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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, 2020

OR

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

For the transition period from                      to

Commission file number 001-33133

**YIELD10 BIOSCIENCE, INC.**

**Delaware**

(State or other jurisdiction of  
incorporation or organization)

**04-3158289**

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

**19 Presidential Way**  
**Woburn, MA**

(Address of principal executive offices)

**01801**

(Zip Code)

**(617) 583-1700**

(Registrant's telephone number, including area code)

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

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 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 11, 2020 was 1,970,298.

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**Yield10 Bioscience, Inc.**  
**Form 10-Q**  
**For the Quarter Ended March 31, 2020**

**Table of Contents**

	<b>Page</b>
<b><u>Part I. Financial Information</u></b>	<b><u>3</u></b>
Item	
<u>1.</u> <u>Condensed Consolidated Financial Statements (unaudited)</u>	<u>3</u>
<u>Condensed Consolidated Balance Sheets at March 31, 2020 and December 31, 2019</u>	<u>3</u>
<u>Condensed Consolidated Statements of Operations for the three months ended March 31, 2020 and 2019</u>	<u>4</u>
<u>Condensed Consolidated Statements of Comprehensive Loss for the three months ended March 31, 2020 and 2019</u>	<u>5</u>
<u>Condensed Consolidated Statements of Cash Flows for the three months ended March 31, 2020 and 2019</u>	<u>6</u>
<u>Condensed Consolidated Statements of Series B Convertible Preferred Stock and Stockholders' (Deficit) Equity for the three months ended March 31, 2020 and 2019</u>	<u>7</u>
<u>Notes to the Condensed Consolidated Financial Statements</u>	<u>9</u>
<u>2.</u> <u>Management's Discussion and Analysis of Financial Condition and Results of Operations</u>	<u>25</u>
<u>3.</u> <u>Quantitative and Qualitative Disclosures About Market Risk</u>	<u>31</u>
<u>4.</u> <u>Controls and Procedures</u>	<u>31</u>
<b><u>Part II. Other Information</u></b>	<b><u>32</u></b>
Item	
<u>1.</u> <u>Legal Proceedings</u>	<u>32</u>
<u>1A.</u> <u>Risk Factors</u>	<u>32</u>
<u>2.</u> <u>Unregistered Sales of Equity Securities and Use of Proceeds</u>	<u>33</u>
<u>3.</u> <u>Defaults Upon Senior Securities</u>	<u>33</u>
<u>4.</u> <u>Mine Safety Disclosures</u>	<u>33</u>
<u>5.</u> <u>Other Information</u>	<u>33</u>
<u>6.</u> <u>Exhibits</u>	<u>33</u>
<b><u>SIGNATURES</u></b>	<b><u>34</u></b>

**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)**

	<b>March 31, 2020</b>	<b>December 31, 2019</b>
<b>Assets</b>		
Current Assets:		
Cash and cash equivalents	\$ 4,295	\$ 5,417
Short-term investments	5,475	5,700
Accounts receivable	54	72
Unbilled receivables	125	20
Prepaid expenses and other current assets	560	475
Total current assets	10,509	11,684
Restricted cash	254	332
Property and equipment, net	1,021	1,243
Right-of-use assets	2,990	3,141
Other assets	272	318
Total assets	\$ 15,046	\$ 16,718
<b>Liabilities, Convertible Preferred Stock and Stockholders' (Deficit) Equity</b>		
Current Liabilities:		
Accounts payable	\$ 135	\$ 279
Accrued expenses	1,579	1,326
Lease liabilities	473	602
Total current liabilities	2,187	2,207
Lease liabilities, net of current portion	3,512	3,619
Warrant liability	—	14,977
Other long-term liabilities	18	—
Total liabilities	5,717	20,803
Commitments and contingencies (Note 9)		
Series B Convertible Preferred Stock (\$0.01 par value per share); 0 and 5,750 shares issued and outstanding at March 31, 2020 and December 31, 2019, respectively	—	—
Stockholders' Equity (Deficit):		
Series A Convertible Preferred Stock (\$0.01 par value per share); 296 shares and 796 shares issued and outstanding at March 31, 2020 and December 31, 2019, respectively	—	—
Common stock (\$0.01 par value per share); 60,000,000 shares authorized at March 31, 2020 and December 31, 2019; 1,923,184 and 933,423 shares issued and outstanding at March 31, 2020 and December 31, 2019, respectively	19	9
Additional paid-in capital	377,963	360,926
Accumulated other comprehensive loss	(159)	(126)
Accumulated deficit	(368,494)	(364,894)
Total stockholders' equity (deficit)	9,329	(4,085)
Total liabilities, convertible preferred stock and stockholders' equity (deficit)	\$ 15,046	\$ 16,718

*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,	
	2020	2019
<b>Revenue:</b>		
Grant revenue	\$ 179	\$ 124
Total revenue	179	124
<b>Expenses:</b>		
Research and development	1,460	1,223
General and administrative	1,387	1,186
Total expenses	2,847	2,409
Loss from operations	(2,668)	(2,285)
<b>Other income (expense):</b>		
Change in fair value of warrants	(957)	—
Interest income	37	27
Other income (expense), net	(4)	(2)
Total other income (expense)	(924)	25
Net loss from operations before income tax expense	(3,592)	(2,260)
Income tax expense	(8)	—
Net loss	\$ (3,600)	\$ (2,260)
Basic and diluted net loss per share	\$ (2.12)	\$ (8.61)
<b>Number of shares used in per share calculations:</b>		
Basic and diluted	1,697,125	262,567

*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</b>	
	<b>March 31,</b>	
	<b>2020</b>	<b>2019</b>
Net loss:	\$ (3,600)	\$ (2,260)
Other comprehensive loss		
Change in unrealized gain (loss) on investments	22	—
Change in foreign currency translation adjustment	(55)	(5)
Total other comprehensive loss	(33)	(5)
Comprehensive loss	\$ (3,633)	\$ (2,265)

*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)**

	Three Months Ended March 31,	
	2020	2019
<b>Cash flows from operating activities</b>		
Net loss	\$ (3,600)	\$ (2,260)
Adjustments to reconcile net loss to cash used in operating activities:		
Depreciation	48	50
Change in fair value of warrants	957	—
Loss on disposal of fixed assets	206	—
Charge for 401(k) company common stock match	42	24
Stock-based compensation	137	162
Non-cash lease expense	151	147
Deferred tax provision	30	—
Changes in operating assets and liabilities:		
Accounts receivables	18	49
Unbilled receivables	(105)	(13)
Prepaid expenses and other assets	(69)	(60)
Accounts payable	(144)	(105)
Accrued expenses	259	(92)
Lease liabilities	(236)	(198)
Other liabilities	18	—
Net cash used for operating activities	(2,288)	(2,296)
<b>Cash flows from investing activities</b>		
Purchase of property and equipment	(42)	—
Proceeds from sale of property and equipment	10	—
Purchase of short-term investments	(503)	—
Proceeds from the sale and maturity of short-term investments	750	2,746
Net cash provided by investing activities	215	2,746
<b>Cash flows from financing activities</b>		
Proceeds from warrants exercised (Note 11)	928	—
Proceeds from registered direct offering, net of issuance costs	—	2,597
Net cash provided by financing activities	928	2,597
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(55)	(5)
Net (decrease) increase in cash, cash equivalents and restricted cash	(1,200)	3,042
Cash, cash equivalents and restricted cash at beginning of period	5,749	3,355
Cash, cash equivalents and restricted cash at end of period	\$ 4,549	\$ 6,397
<b>Supplemental disclosure of non-cash information:</b>		
Purchase of property and equipment included in accounts payable and accrued expenses	\$ —	\$ 12
Offering costs remaining in accrued expenses	\$ —	\$ 14

*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' (DEFICIT) EQUITY**  
**UNAUDITED**  
(In thousands, except share amounts)

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 Income (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 (Note 11)	—	—	—	—	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>	—	\$ —	296	\$ —	1,923,184	\$ 19	\$ 377,963	\$ (159)	\$ (368,494)	\$ 9,329

Three Months Ended March 31, 2019

	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, 2018</b>	—	\$ —	—	\$ —	250,631	\$ 3	\$ 357,743	\$ (110)	\$ (351,938)	\$ 5,698
Non-cash stock-based compensation expense	—	—	—	—	—	—	162	—	—	162
Issuance of common stock for 401(k) match	—	—	—	—	518	—	17	—	—	17
Issuance of common stock for registered direct offering, net of \$349 offering costs	—	—	—	—	60,541	—	2,583	—	—	2,583
Effect of foreign currency translation and unrealized loss on investments	—	—	—	—	—	—	—	(5)	—	(5)
Net loss	—	—	—	—	—	—	—	—	(2,260)	(2,260)
<b>Balance, March 31, 2019</b>	—	\$ —	—	\$ —	311,690	\$ 3	\$ 360,505	\$ (115)	\$ (354,198)	\$ 6,195

