the reverse stock split described above.

When converted, the shares of Series A and B Convertible Preferred Stock were restored to the status of authorized but unissued shares of preferred stock, subject to reissuance by the Company's board of directors.

### **Warrants**

The following table summarizes information regarding outstanding warrants to purchase common stock as of March 31, 2021:

<b>Issuance</b>	<b>Number of Shares Issuable Upon Exercise of Outstanding Warrants</b>	<b>Exercise Price Per Share of Common Stock</b>	<b>Expiration Date</b>
November 2019 Public Offering - Series A	352,703	\$ 8.00	May 19, 2022
November 2019 Public Offering - Series B	395,528	\$ 8.00	May 19, 2027
November 2019 Private Placement - Series A	718,750	\$ 8.00	May 19, 2022
November 2019 Private Placement - Series B	718,750	\$ 8.00	May 19, 2027
December 2017 Public Offering - Series A	160,975	\$ 90.00	December 21, 2022
July 2017 Registered Direct Offering	14,270	\$ 201.60	January 7, 2024
Consultant	750	\$ 116.00	September 11, 2024
Total	<u>2,361,726</u>		

During the three months ended March 31, 2021, a total of 481,973 Series A and Series B warrants issued in the Company's November 2019 securities offering were exercised by warrant holders, providing \$3,856 in cash proceeds.

### Reserved Shares

The following shares of common stock were reserved for future issuance upon exercise of stock options, vesting of RSUs and conversion of warrants:

	<b>March 31, 2021</b>	<b>December 31, 2020</b>
Stock Options	470,440	339,108
RSUs	18,862	8,500
Warrants	2,361,726	2,843,699
Total number of common shares reserved for future issuance	<u>2,851,028</u>	<u>3,191,307</u>

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

*(All dollar amounts are stated in thousands)*

### Forward-Looking Statements

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

Although we believe that our expectations are based on reasonable assumptions within the limits of our knowledge of our business and operations, these forward-looking statements contained in this document are neither promises nor guarantees. Our business is subject to significant risk and uncertainties and there can be no assurance that our actual results will not differ materially from our expectations. These forward looking statements include, but are not limited to, statements concerning our business plans and strategies; expected future financial results and cash requirements; statements related to the coronavirus pandemic and its potential adverse impacts; plans for obtaining additional funding; plans and expectations that depend on our ability to continue as a going concern; and plans for development and commercialization of our Yield10 technologies. Such forward-looking statements are subject to a number of risks and uncertainties that could cause actual results to differ materially from those anticipated including, without limitation, risks related to our limited cash resources, uncertainty about our ability to secure additional funding, risks related to the execution of our business plans and strategies, risks associated with the protection and enforcement of our intellectual property rights, as well as other risks and uncertainties set forth under the caption "Risk Factors" in Part I, Item 1A, of the Company's [Annual Report on Form 10-K](#) for the year ended December 31, 2020 and in our other filings with the SEC, including in Part II, Item 1A of this Report on Form 10-Q.

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

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

## Overview

Yield10 Bioscience, Inc. is an agricultural bioscience company that is using its differentiated trait gene discovery platform, (the "Trait Factory"), to develop improved Camelina varieties to produce proprietary products, and to produce other high value genetic traits for the agriculture and food industries. We are headquartered in Woburn, Massachusetts and have an Oilseed Center of Excellence in Saskatoon, Saskatchewan, Canada. Our goals are to efficiently develop and commercialize a high value crop products business by developing superior varieties of Camelina for the production of feedstock oils, nutritional oils, and PHA bioplastics, and to license our yield traits to major seed companies for commercialization in major row crops, including corn, soybean and canola.

As of March 31, 2021, we held unrestricted cash, cash equivalents and investments of \$22,730. We follow the guidance of ASC Topic 205-40, *Presentation of Financial Statements-Going Concern*, in order to determine whether there is substantial doubt about our ability to continue as a going concern for one year after the date our financial statements are issued. Based on our current cash forecast, we expect that our present capital resources will be sufficient to fund our planned operations and meet our obligations, when due, into the first quarter of 2023. Our ability to continue operations after our current cash resources are exhausted depends on our ability to obtain additional financing through, among other sources, public or private equity financing, secured or unsecured debt financing, equity or debt bridge financing, warrant holders' ability and willingness to exercise the Company's outstanding warrants, additional government research grants or collaborative arrangements with third parties, as to which no assurances can be given. We do not know whether additional financing will be available on terms favorable or acceptable to us when needed, if at all. If adequate additional funds are not available when required, we may be forced to curtail our research efforts, explore strategic alternatives and/or wind down our operations and pursue options for liquidating our remaining assets, including intellectual property and equipment.

