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

FORM 10-Q

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

For the quarterly period ended October 31, 2021
or

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

For the transition period from _____ to _____

Commission File Number 001-09974

**ENZO BIOCHEM, INC.**
(Exact name of registrant as specified in its charter)

| New York | 13-2866202 |
|---|---|
| (State or Other Jurisdiction of Incorporation or Organization) | (IRS. Employer Identification No.) |
| 527 Madison Ave, New York, New York | 10022 |
| (Address of Principal Executive office) | (Zip Code) |

212-583-0100
(Registrant's telephone number, including area code)

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 has required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted and posted pursuant to Rule 45 of Regulation S-T (§232.405 of that chapter) during the preceding 12 months (or such shorter period that the registrant was required to submit and post such files).

Yes ☒ No ☐

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

| Title of each class | Trading Symbol | Name of each exchange on which registered |
|---|---|---|
| Common stock $0.01 par | ENZ | New York Stock Exchange |

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 (as defined in Rule 12b-2 of the Exchange Act).

Large accelerated filer ☐
Non-accelerated filer ☒
Emerging growth company ☐

Accelerated filer ☐
Smaller reporting company ☒

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.

Yes ☐ No ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act.)

Yes ☐ No ☒

As of December 1, 2021, the Registrant had 48,471,771 shares of common stock outstanding

ENZO BIOCHEM, INC.
FORM 10-Q
October 31, 2021

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**Part 1 Financial Information**
**Item 1 Financial Statements**

**ENZO BIOCHEM, INC.**
**CONSOLIDATED BALANCE SHEETS**
**(in thousands, except share and per share data)**

| | October 31, 2021 (unaudited) | July 31, 2021 |
|---|---|---|
| ASSETS | | |
| Current assets: | | |
| Cash and cash equivalents | $ 6,356 | $ 13,524 |
| Marketable securities | 29,810 | 29,978 |
| Accounts receivable, net | 11,332 | 10,198 |
| Inventories | 13,957 | 12,652 |
| Prepaid expenses | 4,457 | 4,230 |
| Total current assets | 65,912 | 70,582 |
| | | |
| Property, plant, and equipment, net | 16,953 | 16,585 |
| Right-of-use assets | 16,259 | 17,020 |
| Goodwill | 7,452 | 7,452 |
| Intangible assets, net | 171 | 244 |
| Other, including restricted cash of $750 | 1,392 | 1,808 |
| Total assets | $ 108,139 | $ 113,691 |
| | | |
| LIABILITIES AND STOCKHOLDERS' EQUITY | | |
| | | |
| Current liabilities: | | |
| Accounts payable - trade | 5,929 | 8,123 |
| Accrued liabilities | 13,577 | 14,301 |
| Current portion of operating lease liabilities | 3,365 | 3,419 |
| Other current liabilities and finance leases short term | 235 | 233 |
| Total current liabilities | 23,106 | 26,076 |
| | | |
| Finance leases long term and other liabilities | 96 | 115 |
| Operating lease liabilities, non-current | 13,863 | 14,558 |
| Long term debt - net | 4,314 | 4,356 |
| Total liabilities | $ 41,379 | $ 45,105 |
| | | |
| Commitments and contingencies – see Note 12 | | |
| | | |
| Stockholders' equity: | | |
| Preferred Stock, $.01 par value; authorized 25,000,000 shares; no shares issued or outstanding | — | — |
| Common Stock, $.01 par value; authorized 75,000,000 shares; shares issued and outstanding: 48,471,771 at October 31, 2021 and July 31, 2021 | 485 | 485 |
| Additional paid-in capital | 337,342 | 337,126 |
| Accumulated deficit | (272,696) | (270,377) |
| Accumulated other comprehensive income | 1,629 | 1,352 |
| Total stockholders' equity | 66,760 | 68,586 |
| | | |
| Total liabilities and stockholders' equity | $ 108,139 | $ 113,691 |

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

**ENZO BIOCHEM, INC.**
**CONSOLIDATED STATEMENTS OF OPERATIONS**
**(UNAUDITED)**
**(in thousands, except per share data)**

| | Three Months Ended October 31, | |
|---|---|---|
| | **2021** | **2020** |
| Revenues | $ 26,519 | $ 28,655 |
| Operating costs and expenses: | | |
| Cost of revenues | 15,273 | 16,758 |
| Research and development | 744 | 746 |
| Selling, general and administrative | 11,052 | 10,014 |
| Legal and related expenses | 1,282 | 640 |
| Total operating costs and expenses | 28,351 | 28,158 |
| Operating (loss) income | (1,832) | 497 |
| Other income (expense): | | |
| Interest, net | 39 | (51) |
| Other | (145) | 17 |
| Foreign exchange loss | (381) | (164) |
| Total other expense | (487) | (198) |
| Net (loss) income | $ (2,319) | $ 299 |
| Net (loss) income per common share: | | |
| Basic | $ (0.05) | $ 0.01 |
| Diluted | $ (0.05) | $ 0.01 |
| Weighted average common shares outstanding: | | |
| Basic | 48,472 | 47,895 |
| Diluted | 48,472 | 47,905 |

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

**ENZO BIOCHEM, INC.**
**CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)**
**(UNAUDITED)**
**(in thousands)**

| | Three Months Ended October 31, | |
|---|---|---|
| | **2021** | **2020** |
| Net (loss) income | $ (2,319) | $ 299 |
| Other comprehensive gain: | | |
| Foreign currency translation adjustments | 277 | 171 |
| Comprehensive (loss) income | $ (2,042) | $ 470 |

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

**ENZO BIOCHEM, INC.**
**CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY**
**Three Months Ended October 31, 2021 and 2020**
**(unaudited)**
**(in thousands, except share data)**

| | *Common Stock Shares Issued* | Common Stock Amount | Additional Paid-in Capital | Accumulated Deficit | Accumulated Other Comprehensive Income | Total Stockholders' Equity |
|---|---|---|---|---|---|---|
| **Balance at July 31, 2021** | *48,471,771* | $ 485 | $ 337,126 | $ (270,377) | $ 1,352 | $ 68,586 |
| Net loss for the period ended October 31, 2021 | — | — | — | (2,319) | — | (2,319) |
| Share-based compensation charges | — | — | 216 | — | — | 216 |
| Foreign currency translation adjustments | — | — | — | — | 277 | 277 |
| **Balance at October 31, 2021** | *48,471,771* | $ 485 | $ 337,342 | $ (272,696) | $ 1,629 | $ 66,760 |

| | *Common Stock Shares Issued* | Common Stock Amount | Additional Paid-in Capital | Accumulated Deficit | Accumulated Other Comprehensive Income | Total Stockholders' Equity |
|---|---|---|---|---|---|---|
| **Balance at July 31, 2020** | *47,895,050* | $ 479 | $ 334,473 | $ (278,252) | $ 1,681 | $ 58,381 |
| Net income for the period ended October 31, 2020 | — | — | — | 299 | — | 299 |
| Share-based compensation charges | — | — | 167 | — | — | 167 |
| Foreign currency translation adjustments | — | — | — | — | 171 | 171 |
| **Balance at October 31, 2020** | *47,895,050* | $ 479 | $ 334,640 | $ (277,953) | $ 1,852 | $ 59,018 |

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

**ENZO BIOCHEM, INC.**
**CONSOLIDATED STATEMENTS OF CASH FLOWS**
**(UNAUDITED)**
**(in thousands)**

| | Three Months Ended October 31, | |
|---|---|---|
| | **2021** | **2020** |
| Cash flows from operating activities: | | |
| Net (loss) income | $ (2,319) | $ 299 |
| Adjustments to reconcile net (loss) income to net cash used in operating activities: | | |
| Depreciation and amortization of property, plant and equipment | 611 | 585 |
| Amortization of intangible assets | 90 | 75 |
| Share-based compensation charges | 216 | 167 |
| Share-based 401(k) employer match expense | 167 | 211 |
| Foreign exchange loss | 342 | 152 |
| Unrealized loss on marketable securities | 196 | — |
| | | |
| Changes in operating assets and liabilities: | | |
| Accounts receivable | (1,120) | (2,865) |
| Inventories | (1,289) | (340) |
| Prepaid expenses and other assets | 171 | (314) |
| Accounts payable – trade | (2,198) | (658) |
| Accrued liabilities, other current liabilities and other liabilities | (910) | 1,480 |
| Total adjustments | (3,724) | (1,507) |
| | | |
| Net cash used in operating activities | (6,043) | (1,208) |
| | | |
| Cash flows from investing activities: | | |
| Purchases of marketable securities | (28) | — |
| Capital expenditures | (1,033) | (617) |
| Net cash used in investing activities | (1,061) | (617) |
| | | |
| Cash flows from financing activities: | | |
| Repayments under mortgage agreement and finance leases | (57) | (113) |
| Net cash used in financing activities | (57) | (113) |
| | | |
| Effect of exchange rate changes on cash and cash equivalents | (7) | (13) |
| | | |
| Decrease in cash and cash equivalents and restricted cash | (7,168) | (1,951) |
| Cash and cash equivalents and restricted cash - beginning of period | 14,274 | 48,615 |
| Total cash and cash equivalents and restricted cash - end of period | $ 7,106 | $ 46,664 |
| | | |
| The composition of total cash and cash equivalents and restricted cash is as follows: | | |
| Cash and cash equivalents | 6,356 | 45,914 |
| Restricted cash included in other assets | 750 | 750 |
| Total cash and cash equivalents and restricted cash | $ 7,106 | $ 46,664 |

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

**ENZO BIOCHEM, INC.**
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**
**As of October 31, 2021**
**(Unaudited)**
**(Dollars in thousands, except share data)**

Note 1 – Basis of Presentation

The accompanying consolidated financial statements include the accounts of Enzo Biochem, Inc. and its wholly-owned subsidiaries, Enzo Life Sciences, Enzo Clinical Labs, Enzo Therapeutics, Enzo Realty LLC and Enzo Realty II LLC, collectively or with one or more of its subsidiaries referred to as the "Company" or "Companies". The Company has three reportable segments: Clinical Services, Products, and Therapeutics. The consolidated balance sheet as of October 31, 2021, the consolidated statements of operations, comprehensive (loss) income and stockholders' equity for the three months ended October 31, 2021 and 2020, and the consolidated statements of cash flows for the three months ended October 31, 2021 and 2020 (the "interim statements") are unaudited. In the opinion of management, all adjustments (which include normal recurring adjustments) necessary to present fairly the financial position and operating results for the interim periods have been made. Certain information and footnote disclosure, normally included in annual financial statements prepared in accordance with accounting principles generally accepted in the United States, have been condensed or omitted. The interim statements should be read in conjunction with the consolidated financial statements for the year ended July 31, 2021 and notes thereto contained in the Company's Annual Report on Form 10-K filed with the Securities and Exchange Commission. The consolidated balance sheet at July 31, 2021 has been derived from the audited financial statements at that date. The results of operations for the three months ended October 31, 2021 are not necessarily indicative of the results that may be expected for the fiscal year ending July 31, 2022.

