# UNITED STATES
# SECURITIES AND EXCHANGE COMMISSION
**Washington, D.C. 20549**

# FORM 10-Q

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

**For the quarterly period ended June 30, 2023**

**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** | **04-3158289** |
| (State or other jurisdiction of incorporation or organization) | (I.R.S. Employer Identification No.) |
| **19 Presidential Way Woburn, MA** | **01801** |
| (Address of principal executive offices) | (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 o

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 o

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 | o | Accelerated filer | o |
| Non-accelerated filer | ☒ | Smaller reporting company | ☒ |
| | | Emerging growth company | o |

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

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

The number of shares outstanding of the registrant’s common stock as of August 11, 2023 was 6,114,002
.

**Yield10 Bioscience, Inc.**
**Form 10-Q**
**For the Quarter Ended June 30, 2023**

**Table of Contents**

## PART I. FINANCIAL INFORMATION

## ITEM 1. CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

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

**(in thousands, except share and per share data)**

| | June 30, 2023 | December 31, 2022 |
|---|---|---|
| **Assets** | | |
| Current Assets: | | |
| Cash and cash equivalents | $ 2,336 | $ 2,356 |
| Short-term investments | — | 1,991 |
| Unbilled receivables | — | 30 |
| Prepaid expenses and other current assets | 689 | 641 |
| Total current assets | 3,025 | 5,018 |
| Restricted cash | 264 | 264 |
| Property and equipment, net | 663 | 775 |
| Right-of-use assets | 1,851 | 1,961 |
| Other assets | 67 | 67 |
| Total assets | $ 5,870 | $ 8,085 |
| | | |
| **Liabilities and Stockholders' Equity** | | |
| Current Liabilities: | | |
| Accounts payable | $ 467 | $ 109 |
| Accrued expenses | 1,375 | 926 |
| Current portion of lease liabilities | 628 | 575 |
| Total current liabilities | 2,470 | 1,610 |
| Lease liabilities, net of current portion | 1,842 | 2,075 |
| Convertible note payable, net of issuance costs (Note 9) | 971 | — |
| Total liabilities | 5,283 | 3,685 |
| Commitments and contingencies (Note 10) | | |
| Stockholders' Equity: | | |
| Preferred stock ($0.01 par value per share); 5,000,000 shares authorized; no shares issued or outstanding | — | — |
| Common stock ($0.01 par value per share); 60,000,000 shares authorized at June 30, 2023 and December 31, 2022; 6,100,263 and 4,944,202 shares issued and outstanding at June 30, 2023 and December 31, 2022, respectively | 61 | 49 |
| Additional paid-in capital | 407,930 | 404,277 |
| Accumulated other comprehensive loss | (244) | (229) |
| Accumulated deficit | (407,160) | (399,697) |
| Total stockholders' equity | 587 | 4,400 |
| Total liabilities and stockholders' equity | $ 5,870 | $ 8,085 |

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

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

| | Three Months Ended June 30, | | Six Months Ended June 30, | |
|---|---|---|---|---|
| | **2023** | **2022** | **2023** | **2022** |
| Revenue: | | | | |
| Grant revenue | $ — | $ 103 | $ 60 | $ 252 |
| Total revenue | — | 103 | 60 | 252 |
| Expenses: | | | | |
| Research and development | 1,997 | 2,016 | 4,159 | 3,779 |
| General and administrative | 1,670 | 1,523 | 3,368 | 3,230 |
| Total expenses | 3,667 | 3,539 | 7,527 | 7,009 |
| Loss from operations | (3,667) | (3,436) | (7,467) | (6,757) |
| Other income (expense): | | | | |
| Other income (expense), net | (14) | 2 | 4 | 1 |
| Total other income (expense) | (14) | 2 | 4 | 1 |
| Loss from operations before income taxes | (3,681) | (3,434) | (7,463) | (6,756) |
| Income tax provision | — | (9) | — | (18) |
| Net loss | $ (3,681) | $ (3,443) | $ (7,463) | $ (6,774) |
| Basic and diluted net loss per share | $ (0.64) | $ (0.70) | $ (1.39) | $ (1.38) |
| Number of shares used in per share calculations: | | | | |
| Basic and diluted | 5,729,012 | 4,900,298 | 5,366,324 | 4,894,638 |

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

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

| | Three Months Ended June 30, | | Six Months Ended June 30, | |
|---|---|---|---|---|
| | **2023** | **2022** | **2023** | **2022** |
| Net loss: | $ (3,681) | $ (3,443) | $ (7,463) | $ (6,774) |
| Other comprehensive loss | | | | |
| Change in unrealized loss on investments | — | (1) | 1 | (22) |
| Change in foreign currency translation adjustment, net of income tax | (12) | (26) | (16) | (23) |
| Total other comprehensive loss | (12) | (27) | (15) | (45) |
| Comprehensive loss | $ (3,693) | $ (3,470) | $ (7,478) | $ (6,819) |

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

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

| | Six Months Ended June 30, | |
|---|---|---|
| | **2023** | **2022** |
| **Cash flows from operating activities** | | |
| Net loss | $ (7,463) | $ (6,774) |
| Adjustments to reconcile net loss to cash used in operating activities: | | |
| Depreciation and amortization | 145 | 128 |
| Charge for 401(k) company common stock match | 63 | 76 |
| Stock-based compensation | 830 | 1,011 |
| Non-cash lease expense | 110 | 192 |
| Deferred income tax provision | — | 19 |
| Changes in operating assets and liabilities: | | |
| Accounts receivable | — | 129 |
| Unbilled receivables | 30 | 6 |
| Prepaid expenses and other assets | (48) | (37) |
| Accounts payable | 331 | (59) |
| Accrued expenses | 436 | (80) |
| Lease liabilities | (180) | (251) |
| Net cash used in operating activities | (5,746) | (5,640) |
| **Cash flows from investing activities** | | |
| Purchase of property and equipment | (27) | (133) |
| Purchase of investments | — | (710) |
| Proceeds from the maturity of short-term investments | 1,991 | 4,371 |
| Net cash provided by investing activities | 1,964 | 3,528 |
| **Cash flows from financing activities** | | |
| Proceeds from issuance of common stock and warrants in equity offering, net of issuance costs | 2,717 | — |
| Proceeds from At-the-Market offering, net of issuance costs | 103 | — |
| Proceeds for convertible debt note | 1,000 | — |
| Taxes paid on employees' behalf related to vesting of stock awards | (41) | (14) |
| Net cash provided by (used by) financing activities | 3,779 | (14) |
| Effect of exchange rate changes on cash, cash equivalents and restricted cash | (17) | (23) |
| Net decrease in cash, cash equivalents and restricted cash | (20) | (2,149) |
| Cash, cash equivalents and restricted cash at beginning of period | 2,620 | 5,593 |
| Cash, cash equivalents and restricted cash at end of period | $ 2,600 | $ 3,444 |
| **Supplemental disclosure of non-cash information:** | | |
| Right-of-use assets acquired in exchange for lease liabilities | $ 100 | $ — |

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

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

| | Three Months Ended June 30, 2023 | | | | | |
|---|---|---|---|---|---|---|
| | Common Stock | | Additional Paid-In Capital | Accumulated Other Comprehensive Income (Loss) | Accumulated Deficit | Total Stockholders' Equity |
| | Shares | Par Value | | | | |
| **Balance, March 31, 2023** | 5,078,557 | $ 51 | $ 404,803 | $ (232) | $ (403,479) | $ 1,143 |
| Stock-based compensation expense | — | — | 381 | — | — | 381 |
| Issuance of common stock for 401(k) match | 9,438 | — | 26 | — | — | 26 |
| Issuance of common stock and warrants in equity offering, net of issuance costs | 1,006,710 | 10 | 2,707 | — | — | 2,717 |
| Issuance of common stock for director compensation | 5,558 | — | 13 | — | — | 13 |
| Effect of foreign currency translation and unrealized loss on investments | — | — | — | (12) | — | (12) |
| Net loss | — | — | — | — | (3,681) | (3,681) |
| **Balance, June 30, 2023** | 6,100,263 | $ 61 | $ 407,930 | $ (244) | $ (407,160) | $ 587 |

| | Three Months Ended June 30, 2022 | | | | | |
|---|---|---|---|---|---|---|
| | Common Stock | | Additional Paid-In Capital | Accumulated Other Comprehensive Income (Loss) | Accumulated Deficit | Total Stockholders' Equity |
| | Shares | Par Value | | | | |
| **Balance, March 31, 2022** | 4,893,403 | $ 49 | $ 402,817 | $ (193) | $ (389,462) | $ 13,211 |
| Stock-based compensation expense | — | — | 489 | — | — | 489 |
| Issuance of common stock for 401(k) match | 7,843 | — | 41 | — | — | 41 |
| Effect of foreign currency translation and unrealized loss on investments | — | — | — | (27) | — | (27) |
| Net loss | — | — | — | — | (3,443) | (3,443) |
| **Balance, June 30, 2022** | 4,901,246 | $ 49 | $ 403,347 | $ (220) | $ (392,905) | $ 10,271 |