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

## Government Grants

On February 26, 2021, Metabolix Oilseeds, Inc. ("MOI"), the Company's wholly-owned Canadian research subsidiary, received a research grant through the Industrial Research Assistance Program administered by National Research Council Canada ("NRC"). The objective of the grant was to provide financial research assistance to innovative, early-stage small and medium-sized enterprises. Under the terms of the agreement, NRC agreed to contribute up to a maximum of \$39 for payroll costs incurred by MOI during the period December 20, 2020 - March 13, 2021. During the three months ended March 31, 2021, MOI submitted claims for eligible payroll costs and recognized revenue for the full amount of the award.

During 2018, we entered into a sub-award with Michigan State University ("MSU") to support a Department of Energy ("DOE") funded grant entitled "A Systems Approach to Increasing Carbon Flux to Seed Oil." Our participation under this projected five-year grant is being awarded on an annual basis with the first year commencing on September 15, 2017. Cumulative funding for this sub-award in the amount of \$2,403 has been appropriated by the U.S. Congress through the fourth contractual year ending in September 2021. We anticipate that the final option year through September 14, 2022 will be awarded to Yield10 during 2021 for total sub-award funding of \$2,957, provided the U.S. Congress continues to appropriate funds for the program, we are able to make progress towards meeting grant objectives and we remain in compliance with other terms and conditions of the sub-award. During three months ended March 31, 2021 and March 31, 2020, we recognized \$157 and \$179, respectively, in revenue related to this sub-award.

As of March 31, 2021, proceeds of \$374 remain to be recognized through the end of the fourth contractual year under our MSU sub-award as shown in the table below. This includes amounts for reimbursement to our subcontractors, as well as reimbursement for our employees' time, benefits and other expenses related to future performance.

Program Title	Funding Agency	Total Government Funded Appropriations	Total revenue recognized through March 31, 2021	Remaining amount to be recognized as of March 31, 2021	Contract/Grant Expiration
Subcontract from Michigan State University project funded by DOE entitled "A Systems Approach to Increasing Carbon Flux to Seed Oil"	Department of Energy	\$ 2,403	\$ 2,029	\$ 374	September 2021
Funding from National Research Council Canada through its Industrial Research Assistance Program (NRC-IRAP) entitled "Innovation Assistance Program - Round 2.5"	National Research Council Canada	39	39	—	March 2021
<b>Total</b>		<b>\$ 2,442</b>	<b>\$ 2,068</b>	<b>\$ 374</b>	

### Critical Accounting Estimates and Judgments

The discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with GAAP for interim financial information. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. On an ongoing basis, we evaluate our estimates, including those related to revenue recognition, stock-based and performance-based compensation, measurement of right-of-use assets and lease liabilities, the recognition of lease expense and income taxes. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates. The critical accounting policies and the significant judgments and estimates used in the preparation of our condensed consolidated financial statements for the three months ended March 31, 2021, are consistent with those discussed in our [Annual Report on Form 10-K](#) for the year ended December 31, 2020, in the section captioned "Management's Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Estimates and Judgments."

### Results of Operations

#### Comparison of the Three Months Ended March 31, 2021 and 2020

##### Revenue

	Three Months Ended March 31,		Change
	2021	2020	
Grant revenue	\$ 196	\$ 179	\$ 17

Grant revenue was \$196 and \$179 for the three months ended March 31, 2021 and March 31, 2020, respectively. Grant revenue recorded during each of these periods was primarily derived from the Company's DOE sub-award with MSU.