While the rate of transmission of COVID-19 and its variants fluctuates in the US and Europe, it continues to spread in other parts of the world and negatively impact the world economy. Federal, state and local governmental policies and initiatives designed to reduce the transmission of COVID-19 have resulted in, among other things, a significant reduction in physician office visits, the cancellation of elective medical procedures, customers of our products remaining closed or continuing to severely curtail their operations (voluntarily or in response to government orders), and the continuation of work-from-home or shelter-in-place policies. The COVID-19 impact on the Company's operations is consistent with the overall industry and publicly issued statements from competitors, partners, and vendors.

The extent to which our businesses may continue to be affected by the COVID-19 pandemic will largely depend on both current and future developments, including its duration, the emergence and spread of variants, its treatment with authorized vaccines and vaccines in various stages of development and federal approval, vaccination mandates, work and travel advisories and restrictions, and the timing of their easing, all of which are highly uncertain and cannot be reasonably predicted at this time. Global supply chain issues due to the pandemic continue to hamper both the manufacturing of products within the life science segment as well as testing capabilities in the clinical laboratory.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States ("U.S. GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting periods. Actual results could differ from those estimates.

COVID-19

The extent to which the COVID-19 pandemic impacts the Company's business and consolidated results of operations, financial position and cash flows will depend on numerous evolving factors including, but not limited to: the magnitude and duration of the COVID-19 pandemic, the extent to which it will impact worldwide macroeconomic conditions including, but not limited to, employment rates and health insurance coverage, the speed of the anticipated recovery, and governmental and business reactions to the pandemic. These factors are beyond the Company's knowledge and control, and as a result, at this time the Company cannot reasonably estimate the adverse impact the COVID-19 pandemic will have on its businesses but the adverse impact could be material. The Company assessed certain accounting matters that generally require consideration of forecasted financial information in context with the information reasonably available to the Company and the unknown future impacts of COVID-19 as of October 31, 2021 and through the date of this report. The accounting matters assessed included, but were not limited to, the Company's patient self-pay revenue concessions and credit losses in the Clinical Services segment, accounts receivable, inventories and the carrying value of goodwill and other long-lived assets. The Company's future assessment of the magnitude and duration of COVID-19, as well as other factors, could result in additional material impacts to the Company's consolidated financial statements in future reporting periods. We believe COVID-19 volume could decline in the quarters ahead as the percentage of Americans who are vaccinated increases. However, the emergence and spread of variants may cause our COVID-19 testing volume to increase again. Even after the COVID-19 pandemic has moderated and the business and social distancing restrictions have eased, we may continue to experience similar adverse effects to our businesses, consolidated results of operations, financial position and cash flows resulting from a recessionary economic environment that may persist.

***Effect of New Accounting Pronouncements***

*Recently Adopted Accounting Pronouncements*

In December 2019, the FASB issued ASU No. 2019-12 *Income Taxes (Topic 740) Simplifying the Accounting for Income Taxes.* The amendments in the ASU simplify the accounting for income taxes by removing certain exceptions to the general principles of Topic 740. The amendments also improve consistent application of and simplify U.S. GAAP for other areas of Topic 740 by clarifying and amending existing guidance. We adopted the amendments in this ASU beginning August 1, 2021. The adoption of the amendments in this ASU did not have a material impact on our consolidated results of operations, financial position or cash flows

*Pronouncements Issued but Not Yet Adopted*

In June 2016, FASB issued ASU No. 2016-13 Financial Instruments – Credit Losses (Topic 326). This standard changes the impairment model for most financial instruments, including trade receivables, from an incurred loss method to a new forward-looking approach, based on expected losses.

The estimate of expected credit losses will require entities to incorporate considerations of historical information, current information and reasonable and supportable forecasts. Adoption of this standard is required for our annual and interim periods beginning August 1, 2023, provided we qualify as a smaller reporting company at the end of fiscal 2022 and must be adopted using a modified retrospective transition approach. We are currently assessing the impact of the adoption of this standard on our results of operations, financial position and cash flows.

We reviewed all other recently issued accounting pronouncements and have concluded they are not applicable or not expected to be significant to the accounting for our operations.

***Concentration Risk***

Other than the Medicare program, two providers whose programs are included in the "Third-party payers" and "Health Maintenance Organizations" ("HMO's") categories represent approximately 36% and 33% of Clinical Services net revenue for the three months ended October 31, 2021 and 2020 respectively.

Other than the Medicare program, two providers whose programs are included in the "Third-party payers" and "Health Maintenance Organizations" ("HMO's") categories represent 32% of the Clinical Services net accounts receivable as of October 31, 2021.

***Income Taxes***

The Company accounts for income taxes under the liability method of accounting for income taxes. Under the liability method, deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. The liability method requires that any tax benefits recognized for net operating loss carry forwards and other items be reduced by a valuation allowance where it is not more likely than not the benefits will be realized in the foreseeable future. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. Under the liability method, the effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. It is the Company's policy to provide for uncertain tax positions, if any, and the related interest and penalties based upon management's assessment of whether a tax benefit is more likely than not to be sustained upon examination by tax authorities. To the extent the Company prevails in matters for which a liability for an unrecognized tax benefit is established or is required to pay amounts in excess of the liability, the Company's effective tax rate in a given financial statement period may be affected.

We maintain a full valuation allowance on all tax assets and, as a consequence, do not provide any tax benefit for the fiscal 2022 period loss or any tax provision for the fiscal 2021 period pre-tax income.

***Fair Value Measurements***

The Company determines fair value measurements used in its consolidated financial statements based upon the exit price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants exclusive of any transaction costs, as determined by either the principal market or the most advantageous market.

Inputs used in the valuation techniques to derive fair values are classified based on a three-level hierarchy. The basis for fair value measurements for each level within the hierarchy is described below with Level 1 having the highest priority and Level 3 having the lowest.

Level 1: Quoted prices in active markets for identical assets or liabilities.
Level 2: Quoted prices for similar assets or liabilities in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs are observable in active markets.
Level 3: Valuations derived from valuation techniques in which one or more significant inputs are unobservable.

*Marketable securities*

The Company limits its credit risk associated with investments by investing in a mutual fund and an exchange traded fund (ETF) which hold highly rated corporate bonds, asset backed securities, municipal bonds, mortgage obligations and government obligations. These investments are classified as trading securities and are Level 1 fair value investments. As of October 31, 2021, the fair value of these investments was $29,810 and the cost basis was $30,089. We recognized unrealized losses of $196 for the three months ended October 31, 2021.

Note 2 – Net income (loss) per share

Basic net income (loss) per share represents net income (loss) divided by the weighted average number of common shares outstanding during the period. As a result of the net loss for the three months ended October 31, 2021, diluted weighted average shares outstanding are the same as basic weighted average shares outstanding, and do not include the potential common shares from stock options or unearned performance stock units because to do so would be antidilutive. For the three months ended October 31, 2021, approximately 541,000 of potential common shares (“in the money options”) and unvested performance stock units were excluded from the calculation of diluted (loss) per share. For the three months ended October 31, 2020, approximately 10,000 weighted average stock options and unvested performance stock units were included in the calculation of diluted weighted average shares outstanding.

For the three months ended October 31, 2021 and 2020, the effect of approximately 793,000 and 2,146,000 of outstanding “out of the money” options to purchase common shares were excluded from the calculation of diluted net (loss) income per share because their effect would be anti-dilutive.

Note 3 – Revenue Recognition

Clinical Services Revenue

Service revenues in the Company’s clinical services business accounted for 74% of the Company’s total revenues for both the three months ended October 31, 2021 and 2020 and are primarily comprised of a high volume of relatively low-dollar transactions. The services business, which provides clinical testing services, satisfies its performance obligation and recognizes revenues upon completion of the testing process for a specific patient and reporting to the ordering physician. The Company may also perform clinical testing services for other laboratories and will recognize revenue from those services when reported to the ordering laboratory. The Company estimates the amount of consideration it expects to receive from customer groups using the portfolio approach. These estimates of the expected consideration include the impact of contractual allowances and price concessions on our customer group portfolios consisting of healthcare insurers, government payers, client payers and patients as described below. Contracts with customers in our laboratory services business do not contain a financing component, based on the typically limited period of time between performance of services and collection of consideration. The transaction price includes variable consideration in the form of the contractual allowance and price concessions as well as the collectability of the transaction based on patient intent and ability to pay. The Company uses the expected value method in estimating the amount of the variability included in the transaction price.

The following are descriptions of our laboratory services business portfolios:

*Third party payers and Health Maintenance Organizations (HMO's)*

Reimbursements from third party payers, primarily healthcare insurers and HMO's are based on negotiated fee-for-service schedules and on capitated payment rates. Revenues consist of amounts billed net of contractual allowances for differences between amounts billed and the estimated consideration the Company expects to receive from such payers, which considers historical collection and denial experience and the terms of the Company's contractual arrangements. Adjustments to the allowances, based on actual receipts from the third-party payers, are recorded upon settlement.

Collection of the consideration the Company expects to receive is normally a function of providing complete and correct billing information to these third party payers within the various filing deadlines, and typically occurs within 30 to 90 days of billing. Provided the Company has billed healthcare insurers accurately with complete information prior to the established filing deadline, there has historically been little to no collection risk. If there has been a delay in billing, the Company determines if the amounts in question will likely go past the filing deadline, and if so, will reserve accordingly for the billing.

Third-party payers, including government programs, may decide to deny payment or recoup payments for testing that they contend was improperly billed or not medically necessary, against their coverage determinations, or for which they believe they have otherwise overpaid (including as a result of their own error), and we may be required to refund payments already received. Our revenues may be subject to adjustment as a result of these factors among others, including without limitation, differing interpretations of billing and coding guidance and changes by government agencies and payers in interpretations, requirements, and "conditions of participation" in various programs.

*Government Payer - Medicare*

Reimbursements from Medicare are based on fee-for-service schedules set by Medicare, which is funded by the government. Revenues consist of amounts billed net of contractual allowances for differences between amounts billed and the estimated consideration the Company expects to receive from Medicare, which considers historical collection and denial experience and other factors. Adjustments to the allowances, based on actual receipts from the government payers, are recorded upon settlement.

Collection of consideration the Company expects to receive is normally a function of providing the complete and correct billing information within the various filing deadlines and typically occurs within 60 days of billing. Provided the Company has billed the government payer accurately with complete information prior to the established filing deadline, there has historically been little to no collection risk. If there has been a delay in billing, the Company determines if the amounts in question will likely go past the filing deadline, and, if so, it will reserve accordingly for the billing.

*Patient self pay*

Uninsured patients are billed based on established patient fee schedules or fees negotiated with physicians on behalf of their patients. Coinsurance and deductible responsibilities based on fees negotiated with healthcare insurers are also billed to insured patients and included in this portfolio. Collection of billings from patients is subject to credit risk and ability of the patients to pay. Revenues consist of amounts billed net of discounts provided to uninsured patients in accordance with the Company's policies and implicit price concessions. Implicit price concessions represent differences between amounts billed and the estimated consideration the Company expects to receive from patients, which considers historical collection experience and other factors including current market conditions. Adjustments to the estimated allowances, based on actual receipts from the patients, are recorded upon settlement. Patient responsibility is invoiced and if it reaches 91 days outstanding, the account is sent to a collection agency for further processing. After the account has been with the collection agency for at least 105 days, and is determined to be uncollectable it is written off.