*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. is an agricultural bioscience company that uses its "Trait Factory" and the Camelina oilseed "Fast Field Testing" system to develop high value seed traits for the agriculture and food industries. The Company's goal is to efficiently develop superior gene traits for the major crops including corn, soybean, canola, and other crops to enable step-change increases in crop yield of at least 10-20 percent. The "Trait Factory" encompasses discovery of gene targets using the GRAIN ("Gene Ranking Artificial Intelligence Network") big data mining platform, deployment of trait gene targets in the oilseed Camelina and generation of field performance data. The "Trait Factory" enables two complementary commercial opportunities with different paths to market. The first is trait licensing to the major seed companies for corn, soybean, canola and other crops. Data from the Company's trait field testing in Camelina has enabled Yield10 to establish research license agreements with leading seed companies including Bayer, Forage Genetics and Simplot. These companies are progressing the development of Yield10 traits in soybean, forage sorghum, and potato, respectively. The second is to improve the performance and value of Camelina as a platform to develop a commercial crop product business producing nutritional oils and PHA biomaterials. Using this approach, Yield10 can leverage the resources of the major seed companies to efficiently develop superior gene traits for the major crops and focus internal resources on trait gene discovery and the commercial development of Camelina products.

The accompanying unaudited 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, 2020 and March 31, 2019.

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, 2019, which are contained in the Company's Annual Report on Form 10-K filed with the SEC on March 25, 2020.

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. Except for a single year, the Company has recorded losses since its initial founding, including the three months ended March 31, 2020.

As of March 31, 2020, the Company held unrestricted cash, cash equivalents and short-term investments of \$9,770. 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 and meet its obligations into the second quarter of 2021. 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. Based on its cash forecast, management has determined that the Company's present capital resources will likely not be sufficient to fund its planned operations for the twelve months from the date that these interim financial statements are filed, which raises substantial doubt about the Company's ability to continue as a going concern.

If the Company issues equity or debt securities to raise additional funds, (i) the Company may incur fees associated with such issuance, (ii) its existing stockholders may experience dilution from the issuance of new equity securities, (iii) the Company may incur ongoing interest expense and be required to grant a security interest in Company assets in connection with any debt issuance, and (iv) the new equity or debt securities may have rights, preferences and privileges senior to those of the Company's existing stockholders. In addition, utilization of the Company's net operating loss and research and development credit carryforwards may be subject to significant annual limitations under Section 382 of the Internal Revenue Code of 1986, as amended (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.

## 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 Canadian subsidiary, Metabolix Oilseeds, Inc.

### 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 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, 2020</b>	<b>December 31, 2019</b>
Cash and cash equivalents	\$ 4,295	\$ 5,417
Restricted cash	254	332
<b>Total cash, cash equivalents and restricted cash</b>	<b>\$ 4,549</b>	<b>\$ 5,749</b>

Amounts included in restricted cash represent those required to be set aside by contractual agreement. Restricted cash of \$254 at March 31, 2020 and \$332 at December 31, 2019 consists primarily of funds held in connection with the Company's lease agreement for its Woburn, Massachusetts facility.

### Investments

The Company considers all investments purchased with an original maturity date of 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. All other investments are classified as long-term.

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**

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

## **Comprehensive Income (Loss)**

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

## **Income Taxes**

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

## **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, 2020, 100% of the Company's total accounts and unbilled receivables are due from U.S. government grants.

## **Fair Value Measurements**

The carrying amounts of the Company's financial instruments as of March 31, 2020 and December 31, 2019, 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 new technologies to enable step-change increases in crop yield to enhance global food security and production of specialty oils and niche crops. 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. Repairs and maintenance are charged to operating expense as incurred. Depreciation is computed using the straight-line method over the estimated useful lives of the assets once they are placed in service as follows:

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

## Impairment of Long-Lived Assets

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

## Grant Revenue

The Company's source of continuing revenue is from its government research grants, in which it serves as either the primary contractor or as a subcontractor. These grants are considered an ongoing major and central operation of the Company's business. Revenue is earned as research expenses related to the grants are incurred. Revenue earned on government grants, but not yet invoiced as of the balance sheet date, are recorded as unbilled receivables in the accompanying consolidated balance sheets at March 31, 2020 and December 31, 2019. 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, product trials, facility related expenses, depreciation, and stock-based compensation. Costs incurred in connection with government research grants are recorded as research and development expenses.

## General and Administrative Expenses

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

## Intellectual Property Costs

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

## Stock-Based Compensation

All share-based payments to employees, members of the Board of Directors and non-employees are recognized within operating expense based on the straight-line recognition of their grant date fair value over the period during which the recipient is required to provide service in exchange for the award. See Note 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, 2020, the Company adopted the following new accounting guidance.

In August 2018, the FASB issued ASU No. 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement*. This standard modifies certain disclosure requirements on fair value measurements. This standard became effective for the Company on January 1, 2020 and did not have a material impact on its disclosures.

In November 2018, the FASB issued ASU No. 2018-18, *Collaborative Arrangements (Topic 808): Clarifying the Interaction between Topic 808 and Topic 606*. This standard makes targeted improvements for collaborative arrangements as follows:

- Clarifies that certain transactions between collaborative arrangement participants should be accounted for as revenue under ASC 606, *Revenue from Contracts with Customers*, when the collaborative arrangement participant is a customer in the context of a unit of account. In those situations, the guidance in ASC 606 should be applied, including recognition, measurement, presentation and disclosure requirements;
- Adds unit-of-account guidance to ASC 808, *Collaborative Arrangements*, to align with the guidance in ASC 606 (that is, a distinct good or service) when an entity is assessing whether the collaborative arrangement or a part of the arrangement is within the scope of ASC 606; and
- Precludes a company from presenting transactions with collaborative arrangement participants that are not directly related to sales to third parties with revenue recognized under ASC 606 if the collaborative arrangement participant is not a customer.

This standard became effective on January 1, 2020. However, since the Company is not currently participating in any collaborative arrangements, the new standard does not impact its financial statements.

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*, which requires the measurement and recognition of expected credit losses for financial assets held at amortized cost. It also eliminates the concept of other-than-temporary impairment and requires credit losses related to available-for-sale debt securities to be recorded through an allowance for credit losses rather than as a reduction in the amortized cost basis of the securities. These changes will result in more timely recognition of credit losses. 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 the Company's 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. 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 and warrants.

The number of shares of potentially dilutive common stock presented on a weighted average basis, related to options, restricted stock units and warrants (prior to consideration of the treasury stock method) that were excluded from the calculation of dilutive shares since the inclusion of such shares would be anti-dilutive for the three months ended March 31, 2020 and March 31, 2019, respectively, are shown below. Issued and outstanding warrants shown in the table below are described in greater detail in Note 11, contained herein.

	Three Months Ended March 31,	
	2020	2019
Options	68,032	43,018
Restricted Stock Awards	9,341	171
Series A Convertible Preferred Stock	39,060	—
Series B Convertible Preferred Stock	126,374	—
Warrants	2,846,199	185,827
Total	3,089,006	229,016

#### 4. INVESTMENTS

Investments consist of the following at March 31, 2020 and December 31, 2019:

	Accumulated Cost at March 31, 2020	Unrealized		Market Value at March 31, 2020
		Gain	(Loss)	
Short-term investments				
Government securities	\$ 5,453	\$ 22	\$ —	\$ 5,475
Total	\$ 5,453	\$ 22	\$ —	\$ 5,475

	Accumulated Cost at December 31, 2019	Unrealized		Market Value at December 31, 2019
		Gain	(Loss)	
Short-term investments				
Government securities	\$ 5,700	\$ —	\$ —	\$ 5,700
Total	\$ 5,700	\$ —	\$ —	\$ 5,700

All short-term investments are classified as available for sale as of March 31, 2020 and December 31, 2019. The Company held no long-term investments at March 31, 2020, and December 31, 2019.

#### 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. In addition, during November 2019, the Company issued Series A Warrants and Series B Warrants in two concurrent securities offerings. At the time of issuance, 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 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. 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, 2020 and December 31, 2019 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 daily, 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, 2020 and December 31, 2019.

The \$14,977 fair value of the Series A Warrants and Series B Warrants at December 31, 2019 was determined using the Black-Scholes valuation model. The expected volatility and the risk free discount rate used in the Black-Scholes model were determined based on the Company's historical market price published on the Nasdaq Capital Market and from published U.S. Treasury yield curves, respectively, for a period matched to the contractual term of each warrant series.