We anticipate that MSU grant revenue will fluctuate slightly during the year ended December 31, 2021 as a result of varying annual budget appropriations awarded under the MSU sub-award and our application of company resources to the grant. Our forecast related to grant revenue is subject to change, should we receive new grants or if our ability to earn revenue from our existing grant is negatively impacted by the COVID-19 pandemic.

## Expenses

	Three Months Ended March 31,		Change
	2021	2020	
Research and development expenses	\$ 1,316	\$ 1,460	\$ (144)
General and administrative expenses	1,432	1,387	45
Total expenses	<u>\$ 2,748</u>	<u>\$ 2,847</u>	<u>\$ (99)</u>

### Research and Development Expenses

Total research and development expenses decreased from \$1,460 during the three months ended March 31, 2020 to \$1,316 during the three months ended March 31, 2021. The \$144, or 10 percent, decrease is primarily due to a reduction in research and development facility related expenses of \$73 and our non-recurring write off of \$141 in leasehold improvements and office furniture during the same period last year when we amended our Woburn, Massachusetts lease to return excess space to the landlord. Partially offsetting these reductions in expense was an increase in employee compensation and benefits of \$88 as a result of higher stock-based compensation and employee payroll expenses.

Based on our current planning and budgeting, we anticipate that research and development expenses will increase during the year ending December 31, 2021 as we continue to expand our plant field trials and continue to prepare our Camelina germplasm for future commercial launch. Our forecasts related to research and development expenses are subject to change due to the potential impact of the COVID-19 pandemic, or as new collaborative and other business opportunities arise that alter our plans.

### General and Administrative Expenses

General and administrative expenses for the three months ended March 31, 2021 and March 31, 2020 increased by \$45 from \$1,387 to \$1,432. The 3 percent increase, is primarily due to an increase in compensation and benefits expense of \$144, including an increase in stock-based compensation of \$117 as a result of stock awards issued during the quarter. Professional fees, which includes legal and accounting services, decreased by \$69 during the three months ended March 31, 2021 compared to the three months ended March 31, 2020, partially offsetting the increase in stock-based compensation expense.

Based on our current planning and budgeting, we anticipate that general and administrative expenses will increase during the year ended December 31, 2021 as we add regulatory support and senior operations and business development resources to our Company in connection with the future commercial launch of our Camelina products. Our forecasts related to general and administrative expenses are subject to change due to the potential impact of the COVID-19 pandemic, or as new collaborative and other business opportunities arise that alter our plans.

## Other Income (Expense), Net

	Three Months Ended March 31,		Change
	2021	2020	
Change in fair value of warrants	\$ —	\$ (957)	\$ 957
Other income (expense), net	(1)	33	(34)
Total other income (expense), net	<u>\$ (1)</u>	<u>\$ (924)</u>	<u>\$ 923</u>

### Change in Fair Value of Warrants

The fair value of the liability classified warrants issued in our November 2019 securities offerings were subject to mark-to-market adjustment on subsequent balance sheet dates. On January 15, 2020, we remeasured the fair value of the warrant liability in connection with the Company's 1-for-40 reverse stock split, recording a loss from the change in fair value of \$957. The reverse stock split increased the number of shares of common stock available for issuance resulting in reclassification of the warrants from a liability to equity.

### *Other Income (Expense), net*

Other income (expense) for the three months ended March 31, 2021 and March 31, 2020 was derived primarily from investment income earned from the Company's cash equivalents and investments offset by interest expense and investment management fees incurred during the period.

### **Liquidity and Capital Resources**

Currently, we require cash to fund our working capital needs, to purchase capital assets, and 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, we have recorded losses since our initial founding, including the three months ended March 31, 2021. As of March 31, 2021, we had an accumulated deficit of \$377,661. Our total unrestricted cash, cash equivalents and investments as of March 31, 2021, were \$22,730 as compared to cash, cash equivalents and investments of \$9,702 at December 31, 2020 and are held primarily for working capital purposes. As of March 31, 2021, we had restricted cash of \$264, consisting of \$229 held in connection with the lease agreement for our Woburn, Massachusetts facility and \$35 held in connection with our corporate credit card program. As of March 31, 2021, we continue to have no outstanding debt.

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 March 31, 2021, we were in compliance with this policy.