The following table represents clinical services net revenues and percentages by type of customer:

| | Three months ended October 31, 2021 | | Three months ended October 31, 2020 | |
|---|---|---|---|---|
| Revenue category | | | | |
| Third-party payer | $ 11,397 | 58% | $ 13,539 | 64% |
| Medicare | 2,880 | 14 | 3,257 | 15 |
| Patient self-pay | 1,945 | 10 | 2,559 | 12 |
| HMO's | 3,519 | 18 | 1,868 | 9 |
| Total | $ 19,741 | 100% | $ 21,223 | 100% |

For three months ended October 31, 2021 and 2020, all of the Company's clinical services revenues were generated within the United States.

Products Revenue

Products revenues consist of the sale of single-use products used in the identification of genomic information and are recognized at a point in time following the transfer of control of such products to the customer, which generally occurs upon shipment. Payment terms for shipments to end-user and distributor customers may range from 30 to 90 days. Any claims for credit or return of goods may be made generally within 30 days of receipt. Revenues are reduced to reflect estimated credits and returns, although historically these adjustments have not been material. Taxes collected from customers relating to product sales and remitted to governmental authorities are excluded from revenue. Amounts billed to customers for shipping and handling are included in revenue, while the related shipping and handling costs are reflected in cost of products.

Products revenue by geography is as follows:

| | Three Months Ended October 31 | |
|---|---|---|
| | 2021 | 2020 |
| United States | $ 3,864 | $ 3,945 |
| Europe | 2,006 | 2,431 |
| Asia Pacific | 908 | 1,056 |
| Products revenue | $ 6,778 | $ 7,432 |

Note 4 - Supplemental disclosure for statement of cash flows

In the three months ended October 31, 2021 and 2020, interest paid by the Company was $56 and $63, respectively.

For the three months ended October 31, 2021 and 2020, the net reductions in the measurement of right of use assets and liabilities included in cash flows from operating activities was $11 and $24, respectively. The changes are included in changes in accrued liabilities, other current liabilities, and other liabilities in the statement of cash flows.

For the three months ended October 31, 2021 and 2020, tax on capital paid by the Company was $29 and $22, respectively.

Note 5 – Inventories

Inventories consist of the following:

| | October 31, 2021 | July 31, 2021 |
|---|---|---|
| Raw materials | $ 1,947 | $ 1,062 |
| Work in process | 2,678 | 2,534 |
| Finished products | 9,332 | 9,056 |
| | $ 13,957 | $ 12,652 |

Note 6 – Goodwill and intangible assets

*Goodwill*

The Company's net carrying amount of goodwill is in the Clinical Laboratory Services segment and is $7,452 as of October 31, 2021 and July 31, 2021.

*Intangible assets*

The Company's change in the net carrying amount of intangible assets, all in the Life Sciences Products segment is as follows:

| | Gross | Accumulated Amortization | Net |
|---|---|---|---|
| July 31, 2021 | $ 27,775 | $ (27,531) | $ 244 |
| Amortization expense | — | (70) | (70) |
| Foreign currency translation | (96) | 93 | (3) |
| October 31, 2021 | $ 27,679 | $ (27,508) | $ 171 |

Intangible assets, all finite-lived, consist of the following:

| | October 31, 2021 | | | July 31, 2021 | | |
|---|---|---|---|---|---|---|
| | Gross | Accumulated Amortization | Net | Gross | Accumulated Amortization | Net |
| Patents | $ 11,027 | $ (11,027) | $ — | $ 11,027 | (11,027) | $ — |
| Customer relationships | 12,005 | (11,834) | 171 | 12,059 | (11,815) | 244 |
| Website and acquired content | 1,023 | (1,023) | — | 1,025 | (1,025) | — |
| Licensed technology and other | 491 | (491) | — | 494 | (494) | — |
| Trademarks | 3,133 | (3,133) | — | 3,170 | (3,170) | — |
| Total | $ 27,679 | $ (27,508) | $ 171 | $ 27,775 | (27,531) | $ 244 |

| At October 31, 2021, information with respect to acquired intangibles is as follows: | Useful life assigned | Weighted average remaining useful life |
|---|---|---|
| Customer relationships | 8 -15 years | 0.5 years |

At October 31, 2021, the weighted average remaining useful life of all intangible assets was approximately six months.

Note 7 – Long term debt

In connection with the purchase of our new facility in November 2018, a wholly-owned subsidiary (the "mortgagor subsidiary") of the Company entered into a Fee Mortgage and Security Agreement (the "mortgage agreement") with Citibank, N.A. (the "mortgagee"). The mortgage agreement provides for a loan of $4,500 for a term of 10 years, bears a fixed interest rate of 5.09% per annum and requires monthly mortgage payments of principal and interest of $30. Debt issuance costs of $72 are being amortized over the life of the mortgage agreement. The balance of unamortized debt issuance cost was $51 at October 31, 2021. At October 31, 2021, the balance owed by the subsidiary under the mortgage agreement was $4.1 million. The Company's obligations under the mortgage agreement are secured by the new facility and by a $750 cash collateral deposit with the mortgagee as additional security. This restricted cash is included in other assets as of October 31, 2021.

The mortgage agreement includes affirmative and negative covenants and events of default, as defined. Events of default include non-payment of principal and interest on debt outstanding, non-performance of covenants, material changes in business, breach of representations, bankruptcy or insolvency, and changes in control. The mortgage includes certain financial covenants. Effective October 19, 2020, the Company and the mortgagee agreed to a covenant restructure whereby the mortgagee waived the Company's financial ratio covenant for the fiscal period ended July 31, 2020 and modified the mortgage to replace a financial ratio covenant with a liquidity covenant. The liquidity covenant required that we own and maintain at all times and throughout the remaining term of the loan at least $25,000 of liquid assets, defined as time deposits, money market accounts and obligations issued by the U.S. government or any of its agencies. The cash collateral agreement was also modified to require compliance with the liquidity covenant for two consecutive fiscal years before the collateral is released back to us. Effective September 29, 2021, the Company and the mortgagee agreed to further covenant restructuring whereby (a) the liquidity covenant was reduced to 150% (or approximately $6 million at October 31, 2021) of the loan principal from $25 million previously, and (b) the collateral requirement would be increased from $0.75 million to $1.0 million. The Company was in compliance as to the liquidity covenant as of October 31, 2021 and increased the collateral deposit to $1.0 million in November.

In April 2020, our subsidiary in Switzerland received a loan of CHF 0.4 million ($0.4 million, based on the foreign exchange rate as of October 31, 2021) from the Swiss government under the "Corona Krise" emergency loan program in response to the pandemic. This loan is uncollateralized, bears 0% interest, is due in 5 years, and may be repaid at any time. This loan is included in long term debt – net as of October 31, 2021.

Minimum future annual principal payments under these agreements as of October 31, 2021 are as follows:

| July 31, | **Total** |
|---|---|
| 2022 | $ 115 |
| 2023 | 160 |
| 2024 | 167 |
| 2025 | 601 |
| 2026 | 186 |
| Thereafter | 3,290 |
| Total principal payments | 4,519 |
| Less: current portion, included in other current liabilities and finance leases short term | (154) |
| Unamortized mortgage cost | (51) |
| Long term debt - net | $ 4,314 |

Note 8 - Leases

The Company determines if an arrangement is or contains a lease at contract inception. The Company leases buildings, office space, patient service centers, and equipment primarily through operating leases, and equipment through a limited number of finance leases. Generally, a right-of-use asset, representing the right to use the underlying asset during the lease term, and a lease liability, representing the payment obligation arising from the lease, are recognized on the balance sheet at lease commencement based on the present value of the payment obligation. For operating leases, expense is recognized on a straight-line basis over the lease term. For finance leases, interest expense on the lease liability is recognized using the effective interest method and amortization of the right-of-use asset is recognized on a straight-line basis over the shorter of the estimated useful life of the asset or the lease term. Short-term leases with an initial term of 12 months or less are not recorded on the balance sheet; the Company recognizes lease expense for these leases on a straight-line basis over the lease term. The Company primarily uses its incremental borrowing rate in determining the present value of lease payments as the Company's leases generally do not provide an implicit rate.

The Company has lease agreements with (i) right-of-use asset payments and (ii) non-lease components (i.e. payments related to maintenance fees, utilities, etc.), which have generally been combined and accounted for as a single lease component. The Company's leases have remaining terms of less than 1 year to 7 years, some of which include options to extend the leases for up to 5 years. The Company's lease terms may include renewal options that are reasonably certain to be exercised and termination options that are reasonably certain not to be exercised. Certain of the Company's lease agreements include rental payments adjusted periodically for inflation or a market rate which are included in the lease liabilities.

| Leases | Balance Sheet Classification | October 31, 2021 | July 31, 2021 |
|---|---|---|---|
| **Assets** | | | |
| Operating | Right-of-use assets | $ 16,259 | $ 17,020 |
| Finance | Property, plant and equipment, net (a) | 229 | 248 |
| **Total lease assets** | | $ 16,488 | $ 17,268 |
| | | | |
| **Liabilities** | | | |
| Current: | | | |
| Operating | Current portion of operating lease liabilities | $ 3,365 | $ 3,419 |
| Finance | Finance leases short term | 83 | 88 |
| | | | |
| Non-current: | | | |
| Operating | Operating lease liabilities, non-current | 13,863 | 14,558 |
| Finance | Finance leases long term and other liabilities | 91 | 110 |
| **Total lease liabilities** | | $ 17,402 | $ 18,175 |

(a) Accumulated amortization of finance lease assets was approximately $152 and $1,100 as of October 31, 2021 and July 31, 2021, respectively.

For the three months ended October 31, components of lease cost were as follows:

| Lease Cost | 2021 | 2020 |
|---|---|---|
| Operating lease cost | $ 1,158 | $ 1,479 |
| Finance lease cost: | | |
| Amortization of leased assets | 19 | 66 |
| Interest on lease liabilities | 3 | 5 |
| Total lease cost | $ 1,180 | $ 1,550 |

The maturity of the Company's lease liabilities as of October 31, 2021 is as follows:

| Maturity of lease liabilities, years ending July 31, | Operating leases | Finance leases | Total |
|---|---|---|---|
| 2022 | $ 3,194 | $ 66 | $ 3,260 |
| 2023 | 3,562 | 88 | 3,650 |
| 2024 | 3,385 | 32 | 3,417 |
| 2025 | 3,158 | — | 3,158 |
| 2026 | 3,150 | — | 3,150 |
| Thereafter | 3,224 | — | 3,224 |
| Total lease payments | 19,673 | 186 | 19,859 |
| Less: Interest (a) | (2,445) | (12) | (2,457) |
| Present value of lease liabilities | $ 17,228 | $ 174 | $ 17,402 |

(a) Primarily calculated using the Company's incremental borrowing rate.