<b>At December 31, 2019</b>	<b>Series A Warrants</b>	<b>Series B Warrants</b>
Fair market of common stock (per share)	\$6.86	\$6.86
Expected term (years)	2.3	7.3
Risk free rate	1.62%	1.83%
Volatility	127%	115%

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 issued under the offerings completed in November 2019 became eligible for exercise. Prior to reclassification as equity, the Company adjusted the warrant liability to its \$15,934 fair value using the assumptions below at January 15, 2020, recording a loss on the adjustment to fair value of \$957 during the three months ended March 31, 2020.

<b>At January 15, 2020</b>	<b>Series A Warrants</b>	<b>Series B Warrants</b>
Fair market of common stock (per share)	\$3.77	\$3.77
Expected term (years)	2.3	7.3
Risk free rate	1.62%	1.83%
Volatility	127%	115%

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, 2020 and December 31, 2019 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, 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	\$ 3,669	\$ —	\$ —	\$ 3,669
Short-term investments:				
U.S. government and agency securities	—	5,475	—	5,475
Total assets	<u>\$ 3,669</u>	<u>\$ 5,475</u>	<u>\$ —</u>	<u>\$ 9,144</u>

Description	Fair value measurements at reporting date using			Balance as of December 31, 2019
	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	\$ 2,622	\$ —	\$ —	\$ 2,622
U.S. government and agency securities	—	1,750	—	1,750
Short-term investments:				
U.S. government and agency securities	—	5,700	—	5,700
<b>Total assets</b>	<b>\$ 2,622</b>	<b>\$ 7,450</b>	<b>\$ —</b>	<b>\$ 10,072</b>
<b>Liabilities</b>				
Warrant liability	\$ —	\$ —	\$ 14,977	\$ 14,977
<b>Total liabilities</b>	<b>\$ —</b>	<b>\$ —</b>	<b>\$ 14,977</b>	<b>\$ 14,977</b>

There were no transfers of financial assets or liabilities between category levels for the three months ended March 31, 2020 and three months ended March 31, 2019.

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 Tephra's current outstanding common shares on a fully diluted basis and were fully written off through an impairment charge during 2005 prior to Tephra initiating commercial product sales.

## 6. ACCRUED EXPENSES

Accrued expenses consisted of the following at:

	March 31, 2020	December 31, 2019
Employee compensation and benefits	\$ 388	\$ 669
Leased facilities	58	51
Professional services	237	327
Accrued warrant obligation	710	—
Other	186	279
<b>Total accrued expenses</b>	<b>\$ 1,579</b>	<b>\$ 1,326</b>

See Note 11 for an explanation of the accrued warrant obligation shown in the table above.

## 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 \$137 and \$162 for the three months ended March 31, 2020 and March 31, 2019, respectively. At March 31, 2020, there was approximately \$1,282 of pre-tax stock-based compensation expense related to unvested awards not yet recognized.

The compensation expense related to unvested stock options is expected to be recognized over a remaining weighted average period of 2.96 years.

## Stock Options

A summary of option activity for the three months ended March 31, 2020 is as follows:

	Number of Shares	Weighted Average Exercise Price
Outstanding at December 31, 2019	62,065	\$ 178.95
Granted	16,473	\$ 6.56
Exercised	—	—
Forfeited	(376)	\$ 48.53
Expired	(397)	\$ 828.81
Outstanding at March 31, 2020	<u>77,765</u>	\$ 139.74
Vested and expected to vest at March 31, 2020	77,765	\$ 139.74
Options exercisable at March 31, 2020	40,536	\$ 232.23

## 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 (unless the employee makes other arrangements for payment of the tax withholding) from the common stock issuable at the vest date. The Company then pays the minimum required income tax for the employees. During the three months ended March 31, 2020 and March 31, 2019, the Company did not pay for income tax withholdings associated with RSUs.

A summary of RSU activity for the three months ended March 31, 2020 is as follows:

	Number of RSUs	Weighted Average Remaining Contractual Life (years)
Outstanding at December 31, 2019	—	
Awarded	17,000	
Common stock issued upon vesting	—	
Forfeited	—	
Outstanding at March 31, 2020	<u>17,000</u>	0.62

## 8. LEASES

### Lease Accounting

The Company follows the lease accounting guidance codified in ASC 842, *Leases*, ("Topic 842"). Under Topic 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 arrangements meet the standards for operating lease classification.

Under Topic 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 lease. The Company has adopted the short-term lease exception that permits lessees to omit leases with terms of twelve months or less from the accounting requirements of Topic 842.

## Maturity Analysis of Lease Liabilities

At March 31, 2020, the Company's lease liabilities will mature as follows:

Year ended December 31,	Undiscounted Cash Flows	
2020 (April to December)	\$	572
2021		704
2022		726
2023		749
2024		771
Thereafter		1,540
<b>Total undiscounted future lease payments</b>		<b>5,062</b>
Discount		(1,077)
<b>Total lease liabilities</b>	<b>\$</b>	<b>3,985</b>
Short-term lease liabilities	\$	473
Long-term lease liabilities	\$	3,512

At March 31, 2020, real estate leases represent 100% of the Company's right-of-use assets and corresponding lease liabilities.

## Quantitative Disclosure of Lease Costs (unaudited)

	Three Months Ended March 31,	
	2020	2019
<b>Lease cost:</b>		
Operating lease cost	\$ 203	\$ 259
Short-term lease cost	183	146
Sublease income	(137)	(124)
<b>Total lease cost, net</b>	<b>\$ 249</b>	<b>\$ 281</b>
<b>Other information as of:</b>	<b>March 31, 2020</b>	<b>December 31, 2019</b>
Weighted-average remaining lease term (years)	6.6	6.7
Weighted-average discount rate	7.24%	7.24%

## Real Estate Leases

During 2016, the Company entered into a lease agreement for its headquarters, pursuant to which the Company leased approximately 29,622 square feet of office and research and development space located at 19 Presidential Way, Woburn, Massachusetts. The lease began on June 1, 2016 and will end on November 30, 2026. The lease agreement does not include any options for an early termination or an extension of the lease. The Company provided the landlord with a security deposit in the form of a letter of credit in the amount of \$307. Pursuant to the lease, the Company is required to pay certain taxes and operating costs associated with the premises throughout the term of the lease. During the buildout of the rented space, the landlord paid \$889 for tenant improvements to the facility and an additional \$444 for tenant improvements that result in increased rental payments by the Company. Upon the adoption of Topic 842, these improvements were recorded as a reduction in the valuation of the right-of-use asset.

In November 2019, the Company entered into a modification agreement to the Woburn lease in which Yield10 permanently returned 7,409 square feet of underutilized space to the landlord for the remaining term of the lease. In exchange for returning the space, the landlord agreed to fund modifications and upgrades to the office space retained by the Company. The modifications were completed in February 2020, and after that point the Company has no further financial obligations for the vacated space and lease rental charges, including utilities, maintenance and real estate tax charges, are proportionally reduced. The security deposit was also reduced to \$229. During the three months ending March 31, 2020, the Company wrote off \$206 in leasehold improvements and office furniture, net of proceeds, associated with the returned space.

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 unaffected by the Company's recent lease modification with the landlord and remains coterminous with the Company's master lease. CJ will pay pro rata rent and operating expenses equal 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 \$5,062 shown in the lease maturity analysis table above. CJ provided the Company with a security deposit of \$103 in the form of an irrevocable letter of credit.

The Company also leases approximately 13,702 square feet of office and laboratory space at 650 Suffolk Street, Lowell, Massachusetts. The lease for this facility, as amended, expires in May 2020. During July 2018, the Company discontinued further use of the Lowell space, and as a result, the Company recorded a non-cash lease exit charge of \$255 for the facility in accordance with ASC Topic 420-10, *Exit or Disposal Obligations*. The exit charge was recorded as an increase in the Company's lease expense and a reduction to the associated right-of-use asset. The Company will continue to make monthly rental payments for the Lowell facility through its expiration date in May 2020. The Company does not anticipate incurring material charges in returning this space to the landlord.

The Company's wholly-owned subsidiary, Metabolix Oilseeds, Inc. ("MOI"), located in Saskatoon, Saskatchewan, Canada, leases approximately 6,900 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 2020.

## **9. COMMITMENTS AND CONTINGENCIES**

### **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, 2020, and December 31, 2019, 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 Bioscience has not incurred material costs to defend lawsuits or settle claims related to these indemnification provisions. As a result, the estimated fair value of the indemnifications under these agreements is believed to be minimal. Accordingly, the Company has no liabilities recorded for these agreements as of March 31, 2020 and December 31, 2019.