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

| | Six Months Ended June 30, 2023 | | | | | |
|---|---|---|---|---|---|---|
| | Common Stock | | | | | |
| | Shares | Par Value | Additional Paid-In Capital | Accumulated Other Comprehensive Income (Loss) | Accumulated Deficit | Total Stockholders' Equity |
| **Balance, December 31, 2022** | 4,944,202 | $ 49 | $ 404,277 | $ (229) | $ (399,697) | $ 4,400 |
| Stock-based compensation expense | — | — | 805 | — | — | 805 |
| Issuance of common stock for 401(k) match | 27,016 | 1 | 55 | — | — | 56 |
| Issuance of common stock under At-the-Market offering, net of issuance costs | 94,665 | 1 | 102 | — | — | 103 |
| Issuance of common stock for restricted stock units | 17,640 | — | — | — | — | — |
| Taxes paid on employees' behalf related to vesting of stock awards | — | — | (41) | — | — | (41) |
| Issuance of common stock and warrants in equity offering, net of issuance costs | 1,006,710 | 10 | 2,707 | — | — | 2,717 |
| Issuance of common stock for director compensation | 10,030 | — | 25 | — | — | 25 |
| Effect of foreign currency translation and unrealized loss on investments | — | — | — | (15) | — | (15) |
| Net loss | — | — | — | — | (7,463) | (7,463) |
| **Balance, June 30, 2023** | 6,100,263 | $ 61 | $ 407,930 | $ (244) | $ (407,160) | $ 587 |

| | Six Months Ended June 30, 2022 | | | | | |
|---|---|---|---|---|---|---|
| | Common Stock | | | | | |
| | Shares | Par Value | Additional Paid-In Capital | Accumulated Other Comprehensive Income (Loss) | Accumulated Deficit | Total Stockholders' Equity |
| **Balance, December 31, 2021** | 4,881,851 | $ 49 | $ 402,283 | $ (175) | $ (386,131) | $ 16,026 |
| Stock-based compensation expense | — | — | 1,012 | — | — | 1,012 |
| Issuance of common stock for 401(k) match | 12,917 | — | 66 | — | — | 66 |
| Issuance of common stock for restricted stock units | 6,478 | — | — | — | — | — |
| Taxes paid on employees' behalf related to vesting of stock awards | — | — | (14) | — | — | (14) |
| Effect of foreign currency translation and unrealized loss on investments | — | — | — | (45) | — | (45) |
| Net loss | — | — | — | — | (6,774) | (6,774) |
| **Balance, June 30, 2022** | 4,901,246 | $ 49 | $ 403,347 | $ (220) | $ (392,905) | $ 10,271 |

*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**

*(Amounts in thousands, except share and per share amounts)*

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

Yield10 Bioscience, Inc. ("Yield10" or the "Company") is an agricultural bioscience company that is developing the oilseed Camelina sativa ("Camelina") as a platform crop for large scale production of low carbon sustainable seed products to address; 1) petroleum replacement markets with Camelina oil for use as a biofuel feedstock and PHA bioplastics produced in Camelina seed for use as a biodegradable bioplastic; and 2) food and nutrition markets with omega-3 (EPA, DHA+EPA) oils produced in Camelina seed for aquaculture and nutraceuticals, and for protein meal for animal feed markets. The commercial plan is based on developing and releasing a series of proprietary elite Camelina seed varieties incorporating genetic traits from the Company's development pipeline which offer improved on-farm performance that will lead to increased acreage and seed product revenue. Yield10 also plans to create additional value for its stockholders by licensing yield and seed oil traits from the Company's pipeline to large seed companies for commercialization in major food crops, including corn, soybean and canola. Yield10 is headquartered in Woburn, Massachusetts and has an Oilseed Center of Excellence in Saskatoon, Saskatchewan, Canada.

The accompanying condensed consolidated financial statements are presented in U.S. dollars, are unaudited, and have been prepared by Yield10 in accordance with generally accepted accounting principles 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 statement of the financial position as of June 30, 2023 and December 31, 2022, and for the results of operations for the interim periods ended June 30, 2023 and June 30, 2022.

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, 2022, which are contained in the Company’s Annual Report on Form 10-K filed with the SEC on March 14, 2023.

The accompanying condensed consolidated financial statements have been prepared on a basis which assumes that the Company will continue as a going concern and which contemplates the realization of assets and satisfaction of liabilities and commitments in the normal course of business. With the exception of a single year, the Company has recorded losses since its initial founding, including the three months ended June 30, 2023.

As of June 30, 2023, the Company held unrestricted cash and cash equivalents of $2,336. 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 condensed consolidated financial statements are issued. The Company's ability to continue operations after its current cash resources are exhausted depends on its ability to obtain additional financing through, among other sources, public or private equity financing, secured or unsecured debt financing, equity or debt bridge financing, warrant holders' ability and willingness to exercise the Company's outstanding warrants, additional research 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, if at all. If adequate additional funds are not available in the near term, management will be forced to curtail the Company's research efforts, explore strategic alternatives and/or wind down the Company's operations and pursue options for liquidating its remaining assets, including intellectual property and equipment. Based on the Company's current cash forecast, management has determined that the Company's present capital resources will not be sufficient to fund its planned operations for at least one year from when these condensed consolidated financial statements are issued, which raises substantial doubt as to the Company's ability to continue as a going concern. 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.

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 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.

On April 27, 2023, the Company signed a non-binding letter of intent ("LOI") with Marathon Petroleum Corporation ("Marathon") for a potential investment in Yield10 by Marathon and for an offtake agreement for low-carbon intensity Camelina feedstock oil to be used in renewable fuels production. In connection with signing the LOI, the Company sold and issued to MPC Investment LLC ("Purchaser"), an affiliate of Marathon, a senior unsecured convertible note in the original principal amount of $1,000 (the "Convertible Note") which is convertible into shares of the Company's common stock, at maturity, at a conversion price equal to $3.07 per share, subject to any mandatory adjustments and certain conditions and limitations set forth in the Convertible Note. Yield10 sold and issued the Convertible Note pursuant to a securities purchase agreement, dated April 28, 2023, between the Company and the Purchaser and the proceeds of the Convertible Note have been received. The Company will use the net proceeds from the Convertible Note for working capital and general corporate purposes.

On May 5, 2023, the Company raised $3,000 in gross proceeds through the issuance of the Company's common stock and prefunded warrants in a registered direct offering and warrants in a concurrent private placement with investors. Under the terms of the securities purchase agreement, Yield10 agreed to sell 931,600 shares of common stock and 75,110 pre-funded warrants that exercise and converted to common stock shortly after completion of the offering. The Company also agreed to issue unregistered private warrants to purchase 1,006,710 shares of common stock. The combined effective offering price for one share of common stock (or prefunded warrants in lieu thereof) and accompanying warrant was $2.98. The Company received proceeds of $2,717, from the offering, net of $283 in estimated issuance costs, of which $88 remains unpaid and outstanding at June 30, 2023.

## 2. ACCOUNTING POLICIES

### Basis of Presentation and Principles of Consolidation

The accompanying unaudited condensed consolidated financial statements are prepared in accordance with accounting principles generally accepted in the United States of America, including accounting standards set by the Financial Accounting Standards Board ("FASB"). The FASB sets GAAP that the Company follows to ensure its financial condition, results of operations, and cash flows are consistently reported. References to GAAP issued by the FASB in these notes to the unaudited condensed consolidated financial statements are to the ASC. The unaudited condensed consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries. All intercompany transactions were eliminated, including transactions with its subsidiaries, Yield10 Oilseeds Inc. ("YOI") and Yield10 Bioscience Securities Corp.

### 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:

| | June 30, 2023 | December 31, 2022 |
|---|---|---|
| Cash and cash equivalents | $ 2,336 | $ 2,356 |
| Restricted cash | 264 | 264 |
| Total cash, cash equivalents and restricted cash | $ 2,600 | $ 2,620 |

Amounts included in restricted cash represent those required to be set aside by contractual agreement. Restricted cash of $264 at June 30, 2023 and December 31, 2022 consists primarily of funds held in connection with the Company's lease agreement for its Woburn, Massachusetts facility.