Lease term and discount rate for the three months ended October 31 were as follows:

| Lease term and discount rate | 2021 | 2020 |
|---|---|---|
| Weighted-average remaining lease term (years): | | |
| Operating leases | 5.4 years | 6.1 years |
| Finance leases | 2.0 years | 2.9 years |
| | | |
| Weighted-average discount rate: | | |
| Operating leases | 5.0% | 4.9% |
| Finance leases | 6.72% | 9.1% |

See Note 4 for cash flow information on cash paid for amounts included in the measurement of lease liabilities for the three months ended October 31, 2021 and 2020.

Note 9 – Accrued Liabilities

Accrued liabilities consist of:

| | October 31, 2021 | July 31, 2021 |
|---|---|---|
| Payroll, benefits, and commissions | $ 5,188 | $ 5,856 |
| Professional fees | 786 | 628 |
| Legal | 2,382 | 2,554 |
| Deferred revenue | 2,099 | 2,675 |
| Other | 3,122 | 2,588 |
| | $ 13,577 | $ 14,301 |

*Deferred revenue*

In order to increase cash flow to providers of services and suppliers impacted by the pandemic, the Centers for Medicare and Medicaid Services (CMS) expanded its Accelerated and Advance Payment Program to a broader group of Medicare providers. We applied for and received a $2,526 payment advance from this program in April 2020. The recoupment by CMS of our advance payment had been scheduled to begin 120 days after the date of receipt, at which time every claim we submit from that point would be automatically offset to repay the advance payment. Any unrecouped advance balance remaining after 90 days of the recoupment process was to be repaid such that 210 days after receiving the advance it would be entirely repaid. In October 2020, the Continuing Appropriations Act, 2021 and Other Extensions Act amended the repayment terms of the Advance Payment Program. The recoupment period was extended and the automatic recoupment began one year after the date the advance payment was received, which in our case meant recoupment started April 2021. Additionally, during the first 11 months after recoupment begins, the rate will be 25% and repayment will occur through an automatic recoupment of our Medicare payments. At the end of the 11 month period, the recoupment rate will increase. If the total amount of the advance payment is not recovered within 29 months from the date the advance was received, a demand letter for the outstanding balance will be issued. Since the Company has the right to repay the advance at any time, the entire balance is considered current. As of October 31, 2021 and July 31, 2021, the deferred revenue related to the CMS payment advance was $1,271 and $1,847, respectively.

*Self-Insured Medical Plan*

The Company self-funds medical insurance coverage for certain of its U.S. based employees. The risk to the Company is believed to be limited through the use of individual and aggregate stop loss insurance. As of October 31, 2021 and July 31, 2021, the Company has established a reserve of $263 and $300, which is included in accrued liabilities for payroll, benefits and commissions, for claims that have been reported but not paid and for claims that have been incurred but not reported. The reserve is based upon the Company's historical payment trends, claim history and current estimates.

Note 10 – Stockholders' Equity

***Controlled Equity Offering***

The Company has a Controlled Equity Offering$^{SM}$ Sales Agreement (the "Sales Agreement") with Cantor Fitzgerald & Co., as sales agent ("Cantor"). Under the Sales Agreement, the Company may offer and sell, from time to time, through Cantor, shares of the Company's common stock, par value $0.01 per share (the "Common Stock"). The Company pays Cantor a commission of 3% of the aggregate gross proceeds received under the Sale Agreement. The Company is not obligated to make any sales of the Shares under the Sales Agreement. The offering of Shares pursuant to the Sales Agreement will terminate upon the earlier of (a) the sale of all of the Shares subject to the Sales Agreement or (b) the termination of the Sales Agreement by Cantor or the Company, as permitted therein. The initial agreement contemplated the sale of shares of the Company's common stock having an aggregate offering price of up to $20.0 million.

In December 2014, the Sales Agreement was amended in order for the Company to offer and sell additional shares of Common Stock having an aggregate offering price of $20.0 million.

In September 2017, the Company filed with the SEC a Form S-3 "shelf" registration and sales agreement prospectus covering the offering, issuance and sale of our Common Stock that may be issued and sold under the existing Sales Agreement in an aggregate amount of up to $19.2 million. A total of $150 million of securities could have been sold under this shelf registration, which was declared effective September 15, 2017. The Form S-3 expired in October 2020 but may be refiled at any time at the discretion of the Company. During the three months ended October 31, 2020, the Company did not sell any shares of Common Stock under the Sales Agreement.

***Share-based compensation***

In January 2011, the Company's stockholders approved the adoption of the 2011 Incentive Plan (the "2011 Plan") for the issuance of equity awards, including, among others, options, restricted stock, restricted stock units and performance stock units for up to 3,000,000 shares of common stock. In January 2018, the Company's stockholders approved the amendment and restatement of the 2011 Plan (the "Amended and Restated 2011 Plan") to increase the number of shares of common stock available for grant under the 2011 Plan by 2,000,000 shares of common stock bringing the total number of shares available for grant to 5,000,000 shares of common stock. On October 7, 2020, the Company's Board of Directors approved the amendment and restatement of the Amended and Restated 2011 Plan, with an effective date of October 7, 2020 and subject to approval by the Company's stockholders at the 2020 annual meeting of stockholders of the Company. The amendment and restatement of the Amended and Restated 2011 Plan was for purposes of, among other things, (i) increasing the shares of common stock available for grant under the Amended and Restated 2011 Plan by an additional 4,000,000 shares of common stock bringing the total number of shares available for grant to 9,000,000 shares of common stock and (ii) extending the term of the Amended and Restated 2011 Plan until October 7, 2030. In January 2021, the Company's stockholders approved the amendment and restatement of the Amended and Restated 2011 Plan.

The exercise price of options granted under the Amended and Restated 2011 Plan, as amended and restated, is equal to or greater than fair market value of the common stock on the date of grant. The Amended and Restated 2011 Plan, as amended and restated, will terminate at the earliest of (a) such time as no shares of common stock remain available for issuance under the plan, (b) termination of the plan by the Company's Board of Directors, or (c) October 7, 2030. Awards outstanding upon expiration of the Amended and Restated 2011 Plan, as amended and restated, will remain in effect until they have been exercised or terminated, or have expired. As of October 31, 2021, there were approximately 5,067,000 shares of common stock available for grant under the Amended and Restated 2011 Plan, as amended and restated.

The amounts of share-based compensation expense recognized in the periods presented are as follows:

| | Three months ended October 31, | |
|---|---|---|
| | **2021** | **2020** |
| Stock options and restricted stock | $ 150 | 167 |
| Performance stock units | 66 | — |
| | $ 216 | 167 |

The following table sets forth the amount of expense related to share-based payment arrangements included in specific line items in the accompanying statements of operations:

| | Three months ended October 31, | |
|---|---|---|
| | **2021** | **2020** |
| Selling, general and administrative | $ 212 | 154 |
| Cost of revenues | 4 | 13 |
| | $ 216 | 167 |

No excess tax benefits were recognized during the three month periods ended October 31, 2021 and 2020.

***Stock Option Plans***

The following table summarizes stock option activity during the three month period ended October 31, 2021:

| | Options | Weighted Average Exercise Price | Weighted Average Remaining Contractual Term | Aggregate Intrinsic Value (000s) |
|---|---|---|---|---|
| Outstanding at July 31, 2021 | 2,504,563 | $ 3.74 | | |
| Awarded | 2,000 | $ 3.64 | | |
| Exercised | — | | | $ |
| Cancelled or expired | (3,000) | $ 2.14 | | |
| Outstanding at end of period | 2,503,563 | $ 3.74 | 2.15 years | $ 1,550 |
| Exercisable at end of period | 1,610,326 | $ | 1.2 years | $ |

As of October 31, 2021, the total future compensation cost related to non-vested options, not yet recognized in the statements of operations, was $606 and the weighted average period over which the remaining expense of these awards is expected to be recognized is approximately twelve months.

The intrinsic value of in the money stock option awards at the end of the period represents the Company's closing stock price on the last trading day of the period in excess of the exercise price multiplied by the number of outstanding options.

***Performance Stock Units***

To better align the long-term interest of executives with growing U.S. practices, beginning in fiscal 2018, the Company granted long-term incentive awards in the form of time based stock options and performance-based restricted stock units ("Performance Stock Units" or "PSUs"). The PSUs earned will be determined over a three-year performance period. The primary performance metrics will be revenue and Adjusted EBITDA growth. Payouts based on revenue and adjusted EBITDA goals will be modified based on Total Shareholder Return ("TSR") performance relative to Enzo's peer group.

During the fiscal years ended 2020 and 2019, the Company awarded PSUs to its executive officers. These awards provide for the grant of shares of our common stock at the end of a three–year period based on the achievement of average revenue growth and adjusted EBITDA growth over that period. For the three months ended October 31, 2021, the Company accrued PSU compensation expense of $66. For the three months ended October 31, 2020, the Company did not accrue any compensation expense for these PSUs as the achievement of the growth goals was deemed not probable at that time. As of October 31, 2021, two former officers forfeited a total of 14,500 PSUs awarded in fiscal 2019.

The following table summarizes PSU's granted and outstanding as of October 31, 2021:

| Grant Date | Total Grant | Forfeitures | Outstanding | Fair Market Value At Grant Date (000s) |
|---|---|---|---|---|
| 10/15/2019 | 80,500 | (14,500) | 66,000 | $ 222 |
| 10/19/2020 | 98,600 | — | 98,600 | $ 207 |

Note 11 – Segment reporting

The Company has three reportable segments: Products, Clinical Services and Therapeutics. The Company's Products segment develops, manufactures, and markets products to research and pharmaceutical customers. The Clinical Services segment provides diagnostic services to the health care community. The Company's Therapeutics segment conducts research and development activities for therapeutic drug candidates. The Company evaluates segment performance based on segment income (loss) before taxes. Costs excluded from segment income (loss) before taxes and reported as "Other" consist of corporate general and administrative costs which are not allocable to the three reportable segments. All intersegment activities are eliminated.

Legal and related expenses incurred to defend the Company's intellectual property, which may result in settlements recognized in another segment and other general corporate matters are considered a component of the Other segment. Legal and related expenses specific to other segments' activities are allocated to those segments. Management of the Company assesses assets on a consolidated basis only and therefore, assets by reportable segment have not been included in the reportable segments below. The accounting policies of the reportable segments are the same as those described in the summary of significant accounting policies.