## 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, 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>
<b>Three Months Ended March 31, 2019:</b>				
Grant revenue from external customers	\$ 124	\$ —	\$ —	\$ 124
Inter-geographic revenues	—	337	(337)	—
Revenues	<u>\$ 124</u>	<u>\$ 337</u>	<u>\$ (337)</u>	<u>\$ 124</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, 2020 and March 31, 2019, grant revenue earned from the Company's Michigan State University sub-award totaled \$179 and \$124, respectively, and represented 100% of total revenue for both periods.

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

	U.S.	Canada	Eliminations	Total
March 31, 2020	\$ 971	\$ 50	\$ —	\$ 1,021
December 31, 2019	\$ 1,186	\$ 57	\$ —	\$ 1,243

## 11. CAPITAL STOCK AND WARRANTS

### Common Stock

#### Shelf Registration

On April 1, 2020, the Company filed a shelf registration statement on Form S-3 (File No. 333-237539) with the SEC, which was declared effective on April 10, 2020 (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 \$25.0 million of the Company's common stock, preferred stock, warrants and subscription rights, which securities may be sold either individually or in units.

#### 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 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, receiving combined gross cash proceeds of \$11,500, before issuance costs of \$1,254.

The public portion of the offering included sales of Class A Units and Class B Units as follows:

- 405,750 Class A Units priced at a public offering price of \$8.00 per unit, with each unit consisting of one share of common stock, par value \$0.01 per share, Series A Warrants to purchase one share of common stock at an exercise price of \$8.00 per share, expiring two and one-half-years from the closing date of the offering, and Series B Warrants to purchase one share of common stock at an exercise price of \$8.00 per share, expiring seven and one-half-years from the closing date of the offering. The 405,750 Class A Units sold include the full exercise of the underwriter's over-allotment option of 93,750 Class A Units.
- 2,504 Class B Units, priced at a public offering price of \$1,000 per unit, with each unit consisting of one share of Series A Convertible Preferred Stock, par value \$0.01 per share, convertible at any time at the holder's option into 125 shares of common stock, par value \$0.01 per share, Series A Warrants to purchase 125 shares of common stock at an exercise price of \$8.00 per share, expiring two and one-half-years from the closing date of the offering, and Series B Warrants to purchase 125 shares of common stock at an exercise price of \$8.00 per share, expiring seven and one-half-years from the closing date of the offering. The Series A Convertible Preferred Stock is convertible into shares of common stock at any time at a price of \$8.00 per share. As of March 31, 2020, 2,208 shares of the Series A Convertible Preferred Stock had converted to 276,000 shares of the Company's common stock.
- Gross proceeds from the sale of Class A Units and Class B Units totaled \$5,750.

In the concurrent private placement, certain existing shareholders purchased the following securities:

- 5,750 Units, priced at \$1,000 per unit, each unit consisting of one share of the Company's Series B Convertible Preferred Stock, par value \$0.01 per share, contingently convertible into 125 shares of common stock at an exercise price of \$8.00, Series A Warrants to purchase 125 shares of common stock, par value \$0.01 per share, at an exercise price of \$8.00 per share, expiring two and one-half-years from the closing date of the offering, and Series B Warrants to purchase 125 shares of common stock at an exercise price of \$8.00 per share, expiring seven and one-half-years from the closing date of the offering.
- Gross proceeds from the private placement also totaled \$5,750.

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 Series A Warrants and Series B 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. Upon the filing of the Charter Amendment on January 15, 2020, 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 under both offerings became eligible for exercise.

The Company determined that the Series A Convertible Preferred Stock qualified, and continues to qualify, for presentation as permanent equity on the Company's balance sheets as of March 31, 2020 and December 31, 2019. The Company further concluded that contingent redemption rights of the Series B Convertible Preferred stockholders were outside the Company's control, resulting in their classification as temporary equity within the Company's balance sheet until their automatic conversion to common shares in January 2020.

The Series A and B Warrants are free standing financial instruments, legally detachable and separately exercisable from the common and preferred shares issued in the concurrent offerings. At the time of their issuance, the Company determined that all of the 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. As the proceeds from the offerings were less than the fair value of their respective warrants, the warrants were recorded at their full fair value and the difference between the fair value and the cash proceeds of \$13,018 was recorded to other income (expense) in the Company's consolidated statement of operations during the year ended December 31, 2019. No allocation of residual offering proceeds remained to be allocated to the common and preferred shares sold in the offerings.

The Company re-measured the fair value of the warrants on December 31, 2019 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 enacting 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 in the Company's consolidated balance sheet.

At closing, the proceeds of the combined offerings were allocated solely to the liability classified warrants, and as a consequence, the offering costs of \$1,254 were immediately expensed to other income (expense) in the consolidated statement of operations for the year ended December 31, 2019 in accordance with accounting guidance.

#### *March 2019 Registered Direct Offering*

On March 18, 2019, the Company completed a registered direct offering of its common stock. Proceeds from the transaction were \$2,932 before issuance costs of \$349. Investors participating in the transaction purchased a total of 60,541 shares of common stock at a price of \$48.40 per share.

#### **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 concurrent offerings of the Company's securities included the issuance of 2,504 shares of Series A Convertible Preferred Stock. Each Series A Convertible Preferred Share is convertible into 125 shares of common stock at a conversion price of \$8.00 per share, subject to adjustments as a result of stock dividends and stock splits. Material provisions of the Series A Convertible Preferred stock include the following:

- The Series A Convertible Preferred Stock is not redeemable.
- Holders of the Series A Convertible Preferred Stock may convert their preferred shares to common stock at any time. Subject to certain conditions, the Company can force a conversion based on certain market price and trading volume criteria.
- Conversion of the Series A Convertible Preferred Stock is prohibited if, as a result of a conversion, the holder, together with its affiliates, would beneficially own a number of shares of common stock in excess of 4.99% (or at the election of the purchaser prior to the date of issuance, 9.99%) of the shares of the Company's common stock then outstanding after giving effect to such exercise.
- Holders of the Series A Convertible Preferred Stock have no voting rights. However, Series A Convertible Preferred stockholders have certain protective voting rights that are designed to prevent adverse changes to their ownership rights without their approval.
- In the event of a liquidation, the holders of Series A Convertible Preferred Shares are entitled to participate on an as-converted-to-common stock basis with holders of common stock in any distribution of assets of the Company to the holders of the common stock.
- Holders of Series A Convertible Preferred Stock are entitled to receive dividends equal to (on an as-if-converted basis) and in the same form and manner as dividends paid on shares of the Company's common stock.

Through March 31, 2020, 2,208 shares of the Series A Convertible Preferred Stock have been converted to 276,000 shares of common stock.

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

The November 2019 concurrent offerings 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, subject to adjustments as a result of stock dividends and stock splits. At the time of issuance, the Series B Convertible Preferred Stock had various superior rights to the Company's other securities, including the Series A Convertible Preferred Stock sold under the public portion of the concurrent offerings. All of the Series B Convertible Preferred Stock automatically converted to 718,750 shares of common stock on January 15, 2020, upon the Company's filing of a Charter Amendment as a result of shareholder approval for the reverse stock split described above.

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

#### **Warrants**

The following table summarizes information regarding outstanding warrants to purchase common stock as of March 31, 2020:

<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	583,227	\$ 8.00	May 19, 2022
November 2019 Public Offering - Series B	649,477	\$ 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 warrants	<u>2,846,199</u>		

#### *February 2020 Warrant Exercises*

In November 2019, in connection with the Company's public securities offering that closed on November 19, 2019, the Company issued Series A Warrants and Series B Warrants (together, the "Warrants") to purchase shares of the Company's common stock. The Warrants were issued, and are held, in book-entry form through The Depository Trust & Clearing Corporation ("DTCC"). On January 15, 2020, the Company completed the Reverse Stock Split of its common stock. Pursuant to the terms of the Warrants, in the event of a reverse stock split, the exercise price of each Warrant and the number of shares issuable upon exercise of each Warrant are required to be proportionately adjusted in accordance with the ratio of the Reverse Stock Split. During the three months ended March 31, 2020, a total of 204,796 Warrants were exercised, generating cash proceeds for the Company of \$1,638. On May 1, 2020, DTCC and American Stock Transfer & Trust Company, LLC, as the Company's warrant agent (the "Warrant Agent") notified the Company that, following the Reverse Stock Split, the exercise price of each Warrant had been proportionately adjusted in accordance with the Reverse Stock Split, but the number of shares issuable upon exercise of each Warrant had not been proportionately adjusted in the records of DTCC. As a result, it appears probable that certain investors who exercised Warrants following the Reverse Stock Split, during the month of February 2020, were inadvertently issued an incorrect number of shares of the Company's common stock upon the exercise of their Warrants. The Company believes that up to 88,762 shares of the Company's common stock may have been incorrectly issued in connection with such Warrant exercises, and up to \$710 in warrant exercise proceeds may have been incorrectly collected. The Company is in the process of verifying and evaluating the information received from DTCC and the Warrant Agent regarding this matter, and as such the number of shares and amount of proceeds subject to the error may change. The Company is working with DTCC and the Warrant Agent to return any excess proceeds that were collected, and to cause to be returned to it any excess number of shares of the Company's common stock that were issued in connection with these Warrant exercises, as soon as possible. The Company has recorded \$710 within accrued expenses for the cash proceeds expected to be returned to holders of Warrants. The amount of cash proceeds ultimately returned to holders of Warrants may change based on subsequent information obtained by the Company from DTCC, the Warrant Agent, or the holders of Warrants.