We anticipate net cash usage during 2021 within a range of \$10,000 to \$11,000 and estimate that our current cash resources will be sufficient to fund operations and meet our obligations, when due, into the first quarter of 2023. We follow the guidance of ASC Topic 205-40, *Presentation of Financial Statements-Going Concern*, in order to determine whether there is substantial doubt about our ability to continue as a going concern for one year after the date our financial statements are issued. Based on our cash forecast, we expect that our present capital resources will be sufficient to fund our planned operations for at least that period of time. 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. Our ability to continue operations after our current cash resources are exhausted will depend upon our ability to obtain additional financing through, among other sources, public or private equity financing, secured or unsecured debt financing, equity or debt bridge financing, warrant holders' ability and willingness to exercise the Company's outstanding warrants, additional government research grants or collaborative arrangements with third parties, as to which no assurances can be given. We do not know whether additional financing will be available on terms favorable or acceptable to us when needed, if at all. If adequate additional funds are not available when required, we may be forced to curtail our research efforts, explore strategic alternatives and/or wind down our operations and pursue options for liquidating our remaining assets, including intellectual property and equipment.

On March 28, 2021, we filed a shelf registration statement on Form S-3 (File No. 333-254830) with the SEC, which was declared effective on April 2, 2021 (the "Shelf Registration Statement"). The Shelf Registration Statement contained a prospectus which covers the offering, issuance and sale by the Company of up to a maximum aggregate offering price of \$100,000 of our common stock, preferred stock, warrants and subscription rights, which securities may be sold either individually or in units.

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

Net cash used for operating activities during the three months ended March 31, 2021 was \$2,637, compared to net cash used for operating activities during the three months ended March 31, 2020 of \$2,288. Net cash used for operating activities

during the three months ended March 31, 2021 primarily reflects the lower net loss of \$2,561, cash payments made to reduce the Company's lease liabilities of \$109 and our payment of 2020 bonus compensation of \$460. Non-cash charges offsetting a portion of the net loss include depreciation and amortization expense of \$54, the Company's 401(k) matching contribution in common stock of \$44, stock-based compensation expense of \$324, and non-cash lease expense of \$87. Net cash used for operating activities during the three months ended March 31, 2020 was \$2,288 and primarily reflects the net loss of \$3,600 and cash payments made to reduce the Company's lease liabilities and to pay 2019 bonus compensation of \$236 and \$344, respectively, partially offset by non-cash expenses included in the net loss, such as the loss recorded from the revaluation of its warrant liability of \$957, losses from the disposal of fixed assets of \$206, stock-based compensation expense of \$137, and non-cash lease expense of \$151.

Net cash of \$2,030 was provided by investing activities during the three months ended March 31, 2021, primarily as a result of our receiving proceeds of \$3,000 from investments reaching maturity and converting back into cash, partially offset by our purchase of \$869 in new investments. During the three months ended March 31, 2021, we also purchased \$101 in laboratory equipment, including new plant growth chambers. During the three months ended March 31, 2020, \$215 in cash was provided from investing activities.

Net cash of \$15,766 was provided by financing activities during the three months ended March 31, 2021, compared to net cash of \$928 provided by financing activities during the three months ended March 31, 2020. During the three months ended March 31, 2021, the Company completed a public offering of 1,040,000 shares of its common stock at a price of \$12.25 per share, receiving proceeds of \$11,993 net of issuance costs of \$747. Also during the three months ended March 31, 2021, a total of 481,973 Series A and Series B warrants issued in the Company's November 2019 securities offering were exercised by warrant holders, providing \$3,856 in cash proceeds. During the three months ended March 31, 2020, we recorded cash proceeds of \$928 from the exercise of warrants.

#### **Recent Accounting Pronouncements**

See Note 2, "Accounting Policies," to our condensed consolidated financial statements included in this Quarterly Report on Form 10-Q for a full description of recent accounting pronouncements.

#### **ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.**

Not applicable.