The following financial information represents the operating results of the reportable segments of the Company:

| Three months ended October 31, 2021 | Clinical Services | Products | Therapeutics | Other | Consolidated |
|---|---|---|---|---|---|
| Revenues | $ 19,741 | $ 6,778 | — | — | $ 26,519 |
| Operating costs and expenses: | | | | | |
| Cost of revenues | 11,203 | 4,070 | — | — | 15,273 |
| Research and development | 7 | 732 | 5 | — | 744 |
| Selling, general and administrative | 6,001 | 3,095 | — | 1,956 | 11,052 |
| Legal fee expense | 57 | 13 | — | 1,212 | 1,282 |
| Total operating costs and expenses | 17,268 | 7,910 | 5 | 3,168 | 28,351 |
| Operating income (loss) | 2,473 | (1,132) | (5) | (3,168) | (1,832) |
| Other income (expense): | | | | | |
| Interest, net | (2) | 9 | — | 32 | 39 |
| Other | 49 | 2 | — | (196) | (145) |
| Foreign exchange loss | — | (381) | — | — | (381) |
| Net income (loss) | $ 2,520 | $ (1,502) | $ (5) | $ (3,332) | $ (2,319) |
| Depreciation and amortization included above | $ 418 | 212 | — | 71 | 701 |
| Share-based compensation included in above: | | | | | |
| Selling, general and administrative | 20 | 19 | — | 173 | 212 |
| Cost of revenues | 4 | — | — | — | 4 |
| Total | $ 24 | 19 | — | 173 | 216 |
| Capital expenditures | $ 310 | 486 | — | 237 | 1,033 |

| Three months ended October 31, 2020 | Clinical Services | Products | Therapeutics | Other | Consolidated |
|---|---|---|---|---|---|
| Revenues – Services and Products | $ 21,223 | $ 7,432 | — | — | $ 28,655 |
| Operating costs and expenses: | | | | | |
| Cost of revenues | 12,995 | 3,763 | — | — | 16,758 |
| Research and development | 121 | 592 | $ 33 | — | 746 |
| Selling, general and administrative | 6,098 | 2,445 | 17 | $ 1,454 | 10,014 |
| Legal and related expenses | 25 | 5 | — | 610 | 640 |
| Total operating costs and expenses | 19,239 | 6,805 | 50 | 2,064 | 28,158 |
| Operating income (loss) | 1,984 | 627 | (50) | (2,064) | 497 |
| Other income (expense): | | | | | |
| Interest, net | (6) | 10 | — | (55) | (51) |
| Other | 15 | 2 | — | — | 17 |
| Foreign exchange loss | — | (164) | — | — | (164) |
| Net income (loss) | $ 1,993 | $ 475 | $ (50) | $ (2,119) | $ 299 |
| Depreciation and amortization included above | $ 409 | $ 185 | $ — | $ 66 | $ 660 |
| Share-based compensation included in above: | | | | | |
| Selling, general and administrative | 9 | 16 | — | 129 | 154 |
| Cost of revenues | 13 | — | — | — | 13 |
| Total | $ 22 | $ 16 | $ — | $ 129 | $ 167 |
| Capital expenditures | $ 540 | $ 44 | $ — | $ 33 | $ 617 |

Note 12 Contingencies

The Company has brought cases in the United States District Court for the District of Delaware ("the Court"), alleging patent infringement against various companies. In 2017, the Court ruled that the asserted claims of the '180 and '405 Patents are invalid for nonenablement in cases involving Abbott, Becton Dickinson, Gen-Probe, Hologic, and Roche. That ruling was affirmed by the United States Court of Appeals for the Federal Circuit ("Federal Circuit") in June 2019. Enzo subsequently filed a petition for certiorari regarding the invalidity ruling for the '180 and '405 Patents in February 2020; the Supreme Court denied Enzo's petition on March 30, 2020. There are currently two cases that were originally brought by the Company in the Court. In those two cases, Enzo alleges patent infringement against Becton Dickinson Defendants and Roche Defendants, respectively. The claims in those cases involve the '197 Patent. Both cases are stayed.

In separate inter partes review proceedings before the U.S. Patent and Trademark Office (PTO) involving, among others, Becton Dickinson, certain claims of the '197 Patent were found unpatentable as anticipated or obvious and cancelled by the Patent Trial and Appeals Board ("Board"). Enzo appealed that decision to the Federal Circuit. On August 16, 2019, the Federal Circuit affirmed the Board's decision, finding that each of the challenged claims is unpatentable. The Company filed a petition for rehearing and rehearing en banc on October 30, 2019, which the Federal Circuit denied on December 4, 2019. The Company filed a petition for certiorari with the Supreme Court on March 3, 2020, which was denied.

In April 2019, the Company entered into an agreement with Hologic and Grifols, resolving litigation resulting from four cases originally brought by the Company in the Court. As a result, Enzo dismissed (1) a stayed patent litigation regarding the '180 and '197 Patent against Hologic in the Court; (2) the Consolidated Appeals against Gen-Probe and Hologic resulting from two cases filed in the Court, and (3) the Company's appeal in the litigation involving the '581 Patent that involved both Hologic and Grifols. As a result of the agreement with Hologic, Hologic withdrew from Enzo's Federal Circuit appeal of the Board's adverse rulings in the *inter partes* review proceedings regarding the '197 Patent filed by Hologic and joined by Becton Dickinson mentioned above.

On September 2, 2021, the PTO issued a non-final office action in an ex parte reexamination concerning the '197 Patent. In the office action, the PTO rejected certain claims of the '197 Patent under 35 U.S.C. § 102 and for nonstatutory double-patenting. Enzo's response to the office action is forthcoming.

On February 5, 2020, Harbert Discovery Fund, LP and Harbert Discovery Co-Investment Fund I, LP ("HDF") brought an action in the United States District Court for the Southern District of New York against the Company and five of its present or former Directors, Dr. Elazar Rabbani, Barry W. Weiner, Dr. Bruce A. Hanna, Dov Perlysky and Rebecca Fischer. On March 26, 2020, HDF filed an amended complaint against the same defendants. Count I asserted the Company violated Section 14(a) of the Securities and Exchange Act of 1934 and Rule 14a-9 thereunder by disseminating proxy materials that made two purportedly false statements: (a) a "January 28, 2020 Enzo press release that [purportedly] falsely stated that the Annual Meeting would be 'delayed' by action of the Board to February 25, 2020 when, in fact, the Annual Meeting would convene as planned on January 31, 2020", and (b) a "January 31 Enzo Proxy that [purportedly] falsely stated that the Proposed By-Law Amendment [to Article II, Section 9] would be approved if it received…a majority of the votes….rather than the required Supermajority Vote as provided for in the Charter. "Count II asserted a claim against the individual defendants under Section 20(a) of the Exchange Act premised on Enzo's purported violation of Section 14(a) and Rule 14a-9. Count III asserted the individual defendants breached their fiduciary duty, based on the same conduct and by seeking to entrench themselves. Finally, Count IV purported to assert a derivative claim for a declaration that any amendment to Article II, Section 2 requires the approval of 80% of Enzo's shareholders. On July 16, 2020, the day before the defendants' motion to dismiss was due, HDF asked the Court to dismiss their claims without prejudice. Defendants asked HDF to dismiss the claims with prejudice, but they refused. On July 17, 2020, the Court dismissed the claims without prejudice.

On November 27, 2020, the Company brought an action in the United States District Court for the Southern District of New York against Harbert Discovery Fund, LP, Harbert Discovery Co-Investment Fund I, LP, Harbert Fund Advisors, Inc., Harbert Management Corp. and Kenan Lucas (together, "Harbert"). The Company alleges Harbert made false and misleading representations, or omitted to state material facts necessary to make their statements not misleading, in proxy materials they disseminated seeking the election to the Company's Board of Directors at its 2019 Annual Meeting of two candidates they nominated, in violation of Section 14(a) of the 1934 Exchange Act and Rule 14a-9 thereunder. The Company seeks damages and injunctive relief. On February 15, 2021, Harbert filed a motion to dismiss. On March 8, 2021, the Company filed its opposition to that motion. On March 18, 2021 Harbert filed their reply in further support of the motion. On September 28, 2021, the Court denied the motion with respect to the Company's misrepresentation claims and granted it with respect to its omissions claim. The Company intends to vigorously pursue its misrepresentation claim. On October 12, 2021, HDF filed six counterclaims against the Company and present and former directors Dr. Elazar Rabbani, Barry W. Weiner, Dr. Bruce A. Hanna, Dov Perlysky, Rebeca Fischer, Dr. Mary Tagliaferri and Dr. Ian B. Walters. HDF claims the Company made false and misleading representations in proxy materials it disseminated in connection with its 2019 Annual Meeting, in violation of Section 14(a) of the 1934 Exchange Act and Rule 14a-9 thereunder, and that the Company's directors at that time are liable under Section 20(a) of the Exchange Act for the Company's purported misstatements. HDF also claims that current and former Company directors breached their fiduciary duties by taking four corporate actions: (a) adjourning the 2019 meeting for 25 days; (b) purportedly causing the two Harbert candidates for director, who were elected at the 2019 Meeting, to resign in November 2020; (c) authorizing the November 27, 2020 Lawsuit; and (d) not accepting Dr. Rabbani's resignation as a director in March 2021. On November 10, 2021, the Company and the other counterclaim defendants moved to dismiss the counterclaims. On November 22, 2021, HDF filed its opposition to that motion. On November 26, 2021, the Company and the other counterclaim defendants filed their reply brief in further support of their motion to dismiss. On December 9, 2021, the Court granted the motion to dismiss except with respect to the counterclaim that Enzo violated the securities law by announcing on January 20, 2020 that it had decided to "delay" the 2019 annual meeting when it intended to convene and adjourn the meeting (the "Delay Statement"), and the counterclaims that the then directors are liable for that purported misrepresentation under the securities law or as a breach of fiduciary duty. The Company intends to vigorously defend against these counterclaims. The Court has scheduled a conference for December 15, 2021 to set a discovery schedule.

There can be no assurance that the Company will be successful in any of these litigations. Even if the Company is not successful, management does not believe that there will be a significant adverse monetary impact on the Company. The Company is party to other claims, legal actions, complaints, and contractual disputes that arise in the ordinary course of business. The Company believes that any liability that may ultimately result from the resolution of these matters will not, individually or in the aggregate, have a material adverse effect on its financial position or results of operations.

As described in Note 3, third-party payers, including government programs, may decide to deny payment or recoup payments for testing that they contend was improperly billed or not medically necessary, against their coverage determinations, or for which they believe they have otherwise overpaid (including as a result of their own error), and we may be required to refund payments already received.

Note 13 - Subsequent Events

Effective November 8, 2021, Enzo appointed Hamid Erfanian as Chief Executive Officer. Mr. Erfanian brings over 28 years of experience as a healthcare executive specializing in the diagnostic, medical devices, and life sciences industry. On November 8, 2021, Enzo granted equity awards to Hamid Erfanian. Consistent with the disclosures contained in the Company's Form 8-K filed with the U.S. Securities and Exchange Commission on October 18, 2021, the Company agreed to grant these equity awards to induce Mr. Erfanian to commence employment as its chief executive officer. These equity awards were made in reliance on the employment inducement exemption under the New York Stock Exchange's Listed Company Manual Rule 303A.08, which requires that the Compensation Committee of the Board of Directors approve the inducement awards, which approval was obtained on October 29, 2021, and that the Company make a public announcement of the grant of the inducement awards. The approved equity awards are restricted stock units (RSUs) for 260,000 shares of the common stock of the Company and options to purchase 700,000 shares of common stock of the Company. The RSUs and options are scheduled to vest over three years, with one-third of the units vesting on each of the first three anniversaries of the grant date, subject to certain requirements, including Mr. Erfanian's continued service as an employee of the Company through the applicable vesting dates. The exercise price of the options is $3.39, the closing price of the Company's common stock on November 8, 2021, the grant date. The equity awards were granted outside of the Company's Amended and Restated 2011 Incentive Plan but generally have terms and conditions consistent with those set forth in that plan. The Company filed a Form S-8 covering these equity awards.

**Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations**

The following discussion of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes and other information included elsewhere in this Quarterly Report on Form 10-Q.

**Forward-Looking Statements**

Our disclosure and analysis in this report, including but not limited to the information discussed in this Item 2, contain forward-looking information about our Company's financial results and estimates, business prospects and products in research and development that involve substantial risks and uncertainties. From time to time, we also may provide oral or written forward-looking statements in other materials we release to the public. Forward-looking statements give our current expectations or forecasts of future events. You can identify these statements by the fact that they do not relate strictly to historic or current facts. They use words such as "anticipate", "estimate", "expect", "project", "intend", "plan", "believe", "will", and other words and terms of similar meaning in connection with any discussion of future operations or financial performance.

In particular, these include statements relating to future actions, prospective products or product approvals, future performance or results of current and anticipated products, sales efforts, expenses, interest rates, foreign currency rates, intellectual property matters, the outcome of contingencies, such as legal proceedings, impacts of the COVID-19 pandemic and measures we have taken in response, and financial results. We cannot guarantee that any forward-looking statement will be realized, although we believe we have been prudent in our plans and assumptions. Achievement of future results is subject to risks, uncertainties and inaccurate assumptions. Should known or unknown risks or uncertainties materialize, or should underlying assumptions prove inaccurate, actual results could vary materially from past results and those anticipated, estimated or projected. As a result, investors are cautioned not to place undue reliance on any of our forward-looking statements. Investors should bear this in mind as they consider forward-looking statements. We do not assume any obligation to update or revise any forward-looking statement that we make, even if new information becomes available or other events occur in the future. We are also affected by other factors that may be identified from time to time in our filings with the Securities and Exchange Commission, some of which are set forth in Item 1A - Risk Factors in our Form 10-K filing for the July 31, 2021 fiscal year. You are advised to consult any further disclosures we make on related subjects in our Forms 10-Q, 8-K and 10-K reports to the Securities and Exchange Commission. Although we have attempted to provide a list of important factors which may affect our business, investors are cautioned that other factors may prove to be important in the future and could affect our operating results.

You should understand that it is not possible to predict or identify all such factors or to assess the impact of each factor or combination of factors on our business. Consequently, you should not consider any such list to be a complete set of all potential risks or uncertainties.

**Impact of COVID-19 pandemic**

COVID-19 has severely impacted the economy of the United States and other countries around the world. Federal, state and local governmental policies and initiatives designed to reduce the transmission of COVID-19 and its variants have resulted in, among other things, a significant reduction in physician office visits, the cancellation of elective medical procedures, customers of our products closing or severely curtailing their operations (voluntarily or in response to government orders), and the adoption of work-from-home or shelter-in-place policies. The COVID-19 impact on the Company's operations is consistent with the overall industry and publicly issued statements from competitors, partners, and vendors.

Enzo was granted FDA Emergency Use Authorizations (EUAs) and EUA extensions for our molecular diagnostic and serological testing for COVID-19 and related antibody testing options, for our sample collection kit, an innovative virus-inactivating specimen collection media that lessens transmission risks for healthcare providers and clinical laboratory personnel, for our use of pooled samples, and for our rapid extraction method. Other innovations include the development of more relevant positive controls for the tests, and improved sensitivity. During the fiscal year ended July 31, 2021, we experienced growing demand for COVID-19 testing and we made significant investments to expand our capacity throughout the period in order to satisfy the demand, which substantially increased our testing volumes.

The extent to which our businesses may continue to be affected by the COVID-19 pandemic will largely depend on both current and future developments, including its duration, spread and emergence of variants, its treatment with approved and authorized vaccines, mask and vaccine mandates, work and travel advisories and restrictions, and the timing of their easing, all of which are highly uncertain and cannot be reasonably predicted at this time. We believe COVID-19 volume may decline in the quarters ahead as the percentage of Americans who are vaccinated increases, although the emergence and spread of variants may cause our COVID-19 testing volume to increase again. Global supply chain issues due to the pandemic continue to hamper both the manufacturing of products within the life science segment as well as testing capabilities in the clinical laboratory.

**Overview**

Enzo Biochem, Inc. (the "Company" "we", "our" or "Enzo") is an integrated diagnostics, clinical lab, and life sciences company focused on delivering and applying advanced technology capabilities to produce affordable reliable products and services that enable our customers to meet their clinical needs. Through a connection with the market, we provide advanced biotechnology solutions to the global community as affordable and flexible quality products and services. We develop, manufacture and sell our proprietary technology solutions and platforms to clinical laboratories, specialty clinics, researchers and physicians globally. Enzo's structure and business strategy represent the culmination of years of extensive planning and work. The Company has the unique ability to offer low cost, high performance products and services for diagnostic testing, which ideally positions us to capitalize on the reimbursement pressures facing diagnostic labs. Our pioneering work in genomic analysis coupled with our extensive patent estate and enabling platforms have positioned the Company to continue to play an important role in the rapidly growing molecular medicine marketplaces.

Enzo develops low cost diagnostic platform products and related services. Our platform development includes automation-compatible reagent systems and associated products for sample collection and processing through analysis. We develop affordable products and services to improve healthcare, one of the greatest challenges today. Enzo combines over 40 years of expertise in technology development with assay development capabilities and diagnostic testing services to create high performance, cost-effective, and open assay solutions. The ability to combine these assets in one company is unique. With our strong intellectual property portfolio integrated with assay development know-how, production, distribution, validation and services capabilities, we have enabled sustainable products and services for a market that is facing increasing pressure in costs and reimbursement

Enzo technology solutions and platforms and unique operational structure are designed to reduce overall healthcare costs for both government and private insurers. Our proprietary technology platforms reduces our customers' need for multiple, specialized instruments, and offer a variety of high throughput capabilities together with a demonstrated high level of accuracy and reproducibility. Our genetic test panels are focused on large and growing markets primarily in the areas of personalized medicine, women's health, infectious diseases and genetic disorders.

In the course of our research and development activities, we have built a substantial portfolio of intellectual property assets, comprised of approximately 472 issued patents worldwide and over 64 pending patent applications, along with extensive enabling technologies and platforms.

Below are brief descriptions of each of our operating segments (See Note 11 in the Notes to Consolidated Financial Statements):

**Enzo Clinical Services** is a clinical reference laboratory providing a wide range of clinical services to physicians, medical centers, other clinical labs and pharmaceutical companies. The Company believes having a Clinical Laboratory Improvement Amendments of 1988 ("CLIA") certified and College of American Pathologists ("CAP") accredited medical laboratory located in New York provides us the opportunity to more rapidly introduce cutting edge products and services to the clinical marketplace. Enzo Clinical Labs offers an extensive menu of molecular and other clinical laboratory tests and procedures used in patient care by physicians to establish or support a diagnosis, monitor treatment or medication, and search for an otherwise undiagnosed condition. Our laboratory is equipped with state-of-the-art communication and connectivity solutions enabling the rapid transmission, analysis and interpretation of generated data. We operate a full service clinical laboratory in Farmingdale, New York, a network of over 30 patient service centers throughout New York, New Jersey and Connecticut, two free standing "STAT" or rapid response laboratories in New York City and Connecticut, an in-house logistics department, and an information technology department. Under our license in New York State, we are able to offer testing services to clinical laboratories and physicians nationwide.

The Clinical Laboratory Services reporting unit is impacted by various risk factors, including among others, reduced reimbursements from third party payers for testing performed and from recent health care legislation. Despite the growth we have experienced in previous years, there can be no assurance future growth can be achieved. The introduction of new molecular and esoteric tests is expected to increase our revenue per test and could offset impacts from the above factors. The Company anticipates improved profitability with increased service volume.

**Enzo Products** manufactures, develops and markets products and tools for clinical research, drug development and bioscience research customers worldwide. Underpinned by broad technological capabilities, Enzo Life Sciences has developed proprietary products used in the identification of genomic information by laboratories around the world. Information regarding our technologies can be found in the "Core Technologies" section of our most recently filed Form 10-K. We are internationally recognized and acknowledged as a leader in the development, manufacturing validation and commercialization of numerous products serving not only the clinical research market, but also the life sciences markets in the fields of cellular analysis and drug discovery, among others. Our operations are supported by global operations allowing for the efficient marketing and delivery of our products around the world.

**Enzo Therapeutics** is a biopharmaceutical venture that has developed multiple novel approaches in the areas of gastrointestinal, infectious, ophthalmic and metabolic diseases, many of which are derived from the pioneering work of Enzo Life Sciences. Enzo Therapeutics has focused its efforts on developing treatment regimens for diseases and conditions for which current treatment options are ineffective, costly, and/or cause unwanted side effects. This focus has generated a clinical and preclinical pipeline, as well as numerous patents and patent applications.

***Results of Operations***
***Three months ended October 31, 2021 compared to October 31, 2020***
***(in 000s)***

Comparative Financial Data for the Three Months Ended October 31,

| | 2021 | 2020 | Favorable (Unfavorable) | % Change |
|---|---|---|---|---|
| Revenues | $ 26,519 | $ 28,655 | $ (2,136) | (7) |
| Operating costs and expenses: | | | | |
| Cost of revenues | 15,273 | 16,758 | 1,485 | 9 |
| Research and development | 744 | 746 | 2 | ** |
| Selling, general and administrative | 11,052 | 10,014 | (1,038) | (10) |
| Legal and related expenses | 1,282 | 640 | (642) | (100) |
| Total operating costs and expenses | 28,351 | 28,158 | (193) | (1) |
| Operating (loss) income | (1,832) | 497 | (2,329) | ** |
| Other income (expense): | | | | |
| Interest | 39 | (51) | 90 | ** |
| Other | (145) | 17 | (162) | ** |
| Foreign currency loss | (381) | (164) | (217) | (132) |
| (Loss) income before income taxes | $ (2,319) | $ 299 | $ (2,618) | ** |

**** not meaningful**

**Consolidated Results:**

The "2022 period" and the "2021 period" refer to the three months ended October 31, 2021 of fiscal year 2022 and October 31, 2020 of the fiscal year 2021, respectively.

*Impacts of COVID-19*

In July 2020, Enzo was granted FDA Emergency Use Authorization (EUA) for its molecular diagnostic and serological testing for COVID-19 and related antibody testing options. In January 2021, Enzo received an expansion of its Emergency Use Authorization (EUA) from the U.S. Food and Drug Administration (FDA) authorizing the use of pooled samples containing up to five individual swab specimens with the Company's AMPIPROBE® SARS-Cov-2 Test System utilizing tests on three different platforms including Enzo's proprietary GENFLEX® automated high-throughput platform. In July 2021, Enzo received an expansion of its FDA Emergency Use Authorization (EUA) for the Company's rapid extraction method on its proprietary test system.