#### **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, 2020</b>	<b>December 31, 2019</b>
Stock Options	77,765	62,065
RSUs	17,000	—
Series A Convertible Preferred Stock - November 2019 Public Offering	37,000	99,500
Warrants	2,846,199	175,995
Total number of common shares reserved for future issuance	<u>2,977,964</u>	<u>337,560</u>

## **12. SUBSEQUENT EVENT**

### *COVID-19 Pandemic*

On January 30, 2020, the World Health Organization (“WHO”) announced a global health emergency because of a new strain of coronavirus originating in Wuhan, China (“COVID-19”) and the risks to the international community as the virus spreads globally beyond its point of origin. In March 2020, the WHO classified the COVID-19 outbreak as a pandemic, based on the rapid increase in exposure globally.

The full impact of the COVID-19 outbreak continues to evolve as of the date of this report. As such, it is uncertain as to the full magnitude that the pandemic will have on the Company’s financial condition, liquidity, and future results of operations. Management is actively monitoring the impact of the global situation on the Company’s financial condition, liquidity, operations, suppliers, industry, and workforce. Given the daily evolution of the COVID-19 outbreak and the global responses to curb its spread, the Company is not able to estimate the effects of the COVID-19 outbreak on its results of operations, financial condition, or liquidity for future periods.

#### *CARES Act Loan*

The Coronavirus Aid, Relief, and Economic Security Act (“CARES Act”) was enacted on March 27, 2020 to provide relief from the economic impacts of COVID-19. On April 19, 2020, the Company received \$333 in loan proceeds from the Paycheck Protection Program (the “PPP”), established pursuant to the CARES Act and administered by the U.S. Small Business Administration (“SBA”). The unsecured loan (the “PPP Loan”) is evidenced by a promissory note of the Company dated April 19, 2020 (the “Note”) in the principal amount of \$333, issued to Citizens Bank N.A. (the “Bank”), the lender.

Under the terms of the Note and the PPP Loan, interest will accrue on the outstanding principal at the rate of 1.0% per annum. The term of the Note is two years, though it may be payable sooner in connection with an event of default under the Note. To the extent the loan amount is not forgiven under the PPP, the Company is obligated to make equal monthly payments of principal and interest, beginning six months from the date of the Note, until the maturity date.

The CARES Act and the PPP provide a mechanism for forgiveness of up to the full amount borrowed. Under the PPP, the Company may apply for and be granted forgiveness for all or part of the PPP Loan. The amount of loan proceeds eligible for forgiveness is based on a formula that takes into account a number of factors, including the amount of loan proceeds used by the Company during the eight-week period after the loan origination for certain purposes including payroll costs, rent payments on certain leases, and certain qualified utility payments, provided that at least 75% of the loan amount is used for eligible payroll costs; maintaining or rehiring employees and maintaining salaries at certain levels; and other factors. Subject to the other requirements and limitations on loan forgiveness, only loan proceeds spent on payroll and other eligible costs during the covered eight-week period will qualify for forgiveness. The Company intends to use the entire PPP Loan amount for qualifying expenses, though no assurance is provided that the Company will obtain forgiveness of the PPP Loan in whole or in part.

The Note may be prepaid in part or in full, at any time, without penalty. The Note provides for certain customary events of default, including, but not limited to, failing to make a payment when due under the Note, failure to take actions required by the Note, the Company defaulting under certain agreements in favor of any third party, making false statements, the Company’s insolvency, and the commencement of creditor or forfeiture proceedings against the Company. Upon the occurrence of an event of default, the Bank has customary remedies and may, among other things, require immediate payment of all amounts owed under the Note, collect all amounts owing from the Company, and file suit and obtain judgment against the Company.

## 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, 2019 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 uses its "Trait Factory" and the Camelina oilseed "Fast Field Testing" system to develop high value seed traits for the agriculture and food industries. Our goal is to efficiently develop superior gene traits for the major crops including corn, soybean, canola, and other crops to enable step-change increases in crop yield of at least 10-20 percent. Our "Trait Factory" encompasses discovery of gene targets using our Gene Ranking Artificial Intelligence Network ("GRAIN") big data mining platform, deployment of trait gene targets in the oilseed Camelina and generation of field performance data. The "Trait Factory" enables two complementary commercial opportunities with different paths to market. The first is trait licensing to the major seed companies for corn, soybean, canola and other crops. Data from our trait field testing in Camelina has enabled Yield10 to establish research license agreements with leading seed companies. These companies are progressing the development of Yield10 traits in soybean, forage sorghum, and potato, respectively. The second commercial opportunity is to improve the performance and value of Camelina as a platform to develop a commercial crop product business producing nutritional oils and PHA biomaterials. Using this approach, Yield10 can leverage the resources of the major seed companies to efficiently develop superior gene traits for the major crops and focus internal resources on trait gene discovery and the commercial development of Camelina products. Yield10 Bioscience is headquartered in Woburn, Massachusetts and has an Oilseed Center of Excellence in Saskatoon, Saskatchewan, Canada.

As of March 31, 2020, we held unrestricted cash, cash equivalents and short-term investments of \$9,770. 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 into the second quarter of 2021. Our ability to continue operations after our current cash resources are exhausted depends on our ability to obtain additional financing through, among other sources, public or private equity financing, secured or unsecured debt financing, equity or debt bridge financing, additional government research grants or collaborative arrangements with third parties, as to which no assurances can be given. We do not know whether additional

financing will be available on terms favorable or acceptable to us when needed, if at all. If adequate additional funds are not available when required, 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. We have determined, based on our cash forecast, that our present capital resources will likely not be sufficient to fund our planned operations for the twelve months from the date that these interim financial statements are filed, which raises substantial doubt about our ability to continue as a going concern.

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

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 will be awarded on an annual basis with the first year commencing September 15, 2017. Although our funding under this sub-award has been appropriated through September 2020 for \$1,698, we anticipate that each additional option year will be awarded annually to Yield10 through September 14, 2022 for total sub-award funding of \$2,957, provided the U.S. Congress continues to appropriate funds for the program, we are able to make progress towards meeting grant objectives and we remain in compliance with other terms and conditions of the sub-award.

As of March 31, 2020, proceeds of \$294 remain to be recognized 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.

<u>Program Title</u>	<u>Funding Agency</u>	<u>Total Government Funded Appropriations</u>	<u>Total revenue recognized through March 31, 2020</u>	<u>Remaining amount to be recognized as of March 31, 2020</u>	<u>Contract/Grant Expiration</u>
Subcontract from Michigan State University project funded by DOE entitled "A Systems Approach to Increasing Carbon Flux to Seed Oil"	Department of Energy	\$ 1,698	\$ 1,404	\$ 294	September 2020

## 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, 2020, are consistent with those discussed in our Annual Report on Form 10-K for the year ended December 31, 2019, 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, 2020 and 2019

#### Revenue

	Three Months Ended March 31,		Change
	2020	2019	
Grant revenue	\$ 179	\$ 124	\$ 55

Grant revenue was \$179 and \$124 for the three months ended March 31, 2020 and March 31, 2019, respectively. Grant revenue for each of these periods was derived solely from the Company's sub-award with MSU.