**Investments**

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

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

**Use of Estimates**

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of grant revenue and expenses during the reporting periods. Actual results could differ from those estimates.

**Foreign Currency Translation**

The functional currency for YOI is the Canadian dollar. Foreign denominated assets and liabilities of YOI 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 unaudited condensed consolidated balance sheet. When the Company dissolves, sells all or substantially all of the assets of a consolidated foreign subsidiary, the cumulative translation gain or loss of that subsidiary is released from comprehensive income (loss) and included within its unaudited condensed consolidated statement of operations during the fiscal period when the dissolution or sale occurs.

**Comprehensive Loss**

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

**Income Taxes**

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

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

**Concentration of Credit Risk**

Financial instruments that potentially subject the Company to concentrations of credit risk primarily consist of cash, cash equivalents, restricted cash, short-term investments and accounts receivable. 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.

The Company's work in support of a Michigan State University ("MSU") grant from the Department of Energy ("DOE") was completed during the first quarter of 2023, with no further revenue to be recognized. All amounts due from the Company's sub-award have been invoiced and collected. At December 31, 2022, the Company's unbilled receivables of $30 were due from MSU for its support to the DOE grant.

**Fair Value Measurements**

The carrying amounts of the Company's financial instruments as of June 30, 2023 and December 31, 2022, which include cash equivalents, restricted cash, unbilled receivables, accounts payable, and accrued expenses, approximate their fair values due to the short-term nature of these instruments. See Note 5 for further discussion on fair value measurements.

**Segment Information**

The accounting guidance for segment reporting establishes standards for reporting information on operating segments in financial statements. The Company is an agricultural bioscience company operating in one segment, which is the development of improved Camelina plant varieties to produce proprietary products, and to produce other high value genetic traits for the agriculture and food industries. The Company's chief operating decision-maker does not manage any part of the Company separately, and the allocation of resources and assessment of performance are based on the Company's consolidated operating results.

**Property and Equipment**

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

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

**Lease Accounting**

As a lessee, the Company follows the lease accounting guidance codified in ASC 842. A lease is classified as a finance lease if any of five criteria described in the guidance apply to the lease and 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. Under ASC 842, the Company records a lease liability on the commencement date of a lease calculated as the present value of the lease payments, using the interest rate implicit in the lease, or if that rate is not readily determinable, using the Company's incremental borrowing rate. A right-of-use asset equal to the lease liability is also recorded with adjustments made, as necessary, for lease prepayments, lease accruals, initial direct costs and lessor lease incentives that may be present within the terms of the lease. The Company adopted the short-term lease exception that permits lessees to omit leases with terms of twelve months or less from the accounting requirements of ASC 842.

**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 has historically earned revenue from government research grants, in which it served as either the primary contractor or as a subcontractor. These grants are considered a central operation of the Company's business. Revenue is earned as research expenses related to the grants are incurred. Revenue earned on government grants, but not yet invoiced as of the balance sheet date, are recorded as unbilled receivables in the accompanying unaudited condensed consolidated balance sheet at December 31, 2022. Funds received from government grants in advance of work being performed, if any, are recorded as deferred revenue until earned.

**Research and Development**

All costs associated with internal research and development are expensed as incurred. Research and development expenses include, among others, direct costs for salaries, employee benefits, subcontractors, crop trials, regulatory activities, facility related expenses, depreciation, and stock-based compensation. Costs incurred for seed multiplication and processing are included within research and development expense until the Company completes its transition to established commercial operations, at which time these costs are expected to be recorded within inventory. Costs incurred in connection with government research grants are recorded as research and development expense.

**General and Administrative Expenses**

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

**Intellectual Property Costs**

The Company includes all costs associated with the prosecution and maintenance of patents within general and administrative expenses in the Company's unaudited condensed consolidated statements of operations.

**Stock-Based Compensation**

All share-based payments to employees, members of the Board of Directors and non-employees are recognized within operating expenses based on the straight-line recognition of their grant date fair value over the period during which the recipient is required to provide service in exchange for the award. See Note 7 for a description of the types of stock-based awards granted, the compensation expense related to such awards and detail of equity-based awards outstanding.

**Recent Accounting Standards**

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

In November 2021, the FASB issued ASU 2021-10, *Government Assistance (Topic 832) - Disclosures by Business Entities about Government Assistance*. This ASU requires annual disclosures that are expected to increase the transparency of transactions with a government accounted for by applying a grant or contribution accounting model by analogy, including (1) the nature of the transactions and the form in which assistance has been received, (2) the accounting policy applied, and (3) the balance sheet and income statement line items that are affected by the transactions, and the amounts applicable to each financial statement line item. This ASU is effective for annual periods beginning after December 15, 2021. The adoption of this standard has not materially impacted the Company’s condensed consolidated financial statements.

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments.* The FASB subsequently issued amendments to ASU 2016-13, which have the same effective date and transition date as the initial pronouncement. This standard requires entities to estimate an expected lifetime credit loss on financial assets ranging from short-term trade accounts receivable to long-term financings and report credit losses using an expected losses model rather than the incurred losses model that was previously used, and establishes additional disclosures related to credit risks. For available-for-sale debt securities with unrealized losses, this standard now requires allowances to be recorded instead of reducing the amortized cost of the investment. This standard limits the amount of credit losses to be recognized for available-for-sale debt securities to the amount by which carrying value exceeds fair value and requires the reversal of previously recognized credit losses if fair value increases. The guidance is effective for annual periods beginning after December 15, 2022 for SEC filers that are eligible to be smaller reporting companies and interim periods within those fiscal years. The adoption of this standard has not materially impacted the Company’s condensed consolidated financial statements.

### 3. BASIC AND DILUTED NET LOSS PER SHARE

Basic net loss per share is computed by dividing net loss available to common stockholders by the weighted-average number of common shares outstanding. Diluted net loss per share is computed by dividing net income available to common stockholders 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 following potentially dilutive securities were excluded from the calculation of diluted net loss per share due to their antidilutive effect:

| | As of June 30, | |
|---|---|---|
| | 2023 | 2022 |
| Options | 1,157,351 | 949,884 |
| Restricted Stock Awards | — | 54,250 |
| Warrants | 2,136,008 | 1,290,273 |
| Total | 3,293,359 | 2,294,407 |

### 4. INVESTMENTS

The Company's investments consisted of the following at December 31, 2022:

| | Accumulated Cost at December 31, 2022 | Unrealized Gain | Unrealized (Loss) | Market Value at December 31, 2022 |
|---|---|---|---|---|
| Short-term investments | | | | |
| U.S. government and agency securities | $ 1,992 | $ — | $ (1) | $ 1,991 |
| Total | $ 1,992 | $ — | $ (1) | $ 1,991 |

The Company did not hold any investments at June 30, 2023. All investments held on December 31, 2022 were classified as available for sale.

### 5. FAIR VALUE MEASUREMENTS

The Company has certain financial assets recorded at fair value which have been classified as Level 1 and Level 2 within the fair value hierarchy as described in the accounting standards for fair value measurements. Fair value is the price that would be received from the sale of an asset or the price paid to transfer a liability in an orderly transaction between independent market participants at the measurement date. Fair values determined by Level 1 inputs utilize observable data such as quoted prices in active markets for identical instruments. Fair values determined by Level 2 inputs utilize data points other than quoted prices in active markets that are observable either directly or indirectly. Fair values determined by Level 3 inputs utilize unobservable data points in which there is little or no market data, which require the reporting entity to develop its own assumptions. The fair value hierarchy level is determined by the lowest level of significant input.

The Company’s financial assets classified as Level 2 at June 30, 2023 and December 31, 2022 were initially valued at the transaction price and subsequently valued utilizing third-party pricing services. Because the Company’s investment portfolio may include securities that do not always trade on a daily basis, the pricing services use many observable market inputs to determine value including reportable trades, benchmark yields and benchmarking of like securities. The Company validates the prices provided by the third-party pricing services by reviewing their pricing methods and obtaining market values from other pricing sources. After completing the validation procedures, the Company did not adjust or override any fair value measurements provided by these pricing services as of June 30, 2023 and December 31, 2022.