At this time, the long term significance of the positive impact from COVID-19 testing and the Company's proprietary product offerings on revenue, profitability and cash flow is still uncertain. We experienced a sequential quarter increase in Clinical laboratory services revenues of $3.0 million in the 2022 period compared to the fourth quarter of the fiscal year ended July 31, 2021 based on increased COVID-19 testing for school and workplace reopenings, as academic institutions went back into session as well as increased testing related to entertainment and travel.

It continues to be challenging to forecast the impact of COVID-19 on our operations in the quarters ahead as the percentage of Americans who are vaccinated increases, which impact may be offset by the emergence and spread of variants, some of which may render vaccines less effective. That is, it is difficult to forecast the effects, duration, and severity of the ongoing COVID-19 pandemic, including the impact on our personnel, supplies, liquidity, collections, and the impact of past or future actions or omissions by the Company or governments in response to the COVID-19 pandemic including, but not limited to, emerging government vaccine and testing mandates, and the availability, accuracy and timeliness of delivery of any tests that the Company develops, collaborates on or provides for the detection of COVID-19.

Clinical services revenues for the 2022 period were $19.7 million compared to $21.2 million in the 2021 period, a decrease of $1.5 million or 7%. Revenues from COVID-19 testing represented 47% and 38% of Clinical revenues in the 2022 and 2021 periods, respectively. Diagnostic testing volume measured by the total number of accessions for all our testing services decreased approximately 6% period over period, resulting in the 2022 period's revenue decrease.

Estimated collection amounts are subject to the complexities and ambiguities of third party payer billing, reimbursement regulations and claims processing, as well as issues unique to Medicare and Medicaid programs, and require us to consider the potential for adjustments when estimating variable consideration in the recognition of revenue in the period that the related services are rendered. In 2014, Congress passed the U.S. Protecting Access to Medicare Act of 2014 (PAMA), which included substantial changes to the way in which clinical laboratory services are paid under Medicare. Beginning in 2018, Medicare payments for clinical laboratory services are paid based upon the volume-weighted median of private payer rates as reported by certain clinical laboratories across the US, replacing the previous system which was based upon fee schedules derived from historical charges for clinical laboratory tests. We estimate that the effect of PAMA directly negatively impacted reimbursements from Medicare and Medicaid in the 2022 and 2021 periods by $0.3 million and $0.4 million, respectively.

Product revenues were $6.8 million in the 2022 period and $7.4 million in the 2021 period, a decrease of $0.6 million or 9%. During the 2022 period, we completed the winding down and closure of our manufacturing and distribution center in Ann Arbor, MI and moved the operations to our Farmingdale, NY campus. As a result of the winding down, we experienced some disruption in the manufacture and distribution of our products during the period, and experienced delays in product availability and fulfillment. This primarily impacted our customers in Europe and to a lesser extent the Asia Pacific region. Revenues in the United States were unchanged.

The cost of Clinical Services was $11.2 million in the 2022 period and $13.0 million in the 2021 period, a decrease of $1.8 million or 14%. During the 2022 period, we greatly reduced our outside reference testing costs for COVID-19 by utilizing our internal manufacturing capabilities, thereby reducing some of our reliance on testing and reagents sourced from third parties, as compared to the 2021 period. Additionally, the decline in non-COVID-19 test accessions resulted in lower reagent costs. The gross profit margin on Clinical Services revenues in the 2022 period was approximately 43% versus 39% in the 2021 period, due to the high margin on greater COVID-19 testing, liquidation rate improvements and the reduction in outside reference testing costs.

The cost of Product revenues was $4.1 million in the 2022 period and $3.8 million in the 2021 period, an increase of $0.3 million or 8%. The gross profit margin on Products was 40% in the 2022 period and 49% in the 2021 period. During the 2022 period, we completed the winding down and closure of our manufacturing and distribution center in Ann Arbor, MI and moved the operations to our Farmingdale, NY campus. As a result there was a temporary increase and overlap in manufacturing headcount and overhead costs during the transition period.

Research and development expenses were $0.7 million in both the 2022 and 2021 periods, incurred primarily in the Life Sciences Products segment. Research activities include lab developed tests (LDTs) for women's health panels and the detection of COVID-19.

Selling, general and administrative expenses were $11.0 million during the 2022 period versus $10.0 million during the 2021 period, an increase of $1.0 million or 10%. The Life Sciences Products expense increased $0.6 million during the 2022 period, of which $0.4 million was due to employee severance expenses associated with the completion of the winding down and closure of our manufacturing and distribution center in Ann Arbor, MI and the cost of moving its operations to our Farmingdale, NY campus. The segment also experienced an increase in marketing expenses such as website ads, promotions and campaigns, trade shows, and an increase in sales & marketing headcount. The Other segment expense increased $0.5 million during the 2022 period primarily due to higher self-insured healthcare benefit costs and higher consulting and professional fees. The Clinical Services expense decreased $0.1 million primarily due to cost savings initiatives and lower sales commissions.

Legal and related expenses were $1.2 million on a net basis during the 2022 period compared to $0.6 million in the 2021 period, an increase of $0.6 million or 100%. During the 2022 period, we incurred higher legal activities associated with strategic initiatives and other corporate matters and recognized a credit of $1.0 million associated with a fee settlement and release agreement with a former legal services provider.

Interest income, net was less than $0.1 million in the 2022 period versus interest expense, net of $0.1 million in the 2021 period, a favorable variance of $0.1 million. During the 2022 period, we earned interest on marketable securities in bond funds, net of interest expense primarily on a mortgage. During the 2021 period, we were not invested in interest earning marketable securities, earned insignificant interest on cash and cash equivalents, and incurred interest expense on the mortgage.

Other (expense) income in the 2022 and 2021 period was ($0.1) million and less than $0.1 million respectively, an unfavorable variance of approximately $0.1 million. During the 2022 period, the primary component of the expense was unrealized losses of $0.2 million on our marketable securities.

The foreign currency revaluation loss recognized by the Life Sciences Products segment during the 2022 period was $0.4 million compared to $0.2 million in the 2021 period, an unfavorable variance of $0.2 million. The 2022 period revaluation loss was due to depreciation of the British pound and Swiss franc versus the U.S. dollar as of the end of the period compared to its start. The revaluation loss in the 2021 period was smaller due to less significant depreciation of the British pound and Swiss franc versus the U.S. dollar as of the end of that period compared to its start.

**Liquidity and Capital Resources**

At October 31, 2021, the Company had cash and cash equivalents and marketable securities totaling $36.2 million of which $0.6 million was in foreign accounts, as compared to cash and cash equivalents of $43.5 million, of which $0.9 million was in foreign accounts at July 31, 2021. It is the Company's current intent to permanently reinvest these foreign funds outside of the United States, and its current plans do not demonstrate a need to repatriate them to fund its United States operations.

The Company had working capital of $42.8 million at October 31, 2021, compared to $44.5 million at July 31, 2021, a decrease of $1.7 million. The decrease in working capital was due to the use of cash and cash equivalents to fund operations and capital expenditures.

Net cash used in operating activities during the 2022 period was approximately $6.0 million, compared to $1.2 million during the 2021 period, an unfavorable variance of $4.8 million. The net cash used in the 2022 period was due to the net loss of $2.3 million, a net increase of $2.2 million in operating assets, (primarily accounts receivable and inventories), and a net decrease of $3.1 million in operating liabilities, (primarily accounts payable and accrued expenses). These uses were partially offset by net non-cash adjustments of $1.6 million. The net cash used in the 2021 period was due to the net income of $0.3 million and net non-cash expenses of approximately $1.2 million which were offset by a net increase of $2.7 million in operating assets and liabilities including, but not limited to, accounts receivable and inventories

Net cash used in investing activities during the 2022 period was approximately $1.1 million as compared to $0.6 million in the 2021 period, an increase of $0.4 million and in both periods primarily represented capital expenditures to support and grow our existing operations, including investments in laboratory equipment, information technology, and the buildout of our Farmingdale campus.

Cash used in financing activities in both the 2022 and 2021 periods was $0.1 million for payments related to a mortgage and finance leases.

As of October 31, 2021 we had a mortgage principal balance of $4.1 million entered into for the purchase of a building facility, which bears a fixed interest rate of 5.09% per annum. It requires monthly mortgage payments of $30. Our obligations under the mortgage agreement are secured by the facility and by a $750 cash collateral deposit with the mortgagee as additional security, which is included in other assets as of October 31, 2021. Effective October 19, 2020, the Company and the mortgagee agreed to a covenant restructure whereby the mortgagee waived the Company's financial ratio covenant for the fiscal period ended July 31, 2020 and modified the mortgage to replace a financial ratio covenant with a liquidity covenant. The liquidity covenant required that we own and maintain at all times, and throughout the remaining term of the loan, at least $25 million of liquid assets, defined as time deposits, money market accounts and commercial paper, and obligations issued by the U.S. government or any of its agencies. The cash collateral agreement was also modified to require compliance with the liquidity covenant for two consecutive fiscal years before the collateral is released back to us. As of July 31, 2021, the Company was in compliance with the financial and liquidity covenants in effect at that time related to this mortgage.

Effective September 29, 2021, the Company and the mortgagee agreed to further covenant restructuring whereby (a) the liquidity covenant was reduced to 150% of the loan principal (or approximately $6 million at October 31, 2021) from $25 million previously, and (b) the collateral requirement would be increased from $0.75 million to $1.0 million. The Company was in compliance as to the liquidity covenant as of October 31, 2021 and increased the collateral deposit to $1.0 million in November.

**Contractual Obligations**

There have been no material changes to our Contractual Obligations as reported in our Form 10-K for the fiscal year ended July 31, 2021. Management is not aware of any material claims, disputes or settled matters concerning third party reimbursement that would have a material effect on our financial statements, except as disclosed in Note 12 to the Consolidated Financial Statements.

**Off-Balance Sheet Arrangements**

The Company does not have any "off-balance sheet arrangements" as such term is defined in Item 303(a)(4) of Regulation S-K.

**Critical Accounting Policies**

*General and estimates*

The Company's discussion and analysis of its financial condition and results of operations are based upon Enzo Biochem, Inc.'s consolidated financial statements, certain information and footnote disclosure, normally included in annual financial statements prepared in accordance with accounting principles generally accepted in the United States, have been condensed or omitted, as permitted under rules promulgated by the Security and Exchange Commission. The preparation of these financial statements requires the Company to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses. These estimates and judgments also affect related disclosure of contingent assets and liabilities.

On an on-going basis, we evaluate our estimates, including those related to contractual expense, allowance for uncollectible accounts, inventory, operating lease liabilities, goodwill and income taxes. The Company bases its estimates on experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

*Revenues – Clinical Services*

*Contractual Adjustment*

The Company's estimate of contractual adjustment is based on significant assumptions and judgments, such as its interpretation of payer reimbursement policies, and bears the risk of change. The estimation process is based on the experience of amounts approved as reimbursable and ultimately settled by payers, versus the corresponding gross amount billed to the respective payers. The contractual adjustment is an estimate that reduces gross revenue, based on gross billing rates, to amounts expected to be approved and reimbursed.