We anticipate that MSU grant revenue will decrease approximately 20 percent over the next twelve months based on annual budget appropriations awarded under the grant. Our forecast related to grant revenue is subject to change, should we apply for, and receive, new grants during 2020, 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
	2020	2019	
Research and development expenses	\$ 1,460	\$ 1,223	\$ 237
General and administrative expenses	1,387	1,186	201
Total expenses	\$ 2,847	\$ 2,409	\$ 438

#### *Research and Development Expenses*

Research and development expenses during the three months ended March 31, 2020 and March 31, 2019 were \$1,460 and \$1,223, respectively. The 19 percent increase of \$237 is primarily due to a loss on disposal of fixed assets and increases in compensation and benefit expenses. In November 2019, we entered into a modification agreement to our Woburn lease in which we permanently returned 7,409 square feet of underutilized space to the landlord for the remaining term of the lease. During the three months ended March 31, 2020, we wrote off \$141 in leasehold improvements and office furniture in connection with the research and development portion of the returned space. Compensation and benefits increased by \$99 from \$682 during the three months ended March 31, 2019 to \$781 during the three months ended March 31, 2020, primarily as a result of annual merit increases that became effective on January 1, 2020, and the Company's proportional accrual for 2020 estimated performance bonuses expected to be paid in early 2021. We did not accrue for 2019 employee bonuses during the three months ended March 31, 2019.

Based on our current financial forecasts, we expect research and development expenses will continue to increase during 2020 as we add research personnel and increase crop trial and third-party research costs to support our strategic objectives. Our forecasts related to research and development expenses are subject to significant change as events, including the potential impact of the COVID-19 pandemic, and new opportunities occur during 2020 that could result in modifications to our business plans.

#### *General and Administrative Expenses*

General and administrative expenses for the three months ended March 31, 2020 and March 31, 2019 increased by \$201 from \$1,186 to \$1,387. The 17 percent increase is primarily due to an increase in compensation and benefits of \$57, as a result of annual merit increases and estimated bonus expenses, and an increase in professional fees of \$140 related to legal work performed in connection with the Company's securities filings and technical accounting support. We did not accrue for 2019 employee bonuses during the three months ended March 31, 2019.

We expect our general and administrative expenses during 2020 will remain at a level consistent, on an annual basis, with 2019. Our forecasts related to general and administrative expenses are subject to significant change as events, including the potential impact of the COVID-19 pandemic, and new opportunities occur during 2020 that could result in modifications to our business plans.

## Other Income (Expense), Net

	Three Months Ended		Change
	March 31,		
	2020	2019	
Change in fair value of warrants	\$ (957)	\$ —	\$ (957)
Interest income	37	27	10
Other income (expense), net	(4)	(2)	(2)
Total other income (expense), net	<u>\$ (924)</u>	<u>\$ 25</u>	<u>\$ (949)</u>

### *Change in Fair Value of Warrants*

On November 19, 2019, we closed on concurrent securities offerings that included a total of 2,875,000 warrants that received liability classification on their date of issuance. In accordance with applicable accounting guidance, the fair value of the warrants was recalculated as of the Company's December 31, 2019 fiscal year-end balance sheet date and again on January 15, 2020, in connection with the Company's filing of a Charter Amendment to effect a 1-for-40 reverse stock split. 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. During the three months ended March 31, 2020, the Company recorded a loss from the change in fair value of the warrants of \$957 as a result of the January 2020 revaluation. See Note 11 - Capital Stock and Warrants, in the accompanying condensed consolidated financial statements.

### *Interest Income*

Interest income for the three months ended March 31, 2020 and March 31, 2019 was derived from investment income earned from the Company's cash equivalents and short-term investments.

## Liquidity and Capital Resources

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

Since our inception, we have incurred significant expenses related to our research, development and commercialization efforts. Except for 2012, when we recognized \$38,885 of deferred revenue from a terminated joint venture, we have recorded losses since our initial founding, including the three months ended March 31, 2020. As of March 31, 2020, we had an accumulated deficit of \$368,494. Our total unrestricted cash and cash equivalents as of March 31, 2020, were \$9,770 as compared to cash, cash equivalents and short-term investments of \$11,117 at December 31, 2019. As of March 31, 2020, we had no outstanding debt.

Our cash and cash equivalents are held primarily for working capital purposes. As of March 31, 2020, we had restricted cash of \$254. Restricted cash consists of \$229 held in connection with the lease agreement for our Woburn, Massachusetts facility and \$25 held in connection with our corporate credit card program.

Investments are made in accordance with our corporate investment policy, as approved by our Board of Directors. The primary objective of this policy is to preserve principal, and investments are limited to high quality corporate debt, U.S. Treasury bills and notes, money market funds, bank debt obligations, municipal debt obligations and asset-backed securities. The policy establishes maturity limits, concentration limits, and liquidity requirements. As of March 31, 2020, we were in compliance with this policy.

We currently anticipate \$9,000 - \$9,500 of cash usage during 2020 to fund our operations and to make capital purchases to support our research. We estimate that our current cash resources will be sufficient to fund operations and meet our obligations, when due, into the second quarter of 2021. This forecast of cash resources is forward-looking information that involves risks and uncertainties, and the actual amount of expenses could vary materially and adversely as a result of a number of factors. We follow the guidance of 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. Our ability to continue operations after its current cash resources are exhausted depends on our ability to obtain additional financing through, among other sources, public or private equity financing, secured or unsecured debt financing, equity or debt bridge financing, additional government research grants or collaborative arrangements with third parties, as to which no assurances can be given. We do not know whether additional financing will be available on terms favorable or acceptable to us when needed, if at all. If adequate additional funds are not available when required, 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. We have determined, based on our cash forecast, that our present capital resources will likely not be sufficient to fund our planned operations for the twelve months from the date that these interim financial statements are filed, which raises substantial doubt about our ability to continue as a going concern.

On April 1, 2020, we filed a shelf registration statement on Form S-3 (File No. 333-237539) with the SEC, which was declared effective on April 10, 2020 (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 \$25.0 million of our common stock, preferred stock, warrants and subscription rights, which securities may be sold either individually or in units.

The Coronavirus Aid, Relief, and Economic Security Act ("CARES Act") was enacted on March 27, 2020 to provide relief from the economic impacts of COVID-19. On April 19, 2020, we received \$333 in loan proceeds from the Paycheck Protection Program, established pursuant to the CARES Act and administered by the U.S. Small Business Administration. The unsecured loan is evidenced by a promissory note dated April 19, 2020 in the principal amount of \$333, issued to Citizens Bank N.A., the lender. Under the terms of the promissory note and the loan, interest will accrue on the outstanding principal at the rate of 1.0% per annum. The term of the promissory note is two years, though it may be payable sooner in connection with an event of default. We may apply for and be granted forgiveness for all or part of the loan. The amount of loan proceeds eligible for forgiveness is based on a formula that takes into account a number of factors, including the amount of loan proceeds used by us during the eight-week period after the loan origination for certain purposes including payroll costs, rent payments on certain leases, and certain qualified utility payments, provided that at least 75% of the loan amount is used for eligible payroll costs; maintaining or rehiring employees and maintaining salaries at certain levels; and other factors. To the extent the loan amount is not forgiven, we are obligated to make equal monthly payments of principal and interest, beginning six months from the date of the promissory note, until the maturity date. We intend to use the entire loan amount for qualifying expenses, though no assurance is provided that we will obtain forgiveness of the loan in whole or in part.

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, 2020 was \$2,288, compared to net cash used for operating activities during the three months ended March 31, 2019 of \$2,296. Net cash used for operations during the three months ended March 31, 2020 primarily reflects the greater net loss of \$3,600 and cash payments made to reduce the Company's real estate 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. The net cash usage for operating activities during the three months ended March 31, 2019 of \$2,296 was primarily the result of the Company's net loss of \$2,260 and payments to reduce lease liabilities of \$198, partially offset by non-cash stock compensation of \$162 and non-cash lease expense of \$147.

Net cash of \$215 was provided by investing activities during the three months ended March 31, 2020 as a result of \$750 of short-term investments reaching their maturity dates and converting to cash. The Company also purchased \$503 of new short-term investments during the three-month period.