The tables below present information about the Company’s assets that are measured at fair value on a recurring basis as of June 30, 2023 and December 31, 2022 and indicate the fair value hierarchy of the valuation techniques utilized to determine such fair value.

| Description | Fair value measurements at reporting date using: Quoted prices in active markets for identical assets (Level 1) | Significant other observable inputs (Level 2) | Significant unobservable inputs (Level 3) | Balance as of June 30, 2023 |
|---|---|---|---|---|
| Cash equivalents: | | | | |
| Money market funds | $ 656 | $ — | $ — | $ 656 |
| Total assets | $ 656 | $ — | $ — | $ 656 |

| Description | Fair value measurements at reporting date using: Quoted prices in active markets for identical assets (Level 1) | Significant other observable inputs (Level 2) | Significant unobservable inputs (Level 3) | Balance as of December 31, 2022 |
|---|---|---|---|---|
| Cash equivalents: | | | | |
| Money market funds | $ 1,633 | $ — | $ — | $ 1,633 |
| Short-term investments: | | | | |
| U.S. government and agency securities | — | 1,991 | — | 1,991 |
| Total assets | $ 1,633 | $ 1,991 | $ — | $ 3,624 |

There were no transfers of financial assets between category levels during the three and six months ended June 30, 2023 and the three and six months ended June 30, 2022.

## 6. ACCRUED EXPENSES

Accrued expenses consisted of the following at June 30, 2023 and December 31, 2022:

| | June 30, 2023 | December 31, 2022 |
|---|---|---|
| Employee compensation and benefits | $ 276 | $ 39 |
| Leased facilities | 58 | 81 |
| Professional services | 430 | 264 |
| Field trials and related expenses | 366 | 146 |
| Other | 245 | 396 |
| Total accrued expenses | $ 1,375 | $ 926 |

## 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 $394 and $830 for the three and six months ended June 30, 2023, respectively, and $488 and $1,011 for the three and six months ended June 30, 2022, respectively. At June 30, 2023, there was approximately $2,771 of unvested awards not yet recognized as compensation expense.

The compensation expense related to unvested stock awards is expected to be recognized over a remaining weighted average period of 2.38 years.

***Stock Options***

A summary of option activity for the six months ended June 30, 2023 is as follows:

| | Number of Shares | Weighted Average Exercise Price |
|---|---|---|
| Outstanding at December 31, 2022 | 979,748 | $ 14.10 |
| Granted | 261,400 | 3.54 |
| Exercised | — | — |
| Forfeited | (66,423) | 6.35 |
| Expired | (17,374) | 23.96 |
| Outstanding at June 30, 2023 | 1,157,351 | $ 12.02 |
| | | |
| Options exercisable at June 30, 2023 | 548,682 | $ 19.28 |

In accordance with the terms of the Company's 2018 Stock Option and Incentive Plan ("2018 Stock Plan"), Yield10's Board of Directors approved the addition of 247,210, 244,092 and 166,702 shares to the 2018 Stock Plan, on the first day of 2023, 2022 and 2021, respectively, each of which represented 5% of the Company's outstanding common stock on the day prior to each increase. At the Company 2023 annual meeting of stockholders held on May 25, 2023, stockholders approved an amendment and restatement of the 2018 Stock Plan to increase the aggregate number of shares of the Company’s common stock that may be issued under the 2018 Plan by 500,000 shares, As of June 30, 2023, 569,538 shares remain available to be awarded from the 2018 Stock Plan.

*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 fair market value. As RSUs vest, the Company withholds a number of shares from its employees with an aggregate fair market value equal to the minimum tax withholding amount from the common stock issuable at the vest date. During the six months ended June 30, 2023, 27,123 employee RSUs vested, of which 9,483 common shares with a total market value of $34 were withheld to pay employee tax withholding.

A summary of RSUs activity for the six months ended June 30, 2023 is as follows:

| | Number of RSUs | Weighted Average Remaining Contractual Life (years) |
|---|---|---|
| Outstanding at December 31, 2022 | 27,123 | |
| Awarded | — | |
| Released | (27,123) | |
| Outstanding at June 30, 2023 | — | 0.00 |

**8. LEASES**

*Maturity Analysis of Lease Liabilities*

The Company's facility lease for its headquarters located in Woburn, Massachusetts, and a small number of automobile leases under a fleet leasing program initiated during the three months ended June 30, 2023, are the only leases included within the Company's right-of-use assets and corresponding lease liabilities. No other active real estate or equipment leases fall within the scope of ASC 842. At June 30, 2023, the Company's lease liability related to its Woburn facility and leased automobiles will mature as follows:

| Year ended December 31, | Undiscounted Cash Flows |
|---|---|
| 2023 (July to December) | $ 393 |
| 2024 | 800 |
| 2025 | 822 |
| 2026 | 776 |
| 2027 | 18 |
| Thereafter | 4 |
| Total undiscounted future lease payments | 2,813 |
| Amount of lease payments representing interest | (343) |
| Total lease liabilities | $ 2,470 |
| Short-term lease liability | $ 628 |
| Long-term lease liability | $ 1,842 |

At June 30, 2023, the real estate lease for the Company's Woburn facility represented 96.0% of the Company's lease liabilities of $2,813 reflected in the table above.

*Quantitative Disclosure of Lease Costs*

| | Three Months Ended June 30, | | Six Months Ended June 30, | |
|---|---|---|---|---|
| | 2023 | 2022 | 2023 | 2022 |
| **Lease cost:** | | | | |
| Operating lease cost | $ 150 | $ 151 | $ 301 | $ 303 |
| Short-term lease cost | 181 | 183 | 398 | 332 |
| Sublease income | (177) | (153) | (336) | (295) |
| Total lease cost, net | $ 154 | $ 181 | $ 363 | $ 340 |

| Other information as of: | June 30, 2023 | December 31, 2022 |
|---|---|---|
| Weighted-average remaining lease term (years) | 3.5 | 3.9 |
| Weighted-average discount rate | 7.45% | 7.25% |

*Real Estate Leases*

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

In October 2016, the Company entered into a sublease agreement with a subsidiary of CJ CheilJedang Corporation ("CJ") with respect to CJ's sublease of approximately 9,874 square feet of its leased facility located in Woburn, Massachusetts. The CJ sublease is coterminous with the Company's master lease and CJ will pay rent and operating expenses proportionate to the amounts payable to the landlord by the Company, as adjusted from time to time in accordance with the terms of the master lease. Future CJ sublease payments have not been presented as an offset to total undiscounted future lease payments of $2,813 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's wholly-owned subsidiary, YOI, located in Saskatoon, Saskatchewan, Canada, leases approximately 9,600 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. YOI's leases for these facilities expire on various dates through May 31, 2024.

*Vehicle Leases*

During the three months ended June 30, 2023, the Company entered into a fleet leasing program in order to provide vehicles to employees who travel extensively throughout western Canada and the northwestern U.S. in support of crop field trials and Camelina operations. These vehicle leases generally have terms of four to five years and contain purchase options at the end of their lease terms for the amount of their contractually guaranteed residual value.

**9. CONVERTIBLE NOTE PAYABLE, NET**

On April 27, 2023, the Company signed a non-binding letter of intent LOI with Marathon Petroleum Corporation Marathon relating to a potential investment in Yield10 by Marathon and an offtake agreement (the “Offtake Agreement”) for low-carbon intensity Camelina feedstock oil for use in renewable fuels. In connection with the signing of the LOI, the Company sold and issued to MPC Investment LLC, an affiliate of Marathon (the “Purchaser”), a senior unsecured convertible note in the original principal amount of $1,000 (the “Convertible Note”) which is convertible into shares of the Company’s common stock or other Qualified Securities (as defined below), subject to certain conditions and limitations. The Company will use the net proceeds from the Convertible Note for working capital and general corporate purposes.

The Convertible Note contains customary events of default for such an instrument, accrues interest at 8.0% per annum, payable semi-annually in arrears, and has a maturity date ("Maturity Date") equal to either (i) the date that is one year after the Exclusivity End Date, (defined as the date on which the 120 day exclusivity period under the LOI expires without the execution of definitive agreements for the Offtake Agreement or the date on which Marathon notifies Yield10 that it will no longer pursue the agreements), or (ii) the Fundamental Change Effective Date (as defined in the Convertible Note), unless earlier repaid or converted prior to such date in accordance with its terms. The Company may, at its option prior to any interest payment date, add the interest due to the unpaid principal amount of the Convertible Note. Interest expense accrued on the Convertible Note through June 30, 2023 is included in other income (expense), net, in the Company's condensed consolidated statements of operations included herein. Unless terminated by Marathon earlier, the parties intend to negotiate and agree to the terms of definitive agreements within the 120 day exclusivity period that ends on August 25, 2023.

If any amount remains outstanding under the Convertible Note when a transaction or event constituting a Fundamental Change (as defined in the Convertible Note) occurs, then the Convertible Note will, at the election of the Purchaser, be convertible, in whole or in part, into shares of common stock at a conversion price equal to $3.07 per share. If, at any time any amount under the Convertible Note remains outstanding before the Exclusivity End Date and the Company enters into definitive agreements for the Offtake Agreement or similar transaction that qualifies as a Qualified Financing (as defined in the Convertible Note), then the Convertible Note will convert, in whole, into the securities issued in such Qualified Financing (the “Qualified Securities”) at a conversion price equal to the purchase price of such Qualified Securities sold in the Qualified Financing. If not converted or terminated earlier, all outstanding principal and accrued and unpaid interest on the Convertible Note will be due and payable in full in cash on the Maturity Date.