#### **ITEM 4. CONTROLS AND PROCEDURES.**

##### **Evaluation of Disclosure Controls and Procedures**

Our management (with the participation of our Principal Executive Officer and Principal Accounting Officer) evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act), as of March 31, 2021. Disclosure controls and procedures are designed to ensure that information required to be disclosed by the Company in the reports it files or submits under the Exchange Act is recorded, processed, summarized and reported on a timely basis and that such information is accumulated and communicated to management, including the Principal Executive Officer and the Principal Accounting Officer, as appropriate, to allow timely decisions regarding disclosure. Based on this evaluation, our Principal Executive Officer and Principal Accounting Officer concluded that these disclosure controls and procedures are effective.

##### **Changes in Internal Control over Financial Reporting**

There have been no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) under the Exchange Act) during the quarter ended March 31, 2021 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

### **PART II — OTHER INFORMATION**

#### **ITEM 1. LEGAL PROCEEDINGS.**

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

## **ITEM 1A. RISK FACTORS.**

There have been no material changes to the risk factors described in our [Annual Report on Form 10-K](#) for the year ended December 31, 2020, filed with the SEC on March 16, 2021.

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

### **Recent Sales of Unregistered Securities**

On January 4, 2021, we issued 3,759 shares of common stock to participants in the Yield10 Bioscience, Inc. 401(k) Plan as a matching contribution. The issuance of these securities is exempt from registration pursuant to Section 3(a)(2) of the Securities Act, as amended as exempted securities.

### **Issuer Purchases of Equity Securities**

During the three months ended March 31, 2021, there were no repurchases made by us or on our behalf, or by any “affiliated purchasers,” of shares of our common stock.

## **ITEM 3. DEFAULTS UPON SENIOR SECURITIES.**

None.

## **ITEM 4. MINE SAFETY DISCLOSURES.**

Not applicable.

## **ITEM 5. OTHER INFORMATION.**

None.

## **ITEM 6. EXHIBITS.**

- [31.1](#) Certification Pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934 of the Principal Executive Officer (filed herewith).
- [31.2](#) Certification Pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934 of the Principal Financial Officer (filed herewith).
- [32.1](#) Section 1350 Certification (furnished herewith).
- 101.1 The following financial information from the Yield10 Bioscience, Inc. Quarterly Report on Form 10-Q for the quarter ended March 31, 2021 formatted in XBRL: (i) Condensed Consolidated Balance Sheets, March 31, 2021 and December 31, 2020; (ii) Condensed Consolidated Statements of Operations, Three Months Ended March 31, 2021 and 2020; (iii) Condensed Consolidated Statements of Comprehensive Loss, Three Months Ended March 31, 2021 and 2020; (iv) Condensed Consolidated Statements of Cash Flows, Three Months Ended March 31, 2021 and 2020; (v) Condensed Consolidated Statements of Series B Convertible Preferred Stock and Stockholders' Equity, Three Months Ended March 31, 2021 and 2020; and (vi) Notes to Consolidated Financial Statements.

**SIGNATURES**

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

YIELD10 BIOSCIENCE, INC.

May 11, 2021

By: /s/ OLIVER PEOPLES

Oliver Peoples  
*President and Chief Executive Officer*  
*(Principal Executive Officer)*

May 11, 2021

By: /s/ CHARLES B. HAASER

Charles B. Haaser  
*Chief Accounting Officer*  
*(Principal Financial and Accounting Officer)*

## CERTIFICATION

I, Oliver Peoples, certify that:

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

Dated: May 11, 2021

/s/ OLIVER PEOPLES

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

## CERTIFICATION

I, Charles B. Haaser, certify that:

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

Dated: May 11, 2021

/s/ CHARLES B. HAASER

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

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

In connection with the Quarterly Report on Form 10-Q of Yield10 Bioscience, Inc. (the "Company") for the quarter ended March 31, 2021 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), we, Oliver Peoples, President, Chief Executive Officer and Principal Executive Officer of the Company and Charles B. Haaser, Chief Accounting Officer and Principal Financial and Accounting Officer of the Company, certify, pursuant to 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, to our knowledge that:

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

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

Dated: May 11, 2021

/s/ OLIVER PEOPLES

Oliver Peoples  
*President and Chief Executive Officer*  
*(Principal Executive Officer)*

Dated: May 11, 2021

/s/ CHARLES B. HAASER

Charles B. Haaser  
*Chief Accounting Officer*  
*(Principal Financial and Accounting Officer)*