In November 2019, in connection with the Company's public securities offering that closed on November 19, 2019, the Company issued Series A Warrants and Series B Warrants (together, the "Warrants") to purchase shares of the Company's common stock. The Warrants were issued, and are held, in book-entry form through The Depository Trust & Clearing Corporation ("DTCC"). On January 15, 2020, the Company completed a 1-for-40 reverse stock split of its common stock (the "Reverse Stock Split"). Pursuant to the terms of the Warrants, in the event of a reverse stock split, the exercise price of each Warrant and the number of shares issuable upon exercise of each Warrant are required to be proportionately adjusted in accordance with the ratio of the reverse stock split. On May 1, 2020, DTCC and American Stock Transfer & Trust Company, LLC, as the Company's warrant agent (the "Warrant Agent") notified the Company that, following the Reverse Stock Split, the exercise price of each Warrant had been proportionately adjusted in accordance with the Reverse Stock Split, but the number of

shares issuable upon exercise of each Warrant had not been proportionately adjusted in the records of DTCC. As a result, it appears probable that certain investors who exercised Warrants following the Reverse Stock Split, during the month of February 2020, were inadvertently issued an incorrect number of shares of the Company's common stock upon the exercise of their Warrants. The Company believes that up to 88,762 shares of the Company's common stock may have been incorrectly issued in connection with such Warrant exercises, and up to \$710 in warrant exercise proceeds may have been incorrectly collected. The Company is in the process of verifying and evaluating the information received from DTCC and the Warrant Agent regarding this matter, and as such the number of shares and amount of proceeds subject to the error may change. The Company is working with DTCC and the Warrant Agent to return any excess proceeds that were collected, and to cause to be returned to it any excess number of shares of the Company's common stock that were issued in connection with these Warrant exercises, as soon as possible. The disclosure set forth in this Quarterly Report on Form 10-Q, including in the condensed consolidated financial statements and in Management's Discussion and Analysis of Financial Condition and Results of Operations, includes \$710 within accrued expenses for the cash proceeds expected to be returned to former holders of Warrants. The disclosure set forth in this Quarterly Report on Form 10-Q may change based on subsequent information obtained by the Company from DTCC, the Warrant Agent, or the former holders of Warrants.

#### **Off-Balance Sheet Arrangements**

As of March 31, 2020, we had no off-balance sheet arrangements as defined in Item 303(a)(4) of the SEC's Regulation S-K.

#### **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, 2020. 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, 2020 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.

The following risk factor disclosure should be read in conjunction with our risk factors as described in Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2019. Our business is subject to numerous risks. We caution you that the important factors annotated within our risk factors, among others, could cause our actual results to differ materially from those expressed in forward-looking statements made by us or on our behalf in filings with the SEC, press releases, communications with investors and oral statements. Any or all of our forward-looking statements in this Quarterly Report on Form 10-Q and any other public statements we make may turn out to be wrong. They can be affected by inaccurate assumptions we might make or by known or unknown risks and uncertainties. Many factors discussed in our risk factors will be important in determining future results. Consequently, no forward-looking statement can be guaranteed. Actual future results may differ materially from those anticipated in forward-looking statements. We undertake no obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, other than as required under the federal securities laws. You are advised, however, to consult any further disclosure we make in our reports filed with the SEC.

***Our financial condition, research and development efforts, and results of operations could be further adversely affected by the ongoing coronavirus outbreak.***

Any outbreak of contagious diseases, such as COVID-19, or other adverse public health developments, could have a material and adverse effect on our business operations. In response to the ongoing coronavirus pandemic, we have modified our business practices, including in response to legislation, executive orders and guidance from government entities and healthcare authorities. These directives include the temporary closing of businesses deemed “non-essential,” travel bans and restrictions, social distancing and quarantines. Since March 2020, we have limited employee, researcher and supplier access to the research facility we share with the National Research Council of Canada and our other leased facilities located in Saskatchewan, Canada. Our Canadian operations have not yet been significantly impacted by the coronavirus pandemic. Our research and development facility in Woburn has been closed since March 2020. To date, we have been able to move forward with planning and operational steps required to initiate our planned 2020 field trials in Canada and the United States. It is possible, however, that current and potential future closures of our research facilities, if they continue for an extended time period, could adversely impact our anticipated time frames for completing field trials and other work we have planned to accomplish during 2020.

Additional adverse effects of the coronavirus pandemic could include quarantines, disruptions of or restrictions on our ability and/or the ability of our collaborators’ personnel to travel or conduct normal business activities, as well as additional closures of our facilities or the facilities of our collaborators for an indefinite period of time.

As COVID-19 continues to affect individuals and businesses around the globe, we will likely experience disruptions that could severely impact our business, research and field testing trials, including:

- interruption of field testing activities due to quarantines or other limitations on travel imposed or recommended by federal or state governments, employers and others;
- limitations on employee resources that would otherwise be focused on the conduct of our research and field testing, including because of sickness of employees or their families or requirements imposed on employees to avoid contact with large groups of people;
- delays in receiving approval from regulatory authorities related to our seed traits;
- delays in field testing sites receiving the supplies and materials needed to conduct our trials;
- interruption in global shipping that may affect the transport of materials needed for our research; and
- limitations on government and academic grants that support our research programs.

Additionally, our results of operations could be adversely affected to the extent that COVID-19, or any other epidemic, harms our business or the economy in general either domestically or in any other region in which we do business. The extent to

which COVID-19 affects our operations will depend on future developments, which are highly uncertain and cannot be predicted with confidence, including the duration of the outbreak, new information that may emerge concerning the severity of COVID-19 and the actions to contain COVID-19 or treat its impact, among others, which could have an adverse effect on our business and financial condition. Current predictions suggest that the impact of sustained business closures and quarantines resulting from the coronavirus on the global economy will be severe, and this may have a material adverse effect on our business and our ability to secure funding. As we continue to actively monitor the situation, we may take further actions that affect our operations.

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

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

On January 9, 2020, we issued 3,715 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, 2020, 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.**

- [10.1](#) Paycheck Protection Note with Citizens Bank N.A. dated April 19, 2020 (filed herewith).
- [31.1](#) Certification Pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934 of the Principal Executive Officer (filed herewith).
- [31.2](#) Certification Pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934 of the Principal Financial Officer (filed herewith).
- [32.1](#) Section 1350 Certification (furnished herewith).
- 101.1 The following financial information from the Yield10 Bioscience, Inc. Quarterly Report on Form 10-Q for the quarter ended March 31, 2020 formatted in XBRL: (i) Condensed Consolidated Balance Sheets, March 31, 2020 and December 31, 2019; (ii) Condensed Consolidated Statements of Operations, Three Months Ended March 31, 2020 and 2019; (iii) Condensed Consolidated Statements of Comprehensive Loss, Three Months Ended March 31, 2020 and 2019; (iv) Condensed Consolidated Statements of Cash Flows, Three Months Ended March 31, 2020 and 2019; (v) Condensed Consolidated Statements of Series B Convertible Preferred Stock and Stockholders' (Deficit) Equity, Three Months Ended March 31, 2020 and 2019; 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 14, 2020

By: /s/ OLIVER PEOPLES

Oliver Peoples

*President and Chief Executive Officer*

*(Principal Executive Officer)*

May 14, 2020

By: /s/ CHARLES B. HAASER

Charles B. Haaser

*Chief Accounting Officer*

*(Principal Financial and Accounting Officer)*

U.S. SMALL BUSINESS ADMINISTRATION PAYCHECK PROTECTION NOTE

SBA Loan #	1296737200
SBA Loan Name	Yield10 Bioscience, Inc.
Date	4/17/2020
Loan Amount	\$332,800.00
Fixed Interest Rate	1.0%
Borrower	YIELD10 BIOSCIENCE, INC.
Lender	Citizens Bank N.A. 1 Citizens Plaza Providence, RI 02903

1. PROMISE TO PAY:

In return for the Loan, Borrower promises to pay to the order of Lender the amount of 332,800.00 Dollars, interest on the unpaid principal balance, and all other amounts required by this Note.

2. DEFINITIONS:

“Forgiveness Period” means the 8-week period beginning on the date of first disbursement of the Loan.

“Loan” means the loan evidenced by this Note.

“Loan Documents” means the documents related to this loan signed by Borrower.

“Program” means the Paycheck Protection Program created by the Coronavirus Aid, Relief, and Economic Security Act, also known as the “CARES Act” (P.L. 116-136).

“SBA” means the Small Business Administration, an Agency of the United States of America.

3. LOAN FORGIVENESS; PAYMENT TERMS:

A. *Loan Forgiveness:* Borrower may apply to Lender for forgiveness of the amount due on the Loan in an amount equal to the sum of the following costs incurred by Borrower during the 8-week period beginning on the date of first disbursement of the Loan:

- (i) Payroll costs
- (ii) Any payment of interest on a covered mortgage obligation (which shall not include any prepayment of or payment of principal on a covered mortgage obligation)
- (iii) Any payment on a covered rent obligation
- (iv) Any covered utility payment

The amount of loan forgiveness shall be calculated (and may be reduced) in accordance with the requirements of the Program, including the provisions of Section 1106 of the CARES Act. Not more than 25% of the amount

forgiven can be attributable to non-payroll costs. If Borrower has received an SBA Economic Injury Disaster Loan (“EIDL”) during the period between January 1, 2020 and April 4, 2020 and used the proceeds of that EIDL for payroll costs, that amount shall be subtracted from the loan forgiveness amount.

Forgiveness will be subject to Borrower’s submission to Lender of information and documentation as required by the SBA and Lender.