When issued, the Company recorded the Convertible Note as a single liability at $967, which is net of debt issuance costs of $33 and is reflected in long-term liabilities within the Company's June 30, 2023 Condensed Consolidated Balance Sheet contained herein. The issuance costs are being amortized as interest expense, using the effective interest rate method, through the expected maturity date of August 24, 2024, resulting in an effective interest rate of 10.7%. At June 30, 2023, $29 in issuance costs remain to be amortized through the Maturity Date. If Yield10 and Marathon enter into definitive agreements for the Offtake Agreement prior to the Exclusivity End Date, the Convertible Note will convert into Qualified Securities and the Company will recognize any remaining unamortized issuance costs.

**10. COMMITMENTS AND CONTINGENCIES**

**Contractual Commitments**

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

In November 2020, the Company signed an exclusive collaboration agreement with UK-based Rothamsted to support Rothamsted’s program to develop omega-3 oils in Camelina sativa. Under the agreement, Yield10 has provided Rothamsted with financial support for ongoing research including further EPA, DHA+EPA trait improvement, field testing and nutritional studies. The Company paid Rothamsted research funding and option fees totaling $219, with a final payment of $31 remaining to be paid as of June 30, 2023, related to a final deliverable to be received from Rothamsted. Included within the agreement, the Company had an exclusive two-year option to sign a global, exclusive or non-exclusive license agreement to the technology. In November 2022, Yield10 and Rothamsted agreed to extend the collaboration agreement, including the license option, without additional funding support, through December 31, 2023.

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

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

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

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

*Guaranteed Minimum Payments to Growers and Seed Producers*

As an incentive for growers located in Canada and the U.S. to enter into Camelina commercial grain production contracts with the Company for the 2022/2023 winter and 2023 spring seasons, Yield10 offered minimum guaranteed payments per acre that reduce growers' risk of financial loss. The cost of these minimum payments is generally accrued on a straight-line basis over the expected growing season unless evidence close to the time of harvest clearly indicates that a grower's harvest will exceed the amount of the guarantee. Payment of minimum guarantees is conditional upon each grower fulfilling their contractual responsibilities and are offset by the purchase price of Yield10's Camelina planting seed provided to the growers and the contractual price that the Company will pay for the actual amount of grain that is harvested. Although the Company anticipates that payment of these guaranteed amounts will not be required under normal growing conditions and expected harvests, as of June 30, 2023 and December 31, 2022, the Company has recorded accruals of $86 and $25, respectively, net of the growers' obligation to pay for the planting seed.

The Company has also entered into Camelina seed production agreements with certain seed producers containing minimum contract guarantees per acre. As of December 31, 2022, the Company recorded an accrual of approximately $69 for these minimum contract guarantees, net of progress payments made by Yield10 as of that date. The Company did not need to accrue for seed production agreements as of June 30, 2023.

*Facility Leases*

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

**Litigation**

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

**Guarantees**

As of June 30, 2023 and December 31, 2022, the Company did not have significant liabilities recorded for guarantees.

The Company enters into indemnification provisions under various agreements with other companies in the ordinary course of business, typically with business partners, contractors, and customers. Under these provisions, the Company generally indemnifies and holds harmless the indemnified party for losses suffered or incurred by the indemnified party as a result of its activities. These indemnification provisions generally survive termination of the underlying agreement. The maximum potential amount of future payments the Company could be required to make under these indemnification provisions is unlimited. However, to date the Company has not incurred material costs to defend lawsuits or settle claims related to these indemnification provisions. As a result, the estimated fair value of these agreements is minimal. Accordingly, the Company has no liabilities recorded for these agreements as of June 30, 2023 and December 31, 2022.

**11. LICENSE AGREEMENTS**

In October 2019, the Company granted a non-exclusive license to J. R. Simplot ("Simplot"), to evaluate three of the Company's novel traits in potato. Under the license agreement, Simplot plans to conduct research with the yield traits C3003, C3004 and C4001 within its research and development program as a strategy to improve crop performance and sustainability. In September 2022, the Company and Simplot amended the license agreement in order to extend it for a fourth year.

In August 2020, the Company entered into a non-exclusive research agreement with GDM Seeds ("GDM"), a company specializing in plant genetics, to evaluate novel traits in soybean. Under the terms of the agreement, GDM is working with the Company's yield traits within its research and development program as a strategy to improve soybean yield performance and sustainability. The research agreement includes three novel yield traits in the first phase with the potential to expand the program to more traits in the future.

Neither of these research arrangements provide significant licensing revenue to the Company while Simplot and GDM perform trait evaluations.

**12. GEOGRAPHIC INFORMATION**

The geographic distribution of the Company’s grant revenues and long-lived assets are summarized in the tables below. Foreign revenue is based on the country in which the Company’s subsidiary that earned the revenue is domiciled.

| | U.S. | Canada | Total |
|---|---|---|---|
| Three Months Ended June 30, 2023 | | | |
| Revenue | $ — | $ — | $ — |
| Three Months Ended June 30, 2022 | | | |
| Revenue | $ 103 | $ — | $ 103 |
| Six Months Ended June 30, 2023 | | | |
| Revenue | $ 60 | $ — | $ 60 |
| Six Months Ended June 30, 2022 | | | |
| Revenue | $ 252 | $ — | $ 252 |
| | | | |
| Identifiable long-lived assets | | | |
| June 30, 2023 | $ 568 | $ 95 | $ 663 |
| June 30, 2022 | $ 752 | $ 143 | $ 895 |

**13. CAPITAL STOCK AND WARRANTS**

**Common Stock**

*Registered Direct Offering and Private Placement*

On May 3, 2023, the Company entered into a securities purchase agreement (the “Purchase Agreement”) with an institutional investor and an existing investor, pursuant to which the Company agreed to issue and sell (i) an aggregate of 931,600 shares (the “Shares”) of the Company’s common stock, par value $0.01 per share (the “Common Stock”), (ii) a pre-funded warrant (the “Pre-Funded Warrant”) to purchase 75,110 shares of Common Stock, and (iii) private placement warrants (the “Private Warrants”) to purchase an aggregate of 1,006,710 shares of Common Stock. The Shares, Pre-Funded Warrant and

Private Warrants were sold on a combined basis for consideration equating to $2.98 for one Share and a Private Warrant to purchase one underlying share of Common Stock (or in lieu thereof, $2.9799 for a Pre-Funded Warrant to purchase one underlying share of Common Stock and a Private Warrant to purchase one underlying share of Common Stock). The exercise price of the Pre-Funded Warrant was $0.0001 per underlying share. The exercise price of the Private Warrant is $2.98 per underlying share.

The Shares and the Pre-Funded Warrant were offered pursuant to an effective registration statement on Form S-3 (File No. 333-254830), as initially filed with the Securities and Exchange Commission (the “Commission”) on March 29, 2021, and declared effective by the Commission on April 2, 2021. The Pre-Funded Warrant was fully exercised on May 12, 2023 and converted to 75,110 shares of the Company's common stock. The Private Warrant was sold in a concurrent private placement (the “Private Placement”), exempt from registration pursuant to Section 4(a)(2) and/or Rule 506 of the Securities Act of 1933, as amended (the “Securities Act”). The Private Warrants become exercisable beginning six months from the date of issuance, on November 6, 2023, and terminate on the fifth anniversary from that date.

Combined proceeds from the registered direct offering and private placement were $3,000 before estimated issuance costs of $283.

*At-The-Market ("ATM") Program*

On January 24, 2023, the Company entered into an Equity Distribution Agreement (the "Sales Agreement") with Maxim Group LLC ("Maxim") under which the Company could offer and sell shares of its common stock, $0.01 par value per share, having an aggregate offering price of up to $4,200 from time to time through Maxim, acting exclusively as the Company's sales agent. Maxim was entitled to compensation at a fixed commission rate of 2.75% of the gross sales price for each share sold. Effective May 3, 2023, the Company terminated the Sales Agreement after issuing a total of 94,665 shares of common stock, all within the three months ended March 31, 2023, at per share prices between $3.03 and $4.08, resulting in gross proceeds to the Company of $299 before offering costs and sales commissions totaling $196.

*Board of Director Stock Issuances*

During the three and six months ended June 30, 2023, certain members of the Company's Board of Directors elected to receive 5,558 shares and 10,030 shares, respectively, of Yield10 common stock in lieu of receiving $13 and $25, respectively, in cash compensation payments for their services to the board and board committees.

**Preferred Stock**

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

**Warrants**

The following table summarizes information regarding outstanding warrants to purchase common stock as of June 30, 2023:

| Issuance | Number of Shares Issuable Upon Exercise of Outstanding Warrants | Exercise Price Per Share of Common Stock | Expiration Date |
|---|---|---|---|
| May 2023 Registered Direct and Concurrent Private Placement | 1,006,710 | $ 2.98 | November 6, 2028 [1] |
| November 2019 Public Offering - Series B | 395,528 | $ 8.00 | May 19, 2027 |
| November 2019 Private Placement - Series B | 718,750 | $ 8.00 | May 19, 2027 |
| July 2017 Registered Direct Offering | 14,270 | $ 201.60 | January 7, 2024 |
| Consultant | 750 | $ 116.00 | September 11, 2024 |
| Total outstanding warrants | 2,136,008 | | |

(1) Warrants issued in the Company's May 2023 registered direct and concurrent private placement offerings are not eligible to be exercised until November 6, 2023.

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

| | June 30, 2023 | December 31, 2022 |
|---|---|---|
| Stock Options | 1,157,351 | 979,748 |
| RSUs | — | 27,123 |
| Warrants | 2,136,008 | 1,129,298 |
| Total number of common shares reserved for future issuance | 3,293,359 | 2,136,169 |

## 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; the impact from the war in Ukraine and the resulting economic and other sanctions imposed on Russia; 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, 2022 and in our other filings with the SEC.

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. ("Yield10" or the "Company") is an agricultural bioscience company focused on the large-scale production of low carbon sustainable products from processing Camelina seed using the oilseed Camelina sativa ("Camelina") as a platform crop. These seed products include:

- Camelina oil for use as a low carbon biofuel feedstock
- Omega-3 oils for nutrition
- PHA Bioplastics for biodegradable zero waste packaging solutions

The co-product from producing these seed products is Camelina meal which has a protein content of over 40% and is currently approved for use in a range of animal feed rations.

Our commercial plan is based on developing and releasing a series of proprietary elite Camelina seed varieties incorporating genetic traits from our development pipeline which offer improved on-farm performance that we anticipate will lead to increased acreage adoption and seed and grain product revenue. We also plan to create additional value for our stockholders by licensing yield and seed oil traits from our pipeline to large seed companies for commercialization in major food crops, including corn, soybean and canola.

Yield10 is headquartered in Woburn, Massachusetts and has an Oilseed Center of Excellence in Saskatoon, Saskatchewan, Canada.

**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*." Funding for this five-year grant was awarded incrementally on an annual basis with the first year commencing on September 15, 2017. Cumulative funding for this sub-award for the full grant amount of $2,957 was appropriated by the U.S. Congress through the contractual year ending in September 2022. During the fiscal quarter ended March 31, 2023, we recognized the final $60 remaining under this sub-award. During the three and six months ended June 30, 2022, we recognized $103 and $252, respectively, in grant revenue from the sub-award.

| Program Title | Funding Agency | Total Government Funded Appropriations | Total revenue recognized through June 30, 2023 | Remaining amount to be recognized as of June 30, 2023 | Contract/Grant Expiration |
|---|---|---|---|---|---|
| Subcontract from Michigan State University project funded by DOE entitled "A Systems Approach to Increasing Carbon Flux to Seed Oil" | Department of Energy | $ 2,957 | $ 2,957 | $ — | Completed in the first quarter of 2023 |

**Critical Accounting Estimates and Judgments**

The discussion and analysis of our financial condition and results of operations are based upon our unaudited condensed consolidated financial statements, which have been prepared in accordance with generally accepted accounting principles in the United States for interim financial information. The preparation of these unaudited condensed consolidated 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 unaudited condensed consolidated financial statements for the three and six months ended June 30, 2023, were consistent with those discussed in our Annual Report on Form 10-K for the year ended December 31, 2022, in the section captioned "Management's Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Estimates and Judgments."

**Results of Operations**

**Comparison of the Three Months Ended June 30, 2023 and 2022**

**Revenue**

| | Three Months Ended June 30, | | |
|---|---|---|---|
| | 2023 | 2022 | Change |
| Grant revenue | $ — | $ 103 | $ (103) |

Grant revenue of $103 during the three months ended June 30, 2022 was derived from our DOE sub-award with MSU. As of March 31, 2023, our work in support of this research grant was completed with no further grant revenue to be recognized.

We currently do not have any active government grants and therefore anticipate that grant revenue will decrease during the year ended December 31, 2023 in comparison to the year ended December 31, 2022. We currently cannot assess whether additional U.S. or Canadian government research grants will be awarded to us during the remainder of 2023.

We contracted with growers in Canada and the U.S. for the 2022/2023 winter and 2023 spring growing seasons for approximately 1,000 acres of Camelina each season. The harvested grain production from these contracts will be sold to oil producers in the renewable biofuel market. Harvest of our first winter commercial grain production commenced in July 2023, with grain revenue recognition to occur upon delivery of the grain to an offtake partner shortly thereafter. Our 2023 spring Camelina harvest is expected to commence later in the third quarter of 2023. Our intention is to continue expansion of Camelina acreage under contract with growers for future winter and spring seasons as we manage the growth of our business.

**Expenses**

| | Three Months Ended June 30, | | |
|---|---|---|---|
| | **2023** | **2022** | **Change** |
| Research and development expenses | $ 1,997 | $ 2,016 | $ (19) |
| General and administrative expenses | 1,670 | 1,523 | 147 |
| Total expenses | $ 3,667 | $ 3,539 | $ 128 |

***Research and Development Expenses***

Research and development expenses remained consistent overall during the three months ended June 30, 2023 and the three months ended June 30, 2022. However, our crop trial expenses increased by $259 during our second quarter of 2023, primarily as a result of fieldwork being conducted to develop and evaluate our herbicide tolerant Camelina plant varieties. This increase was offset by a decrease in the costs of Camelina seed production activities of $256 during the period.

Based on current planning and forecasting, we anticipate that our research and development expenses during the year ended December 31, 2023 will be greater than the expenses incurred during the year ended December 31, 2022, as we continue our efforts to develop and commercialize Camelina plant varieties to be used in the following markets; biofuel, omega-3 oil for nutraceuticals and fish feed, PHA bioplastics and as a protein meal for animal feed. The projected increase in expenses will include employee compensation and benefits from recent and future personnel hiring, further expansion of our crop trial programs, seed scale up and other pre-commercial Camelina production activities. Our forecast related to research and development expense is subject to change and may be impacted by our ability to raise additional working capital to support our planned operations or the entry into third-party collaborations or other business opportunities that could alter our plans.

***General and Administrative Expenses***

General and administrative expenses increased by $147 from $1,523 during the three months ended June 30, 2022 to $1,670 during the three months ended June 30, 2023. The 10 percent increase was primarily the result of a $94 increase in professional fees and a $53 increase in travel costs. During the three months ended June 30, 2023, the increase in professional fees was the result of higher legal and accounting expenses related to business development and securities offerings. Travel expenses increased during the three months ended June 30, 2023 in connection with business development activities and the Company's ongoing transition to commercial operations.

Based on current planning and forecasting, we anticipate that our general and administrative expenses during the year ended December 31, 2023 will continue to be slightly higher than expenses incurred during the year ended December 31, 2022, as we scale up activities in support of our commercial growth, including increasing legal expenses, license payments and travel-related expenses in support of business development. Our forecast related to general and administrative expense is subject to change and may be impacted by our ability to raise additional working capital to support our plans or the entry into third-party collaborations or other business opportunities that could alter our plans.

**Other Income (Expense), Net**

| | Three Months Ended June 30, 2023 | Three Months Ended June 30, 2022 | Change |
|---|---|---|---|
| Other income (expense), net | $ (14) | $ 2 | $ (16) |

*Other Income (Expense), net*

Other income (expense) for the three months ended June 30, 2023 was derived primarily from interest expense charged in connection with the Company's annual insurance premium financing plan and from our amortization of debt issuance costs related to the convertible note with Marathon Petroleum Corporation ("Marathon").

**Comparison of the Six Months Ended June 30, 2023 and 2022**

**Revenue**

| | Six Months Ended June 30, 2023 | Six Months Ended June 30, 2022 | Change |
|---|---|---|---|
| Grant revenue | $ 60 | $ 252 | $ (192) |

Grant revenue was $60 and $252 for the six months ended June 30, 2023 and June 30, 2022, respectively. All of the grant revenue recorded during the six months ended June 30, 2023 and June 30, 2022 was derived from the completed DOE sub-award with MSU.