- B. *Submission of Information and Documents:* Forgiveness will be subject to Borrower’s submission to Lender of information and documentation as required by the SBA and Lender. Not before July 1, 2020 and by August 15, 2020, Borrower shall provide Lender with information, in form and substance acceptable to Lender, specifying the amount of forgiveness Borrower requests, together with all documentation required by the CARES Act, the SBA and/or Lender to evidence and/or verify such information. Required information shall include, without limitation:
- (i) the total dollar amount of payroll costs during the Forgiveness Period and the dollar amounts of covered mortgage interest payments, covered rent payments and covered utilities for the Forgiveness Period to the extent Borrower seeks forgiveness for these costs.
  - (ii) the average number of full-time equivalent employees of Borrower per month during (a) the period from February 15, 2020 through June 30, 2020 (the “Covered Period”); (b) the same period in 2019, and (c) if the average number of full-time equivalent employees is lower than the average number for the period described in subsection (ii)(b) above, the period from January 1, 2020 through February 29, 2020;
  - (iii) the number of full-time equivalent employees of Borrower as of February 15, 2020, April 26, 2020 and June 30, 2020;
  - (iv) the total amount of salary and wages during the Covered Period and during the fourth calendar quarter of 2019 of each employee who had the amount or rate of such salary and wages reduced by more than 25% during the Covered Period from the amount or rate in the fourth quarter of 2019 (each, a “Lowered Employee”);
  - (v) the rate of salary and wages of each Lowered Employee as of February 15, 2020, April 26, 2020 and June 30, 2020; and
  - (vi) such further information and documents as Lender or the SBA shall require.
- C. *Initial Deferment Period:* No payments are due on the Loan for 6 months from the date of first disbursement of the Loan. Interest will continue to accrue during the deferment period.
- D. *Maturity.* This Note will mature two years from date of first disbursement of the Loan.
- E. *Payments from End of Deferment Period through Maturity Date:* To the extent the Loan is not forgiven during the deferment period or thereafter, the outstanding balance of the Loan, and interest thereon, shall be repaid in eighteen substantially equal monthly payments of principal and interest, commencing on the first business day after the end of the deferment period.
- F. *Payment Authorization:* Borrower hereby authorizes Lender to initiate payments from Borrower’s bank account, by wire or ACH transfer, for each monthly or other payment required hereunder.
- In the event any such payment is unsuccessful, Borrower shall remain liable for such payment and shall take all steps required to make such payment.
- G. *Interest Computation; Repayment Terms:* The interest rate on this Note is one percent per year. The interest rate is fixed and will not be changed during the life of the Loan. Interest will be calculated based upon actual days over a 365-day year.
- H. *Payment Allocation:* Lender will apply each installment payment first to pay interest accrued to the day Lender received the payment, then to bring principal current, and will apply any remaining balance to reduce principal.
- I. *Loan Prepayment:* Notwithstanding any provision in this Note to the contrary, Borrower may prepay this Note at any time without penalty. Borrower may prepay 20 percent or less of the unpaid principal balance at any time without notice. If Borrower prepays more than 20 percent and the Loan has been sold on the secondary market,

Borrower must: (i) give Lender written notice; (ii) pay all accrued interest; and (iii) if the prepayment is received less than 21 days from the date Lender received the notice, pay an amount equal to 21 days interest from the date Lender received the notice, less any interest accrued during the 21 days and paid under (ii) of this paragraph. If Borrower does not prepay within 30 days from the date Lender received the notice, Borrower must give Lender a new notice.

4. NON-RECOURSE: Lender and SBA shall have no recourse against any individual shareholder, member or partner of Borrower for non-payment of the loan, except to the extent that such shareholder, member or partner uses the loan proceeds for an unauthorized purpose.

5. USE OF PROCEEDS:

Borrower represents and warrants that all proceeds of the Loan will be used for the following eligible business purposes, as required by the CARES Act: (I) payroll costs; (II) costs related to the continuation of group health care benefits during periods of paid sick, medical, or family leave, and insurance premiums; (III) employee salaries, commissions, or similar compensations; (IV) payments of interest on any mortgage obligation (which shall not include any prepayment of or payment of principal on a mortgage obligation); (V) rent (including rent under a lease agreement); (VI) utilities; and (VII) interest on any other debt obligations that were incurred before February 15, 2020, provided that not less than 75% of expended Loan proceeds shall be devoted to items (I)-(III) above.

6. DEFAULT:

Borrower is in default under this Note if Borrower does not make a payment when due under this Note, or if Borrower:

- A. Fails to do anything required by this Note and other Loan Documents;
- B. Does not disclose, or anyone acting on its behalf does not disclose, any material fact to Lender or SBA;
- C. Makes, or anyone acting on its behalf makes, a materially false or misleading representation to Lender or SBA;
- D. Reorganizes, merges, consolidates, or otherwise changes ownership or business structure without Lender's prior written consent;
- E. Does any of the following after Lender makes a determination (an "Adverse Forgiveness Determination") that the Loan is not entitled to full forgiveness (or in such other period as specified below):
  - (i) Defaults on any other loan with Lender;
  - (ii) Defaults on any loan or agreement with another creditor, if Lender believes the default may materially affect Borrower's ability to pay this Note;
  - (iii) Fails to pay any taxes when due;
  - (iv) Becomes the subject of a proceeding under any bankruptcy or insolvency law;
  - (v) Has a receiver or liquidator appointed for any part of their business or property;
  - (vi) Makes an assignment for the benefit of creditors;
  - (vii) Has any adverse change in financial condition or business operation from the date of this Note that continues after the Adverse Forgiveness Determination and that Lender believes may materially affect Borrower's ability to pay this Note; or
  - (viii) Becomes the subject of a civil or criminal action from the date of this Note that continues after the Adverse Forgiveness Determination and that Lender believes may materially affect Borrower's ability to pay this Note.

7. LENDER'S RIGHTS IF THERE IS A DEFAULT:

Upon a default by Borrower, without notice or demand and without giving up any of its rights, Lender may:

- A. Require immediate payment of all amounts owing under this Note; or

B. File suit and obtain judgment.

8. LENDER'S GENERAL POWERS:

Without notice and without Borrower's consent, Lender may:

- A. Incur expenses to collect amounts due under this Note and enforce the terms of this Note or any other Loan Document. Among other things, the expenses may include reasonable attorney's fees and costs. If Lender incurs such expenses, it may demand immediate repayment from Borrower or add the expenses to the principal balance; and
- B. Take any action necessary to collect amounts owing on this Note.

9. WHEN FEDERAL LAW APPLIES:

When SBA is the holder, this Note will be interpreted and enforced under federal law, including SBA regulations. Lender or SBA may use state or local procedures for filing papers, recording documents, giving notice, foreclosing liens, and other purposes. By using such procedures, SBA does not waive any federal immunity from state or local control, penalty, tax, or liability. As to this Note, Borrower may not claim or assert against SBA any local or state law to deny any obligation, defeat any claim of SBA, or preempt federal law.

10. SUCCESSORS AND ASSIGNS:

Under this Note, Borrower includes the original Borrower's successors, and Lender includes the original Lender's successors and assigns.

11. GENERAL PROVISIONS:

- A. All individuals and entities signing this Note are jointly and severally liable.
- B. Borrower waives all suretyship defenses.
- C. Borrower must sign all documents necessary at any time to comply with the Loan Documents.
- D. Lender may exercise any of its rights separately or together, as many times and in any order it chooses. Lender may delay or forgo enforcing any of its rights without giving up any of them.
- E. Borrower may not use an oral statement of Lender or SBA to contradict or alter the written terms of this Note.
- F. If any part of this Note is unenforceable, all other parts remain in effect.
- G. To the extent allowed by law, Borrower waives all demands and notices in connection with this Note, including presentment, demand, protest, and notice of dishonor. Borrower also waives any defenses based upon any claim that Lender did not obtain any guarantee or collateral.

12. STATE-SPECIFIC PROVISIONS:

13. ARBITRATION CLAUSE:

Borrower agrees to the Arbitration Clause attached as Exhibit A. Lender also agrees to the Arbitration Clause.

14. BORROWER'S NAME AND SIGNATURE:

By signing below, each individual or entity becomes obligated under this Note as Borrower.

**BORROWER: YIELD10 BIOSCIENCE, INC.**

/s/ Lynne Brum

LYNNE BRUM, Authorized Signer

## 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 14, 2020

/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 14, 2020

/s/ CHARLES B. HAASER

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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, 2020 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 14, 2020

/s/ OLIVER PEOPLES

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Oliver Peoples

*President and Chief Executive Officer*

*(Principal Executive Officer)*

Dated: May 14, 2020

/s/ CHARLES B. HAASER

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Charles B. Haaser

*Chief Accounting Officer*

*(Principal Financial and Accounting Officer)*