**Expenses**

| | Six Months Ended June 30, 2023 | Six Months Ended June 30, 2022 | Change |
|---|---|---|---|
| Research and development expenses | $ 4,159 | $ 3,779 | $ 380 |
| General and administrative expenses | 3,368 | 3,230 | 138 |
| Total expenses | $ 7,527 | $ 7,009 | $ 518 |

***Research and Development Expenses***

Research and development expenses increased from $3,779 during the six months ended June 30, 2022 to $4,159 during the six months ended June 30, 2023. The $380, or 10 percent year-to-date increase, was primarily due to increased crop trial costs of $396 as a result of fieldwork being conducted to develop and evaluate different varieties of Camelina, including our herbicide tolerant plant varieties.

***General and Administrative Expenses***

General and administrative expenses increased by $138 from $3,230 during the six months ended June 30, 2022 to $3,368 during the six months ended June 30, 2023. The 4 percent year-to-date increase was primarily due to increases in professional service and consulting fees partially offset by a reduction in stock-based compensation expense. Increases in professional service fees of $226 was driven by higher legal fees of $157 as a result of securities offerings and business development activities and by higher accounting fees of $92, also as a result of securities offerings and our engagement of outside accountants for tax and technical accounting matters. During the six months ended June 30, 2023, consulting expenses increased by $72, primarily as a result of engaging additional support for business development activities and as a result of our upgrade in financial accounting systems in preparation for future commercial operations. Stock-based compensation decreased by $128 during the six months ended June 30, 2023 in comparison to the six months ended June 30, 2022.

**Other Income (Expense), Net**

| | Six Months Ended June 30, 2023 | Six Months Ended June 30, 2022 | Change |
|---|---|---|---|
| Other income (expense), net | $ 4 | $ 1 | $ 3 |

*Other Income (Expense), net*

Other income (expense) for the six months ended June 30, 2023 was derived primarily from investment income earned on the Company's cash equivalents offset by interest expense charged in connection with the Company's annual insurance premium financing plan and from our amortization of debt issuance costs related to the convertible note with Marathon.

**Liquidity and Capital Resources**

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

Since our inception, we have incurred significant expenses related to our research, development and product commercialization efforts. With the exception of 2012, we have recorded losses since our initial founding, including the three and six months ended June 30, 2023. As of June 30, 2023, we had an accumulated deficit of $407,160. Our unrestricted cash and cash equivalents are held primarily for working capital purposes and as of June 30, 2023, totaled $2,336 compared to cash, cash equivalents and investments of $4,347 at December 31, 2022. As of June 30, 2023, we had restricted cash of $264, consisting of $229 held in connection with the lease agreement for our Woburn, Massachusetts facility and $35 held in connection with our corporate credit card program. As of June 30, 2023, we have a long-term convertible note outstanding of $1,000 with MPC Investment LLC, an affiliate of Marathon.

Our management is currently evaluating different strategies to obtain the required funding for our operations in the near term. These strategies may include, but are not limited to: public and private placements of equity and/or debt, licensing and/or collaboration arrangements and strategic alternatives with third parties, or other funding from the government or third parties. Our ability to secure funding is subject to numerous risks and uncertainties, including the impact of geopolitical turmoil and economic uncertainty related to rising inflation and disruptions in the global supply chain. As a result, there can be no assurance that these funding efforts will be successful. The sale of equity and convertible debt securities may result in dilution to our stockholders and, in the case of preferred equity securities or convertible debt, those securities could provide for rights, preferences or privileges senior to those of our common stock. The terms of debt securities issued or borrowings pursuant to a credit agreement could impose significant restrictions on our operations. If we raise funds through collaborations and licensing arrangements, we might be required to relinquish significant rights to our technologies or products or grant licenses on terms that are not favorable to us. Additional capital may not be available on reasonable terms, or at all.

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. Consequently, our investments are limited to high quality corporate debt, U.S. Treasury bills and notes, money market funds, bank debt obligations, municipal debt obligations and asset-backed securities. The policy establishes maturity limits, concentration limits, and liquidity requirements. As of June 30, 2023, we did not hold any investments.

*Material Cash Requirements*

We currently anticipate net cash usage of $12,500 to $13,000 to fund our operations during 2023, including our expanded research and development, administrative and Camelina commercial launch activities.

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

We routinely enter into contractual commitments with third parties to support our operating activities. The more significant of these commitments includes real estate operating leases for our office, laboratory and greenhouse facilities located in the U.S. and Canada. In addition, we typically enter into annual premium funding arrangements through our insurance broker that allows us to spread the payment of our directors' and officers' liability and other business insurance premiums over the terms of the policies. Our material commitments also include arrangements with third party growers located in North and

South America for the execution of crop trials, seed scale-up activities and Camelina grain production contracts with commercial growers. The aggregate cost of these contracted crop activities is substantial. From time-to-time, we also enter into exclusive research licensing and collaboration arrangements with third parties for the development of intellectual property related to trait development. These long-term agreements typically include initial licensing payments and future contingent milestone payments associated with regulatory filings and approvals as well as potential royalty payments based on future product sales. Generally, these licensing arrangements contain early termination provisions within the terms of the respective agreements.

The Company has no off-balance sheet arrangements as defined in Item 303(b) of Regulation S-K of the Securities Exchange Act of 1934.

*Equity Distribution Agreement*

On January 24, 2023, we entered into an Equity Distribution Agreement (the "Sales Agreement") with Maxim Group LLC ("Maxim") that was subsequently terminated by the parties, effective May 3, 2023. Under the terms of the Sales Agreement, we could offer and sell shares of our common stock, $0.01 par value per share, having an aggregate offering price of up to $4,200 from time to time through Maxim, acting exclusively as our sales agent (the "Offering"). On January 24, 2023, we filed a prospectus supplement with the Securities and Exchange Commission in connection with the Offering under our existing Registration Statement on Form S-3 (File No 333-254830), which was declared effective on April 2, 2021. Maxim was entitled to compensation at a fixed commission rate of 2.75% of the gross sales price per share sold. In addition, we reimbursed Maxim for its costs and out-of-pocket expenses incurred in connection with its services, including the fees and out-of-pocket expenses of its legal counsel. During the three months ended March 31, 2023, and through the termination of the Sales Agreement, we issued 94,665 shares of common stock in connection with the Sales Agreement at per share prices between $3.03 and $4.08, resulting in net proceeds to the Company of $103 after subtracting offering costs and sales commissions totaling $196.

*Letter of Intent with Marathon Petroleum Corporation*

On April 27, 2023, we signed a non-binding letter of intent (“LOI”) with Marathon for a potential investment in Yield10 by Marathon and for an offtake agreement for low-carbon intensity Camelina feedstock oil to be used in renewable fuels production. In connection with signing the LOI, we sold and issued to MPC Investment LLC ("Purchaser"), an affiliate of Marathon, a senior unsecured convertible note in the original principal amount of $1,000 (the “Convertible Note”) which is convertible into shares of the Company’s common stock at a conversion price equal to $3.07 per share, subject to any mandatory adjustments and certain conditions and limitations set forth in the Convertible Note. If not converted or terminated earlier, all outstanding principal and accrued and unpaid interest on the Convertible Note will be due and payable in full in cash on the Convertible Note's expected Maturity Date of August 24, 2024. We sold and issued the Convertible Note pursuant to a securities purchase agreement, dated April 28, 2023, between the Company and the Purchaser and the proceeds of the Convertible Note have been received. We will use the net proceeds of $967, after debt issuance costs of $33, from the Convertible Note for working capital and general corporate purposes.

Since the execution of the LOI, Yield10 and Marathon have made continued progress toward the execution of the Offtake Agreement, on terms consistent with the LOI. There can be no assurance that the Company will be able to enter into the definitive Offtake Agreement, and there can be no assurance that, if the Offtake Agreement is finalized, that it will be successful or provide benefits to the Company as expected. In accordance with the Company's strategy, Yield10 will continue to explore additional financing and collaboration opportunities with potential strategic partners.

*Registered Direct Offering and Concurrent Private Placement*

On May 5, 2023, we closed on a $3,000 offering of the Company's common stock (or prefunded warrants in lieu thereof) in a registered direct offering and warrants in a concurrent private placement with investors. Under the terms of the securities purchase agreement, we agreed to sell 1,006,710 shares of common stock and to issue unregistered warrants to purchase 1,006,710 shares of common stock. The combined effective offering price for one share of common stock (or prefunded warrant in lieu thereof) and accompanying warrant was $2.98. The Company received proceeds of $2,717, from the offering, net of $283 in estimated issuance costs. The shares underlying the warrants issued in the offering were registered by the Company in July 2023.

*Going Concern*

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, including the additional funds received from our convertible note with Marathon and our registered direct offering described above, will not be sufficient to fund our planned operations for at least that period of time, which raises substantial doubt as to the Company's ability to continue as a going concern. This forecast of cash resources is forward-looking information that involves risks and uncertainties, and the actual amount of expenses could vary materially and adversely as a result of a number of factors. Our ability to continue operations after our current cash resources are exhausted will depend upon our ability to obtain additional financing through, among other sources, public or private equity financing, secured or unsecured debt financing, equity or debt bridge financing, warrant holders' ability and willingness to exercise the Company's outstanding warrants, and 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 additional funds are not available when required, we will be forced to curtail our research efforts, explore strategic alternatives and/or wind down our operations and pursue options for liquidating our remaining assets, including intellectual property and equipment.

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 of 1986 due to ownership changes resulting from future equity financing transactions. If we raise additional funds through collaboration, licensing or other similar arrangements, it may be necessary to relinquish valuable rights to our potential products or proprietary technologies or grant licenses on terms that are not favorable to us.

*Cash Usage During the Six Months Ended June 30, 2023*

Net cash used for operating activities during the six months ended June 30, 2023 and the six months ended June 30, 2022 was $5,746 and $5,640, respectively. Net cash used for operating activities during the six months ended June 30, 2023 primarily reflects the net loss of $7,463 and cash payments made to reduce lease liabilities of $180. Significant non-cash charges offsetting a portion of the net loss include depreciation and amortization expense of $145, our 401(k) matching contribution in common stock of $63, stock-based compensation expense of $830, and non-cash lease expense of $110. Net cash used for operating activities during the first six months of 2022 was $5,640 and primarily reflects the net loss of $6,774, cash payments made to reduce lease liabilities and to pay 2021 bonus compensation of $251 and $378, respectively. Non-cash charges offsetting a portion of the net loss included depreciation and amortization expense of $128, our 401(k) matching contribution in common stock of $76, stock-based compensation expense of $1,011, and non-cash lease expense of $192.

Net cash of $1,964 was provided by investing activities during the six months ended June 30, 2023, primarily as a result of receiving proceeds of $1,991 from investments reaching maturity and converting into cash. During the six months ended June 30, 2022, $3,528 in net cash was provided by investing activities and was primarily the result of receiving proceeds of $4,371 from maturing investments, partially offset by $710 in purchases of new investments and our purchase of $133 in new laboratory equipment.

Net cash of $3,779 was provided by financing activities during the six months ended June 30, 2023, compared to net cash of $14 used by financing activities during the six months ended June 30, 2022. During the six months ended June 30, 2023, we completed a registered direct offering that included 931,600 shares of the Company’s common stock, par value $0.01 per share, and a pre-funded warrant to purchase 75,110 shares of common stock, receiving net cash proceeds of $2,717 from the offering after issuance costs of $283. Also during the six months ended June 30, 2023, we signed a non-binding letter of intent LOI with Marathon that included a potential investment in Yield10 by Marathon and an investment and offtake agreement for low-carbon intensity Camelina feedstock oil for use in renewable fuels. In connection with the signing of the LOI, the Company sold and issued to MPC Investment LLC, an affiliate of Marathon, a senior unsecured convertible note in the original principal amount of $1,000. During the six months ended June 30, 2023, we also received net proceeds of $103 from the sale of shares of our common stock through the Maxim Sales Agreement.

**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 June 30, 2023. 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 June 30, 2023 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 information presented below updates, and should be read in conjunction with risk factors in Part I, Item 1A, "Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2022, filed with the SEC on March 14, 2023.

Except as presented below, there were no other significant changes in the Company's risk factors during the six months ended June 30, 2023.

***There can be no assurance that we will be able to comply with the continued listing standards of Nasdaq.***

We cannot assure you that we will be able to comply with the standards that we are required to meet in order to maintain a listing of our common stock on Nasdaq. Nasdaq listing rules require us to maintain certain closing bid price, stockholders’ equity and other financial metric criteria in order for our common stock to continue trading on Nasdaq. For example, Nasdaq Listing Rule 5550(a)(4) requires companies to maintain a minimum of 500,000 publicly held shares. Nasdaq Listing Rule 5550(a)(2) requires listed securities to maintain a minimum bid price of $1.00 per share, and Listing Rule 5810(c)(3)(A) provides that a failure to meet the minimum bid price requirement exists if the deficiency continues for a period of 30 consecutive business days.

On May 18, 2023, we received a deficiency letter (the "Letter") from the Listing Qualifications Department (the "Staff") of Nasdaq notifying the Company that it is not in compliance with the minimum stockholders' equity requirement for continued listing on Nasdaq. Nasdaq Listing Rule 5550(b)(1) requires companies listed on Nasdaq to maintain stockholders' equity of at least $2,500 (the "Stockholders' Equity Requirement"). The Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2023, filed with the SEC on May 12, 2023, reported stockholders' equity of $1,143 which is below the Stockholders' Equity Requirement for continued listing on Nasdaq. As of June 30, 2023, the Company does not have a market value of listed securities of $35,000, or net income from continued operations of $500 in the most recently completed fiscal year or in two of the last three most recently completed fiscal years, the alternative quantitative standards for continued listing on Nasdaq. The Letter has no immediate effect on our continued listing on Nasdaq, subject to the Company's compliance with the other continued listing requirements. In accordance with Nasdaq rules, we were provided 45 calendar days, or until July 3, 2023, to submit a plan to regain compliance (the "Compliance Plan"). Our Compliance Plan was submitted before that date and was accepted by the Staff. As a result, we may be granted an extension of up to 180 calendar days from the date of the Staff notification to regain compliance with the Stockholders' Equity Requirement. There can be no assurance that the Company will be able to regain compliance with the Stockholders' Equity Requirement.

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

**Recent Sales of Unregistered Securities**

On July 7, 2023, we issued 13,739 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 exempted securities.

**Issuer Purchases of Equity Securities**

During the three months ended June 30, 2023, 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.**

*(a) Exhibits*

| | |
|---|---|
| 31.1 | Certification Pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934 of the Principal Executive Officer (filed herewith). |
| 31.2 | Certification Pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934 of the Principal Financial Officer (filed herewith). |
| 32.1 | Section 1350 Certification (furnished herewith). |
| 101.INS | Inline XBRL Instance Document (the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document) (filed herewith). |
| 101.SCH | Inline XBRL Taxonomy Extension Schema Document (filed herewith). |
| 101.CAL | Inline XBRL Taxonomy Extension Calculation Linkbase Document (filed herewith). |
| 101.DEF | Inline XBRL Taxonomy Extension Definition Linkbase Document (filed herewith). |
| 101.LAB | Inline XBRL Taxonomy Extension Label Linkbase Document (filed herewith). |
| 101.PRE | Inline XBRL Taxonomy Extension Presentation Linkbase Document (file herewith). |
| 104 | Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101) (filed herewith). |

**SIGNATURES**

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

YIELD10 BIOSCIENCE, INC.

| | | |
|---|---|---|
| August 14, 2023 | By: | /s/ OLIVER PEOPLES<br>Oliver Peoples<br>*President and Chief Executive Officer*<br>*(Principal Executive Officer)* |
| August 14, 2023 | By: | /s/ CHARLES B. HAASER<br>Charles B. Haaser<br>*Chief Accounting Officer*<br>*(Principal Financial and Accounting Officer)* |

**EXHIBIT 31.1**

**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.

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| Dated: August 14, 2023 | /s/ OLIVER PEOPLES | |
| | Name: | Oliver Peoples |
| | Title: | *President and Chief Executive Officer*<br>*(Principal Executive Officer)* |

**EXHIBIT 31.2**

**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: August 14, 2023

/s/ CHARLES B. HAASER

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|---|---|
| Name: | Charles B. Haaser |
| Title: | *Chief Accounting Officer*<br>*(Principal Financial and Accounting Officer)* |

**EXHIBIT 32.1**

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

In connection with the Quarterly Report on Form 10-Q of Yield10 Bioscience, Inc. (the "Company") for the quarter ended June 30, 2023 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.

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| Dated: August 14, 2023 | /s/ OLIVER PEOPLES<br>Oliver Peoples<br>*President and Chief Executive Officer*<br>*(Principal Executive Officer)* |
| Dated: August 14, 2023 | /s/ CHARLES B. HAASER<br>Charles B. Haaser<br>*Chief Accounting Officer*<br>*(Principal Financial and Accounting Officer)* |