Gross billings are based on a standard fee schedule we set for all third party payers, including Medicare, HMO's and managed care. The Company adjusts the contractual adjustment estimate quarterly, based on its evaluation of current and historical settlement experience with payers, industry reimbursement trends, and other relevant factors. The other relevant factors that affect our contractual adjustment include the monthly and quarterly review of: 1) current gross billings and receivables and reimbursement by payer, 2) current changes in third party arrangements and 3) the growth of in-network provider arrangements and managed care plans specific to our Company.

Our clinical business is primarily dependent upon reimbursement from third-party payers, such as Medicare (which principally serves patients 65 and older) and insurers. We are subject to variances in reimbursement rates among different third-party payers, as well as constant changes of reimbursement rates. Changes that decrease reimbursement rates or coverage would negatively impact our revenues. The number of individuals covered under managed care contracts or other similar arrangements has grown over the past several years and may continue to grow in the future. In addition, Medicare and other government healthcare programs continue to shift to managed care. These trends will continue to reduce our revenues from these programs.

During both the three months ended October 31, 2021 and 2020, the contractual adjustment percentages, determined using current and historical reimbursement statistics, was 83.7% of gross billings. In general, the Company believes a decline in reimbursement rates or a shift to managed care or similar arrangements may be offset by the positive impact of an increase in the number of tests we perform. However, there can be no assurance that we can increase the number of tests we perform or that if we do increase the number of tests we perform, that we can maintain that higher number of tests performed, or that an increase in the number of tests we perform would result in increased revenue.

The Company estimates (by using a sensitivity analysis) that each 1% point change in the contractual adjustment percentage could result in a change in clinical services revenues of approximately $1.2 million and $1.3 million for the three months periods ended October 31, 2021 and 2020 respectively, and a change in the net accounts receivable of approximately $0.6 million as of October 31, 2021.

Our clinical services financial billing system records gross billings using a standard fee schedule for all payers and does not record contractual adjustment by payer at the time of billing. Therefore, we are unable to quantify the effect contractual adjustments recorded during the current period have on revenue recorded in a previous period. However, we can reasonably estimate our monthly contractual adjustment to revenue on a timely basis based on our quarterly review process, which includes:

- an analysis of industry reimbursement trends;
- an evaluation of third-party reimbursement rates changes and changes in reimbursement arrangements with third-party payers;
- a rolling monthly analysis of current and historical claim settlement and reimbursement experience statistics with payers; and
- an analysis of current gross billings and receivables by payer.

*Accounts Receivable*

Accounts receivable are reported at realizable value, net of allowances for doubtful accounts, which is estimated and recorded in the period of the related revenue.

The following is a table of the Company's net accounts receivable by services and by products. Net receivables for Clinical Services are detailed by billing category and as a percent to its total net receivables. At October 31, 2021 and July 31, 2021, approximately 70% and 56% respectively of the Company's net accounts receivable relates to its Clinical Laboratory Services business, which operates in the New York, New Jersey and Connecticut medical communities.

The accounts receivable balance for Life Science products includes foreign receivables of $1.0 million or 29% and $1.4 million or 33% of its total receivables as of October 31, 2021 and July 31, 2021, respectively.

Net accounts receivable

| **Billing category** | **As of October 31, 2021** | | **As of July 31, 2021** | |
|---|---|---|---|---|
| Clinical Services | | | | |
| Third party payers | $ 3,734 | 47% | $ 2,195 | 36% |
| Patient self-pay | 2,053 | 26 | 2,007 | 33 |
| Medicare | 1,039 | 13 | 1,122 | 19 |
| HMO's | 1,096 | 14 | 692 | 12 |
| Total Clinical Services | 7,922 | 100% | 6,016 | 100% |
| Total Life Sciences | 3,410 | | 4,182 | |
| Total accounts receivable - net | $ 11,332 | | $ 10,198 | |

The Company's ability to collect outstanding receivables from third party payers is critical to its operating performance and cash flows. The primary collection risk lies with uninsured patients or patients for whom primary insurance has paid but a patient portion remains outstanding. The Company also assesses the current state of its billing functions in order to identify any known collection or reimbursement issues in order to assess the impact, if any, on the allowance estimates, which involves judgment. The collection of these receivables is not guaranteed from Third Party Payers.

The Company believes that the collectability of its receivables is directly linked to the quality of its billing processes, most notably, those related to obtaining the accurate patient information in order to bill effectively for the services provided. Should circumstances change (e.g. shift in payer mix, decline in economic conditions or deterioration in aging of receivables), our estimates of net realizable value of receivables could be reduced by a material amount. As of October 31, 2021, approximately 32% of Clinical Labs receivables are from two providers whose programs are included in the "Third-party payers" and "Health Maintenance Organizations" ("HMO's") categories.

Billing for clinical services is complicated because of many factors, especially: the differences between our standard gross fee schedule for all payers and the reimbursement rates of the various payers we deal with, disparity of coverage and information requirements among the various payers, and disputes with payers as to which party is responsible for reimbursement.

*Income Taxes*

The Company accounts for income taxes under the liability method of accounting for income taxes. Under the liability method, deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. The liability method requires that any tax benefits recognized for net operating loss carry forwards and other items be reduced by a valuation allowance where it is not more likely than not the benefits will be realized in the foreseeable future. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. Under the liability method, the effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. It is the Company's policy to provide for uncertain tax positions, if any, and the related interest and penalties based upon management's assessment of whether a tax benefit is more likely than not to be sustained upon examination by tax authorities. To the extent the Company prevails in matters for which a liability for an unrecognized tax benefit is established or is required to pay amounts in excess of the liability, the Company's effective tax rate in a given financial statement period may be affected.

*Inventory*

The Company values inventory at the lower of cost (first-in, first-out) or net realizable value, which approximates market. Work-in-process and finished goods inventories consist of material, labor, and manufacturing overhead. Write downs of inventories to net realizable value are based on a review of inventory quantities on hand and estimated sales forecasts based on sales history and anticipated future demand. Unanticipated changes in demand could have a significant impact on the value of our inventory and require additional write downs of inventory which would impact our results of operations.

*Leases - right of use assets and operating lease liabilities*

The Company determines if an arrangement is or contains a lease at contract inception. The Company leases buildings, office space, patient service centers, and equipment primarily through operating leases, and equipment through a limited number of finance leases. Generally, a right-of-use asset, representing the right to use the underlying asset during the lease term, and a lease liability, representing the payment obligation arising from the lease, are recognized on the balance sheet at lease commencement based on the present value of the payment obligation. For operating leases, expense is recognized on a straight-line basis over the lease term. For finance leases, interest expense on the lease liability is recognized using the effective interest method and amortization of the right-of-use asset is recognized on a straight-line basis over the shorter of the estimated useful life of the asset or the lease term. Short-term leases with an initial term of 12 months or less are not recorded on the balance sheet; the Company recognizes lease expense for these leases on a straight-line basis over the lease term. The Company primarily uses its incremental borrowing rate in determining the present value of lease payments as the Company's leases generally do not provide an implicit rate. The Company has lease agreements with (i) right-of-use asset payments and (ii) non-lease components (i.e. payments related to maintenance fees, utilities, etc.,) which have generally been combined and accounted for as a single lease component.

On at least an annual basis, we perform a review of our business to determine if events or changes in circumstances have occurred that indicate that it is more likely than not that the carrying amount of an asset group, including long lived assets such as right of use assets, is not recoverable. If such events or changes in circumstances were deemed to have occurred, we would perform an impairment test of such long lived assets and record any noted impairment loss.

*Goodwill, Intangible and long lived assets*

Goodwill represents the excess of the cost of an acquisition over the fair value of the net assets acquired. Intangible assets (exclusive of patents), arose primarily from acquisitions, and primarily consist of customer relationships, trademarks, licenses, and website and database content. These finite-lived intangible assets are amortized according to their estimated useful lives, which range from 4 to 15 years.

The Company tests goodwill annually as of the first day of the fourth quarter, or more frequently if indicators of potential impairment exist. In assessing goodwill for impairment, the Company has the option to first perform a qualitative assessment to determine whether the existence of events or circumstances leads to a determination that it is more likely than not that the fair value of a reporting unit is less than its carrying amount. If the Company determines that it is not more likely than not that the fair value of a reporting unit is less than its carrying amount, the Company is not required to perform any additional tests in assessing goodwill for impairment. However, if the Company concludes otherwise or elects not to perform the qualitative assessment, then it identifies the reporting units and compares the fair value of each of these reporting units to their respective carrying amount. If the carrying amount of the reporting unit is less than its fair value, no impairment exists. If the carrying amount of the reporting unit is higher than its fair value, the impairment charge is the amount by which the carrying amount exceeds its fair value, not to exceed the total amount of goodwill allocated to the reporting unit.

The Company reviews the recoverability of the carrying value of long-lived assets (including finite lived intangible assets) of an asset or asset group for impairment annually as of the end of the fiscal year, or more frequently if indicators of potential impairment exist. Should indicators of impairment exist, the carrying values of the assets are evaluated in relation to the operating performance and future undiscounted cash flows of an asset or asset group. The net book value of the long lived asset is adjusted to fair value if its expected future undiscounted cash flow is less than its book value.

**Item 3. Quantitative and Qualitative Disclosures About Market Risk**

We are exposed to market risk from changes in foreign currency exchange rates resulting from acquisitions with foreign locations (See Item 1A. Risk Factors section of the Form 10-K for the fiscal year ended July 31, 2021) that could impact our results of operations and financial position. We do not currently engage in any hedging or market risk management tools.

*Foreign Currency Exchange Rate Risk*

The financial reporting of our non-U.S. subsidiaries is denominated in currencies other than the U.S. dollar. Since the functional currency of our non-U.S. subsidiaries is the local currency, foreign currency translation adjustments are accumulated as a component of accumulated other comprehensive income in stockholders' equity. Assuming a hypothetical increase of 10% in the value of the U.S. dollar versus foreign currencies at October 31, 2021, our assets and liabilities would decrease by $0.4 million and $0.1 million, respectively, and our net revenues and net income (loss) would decrease by $0.8 million and $0.3 million, respectively, on an annual basis.

We also maintain intercompany balances and loans with subsidiaries in different local currencies. These amounts are at risk of foreign exchange losses if exchange rates fluctuate. Assuming a hypothetical increase of 10% in the value of the U.S. dollar versus foreign currencies, our pre-tax earnings (loss) would be unfavorably impacted by approximately $1.8 million on an annual basis.

*Interest Rate Risk*

As of October 31, 2021, we have fixed interest rate financing on a building mortgage and equipment finance leases.

**Item 4. Controls and Procedures**

(a) Evaluation of Disclosure Controls and Procedures

As of the end of the period covered by this report, the Company's management conducted an evaluation (as required under Rules 13a-15(b) and 15d-15(b) under the Securities Exchange Act of 1934, as amended (the "Exchange Act")) of the Company's "disclosure controls and procedures" (as such term is defined under the Exchange Act), under the supervision and with the participation of the principal executive officer and the principal financial officer. Based on this evaluation, the principal executive officer and the principal financial officer concluded that the Company's disclosure controls and procedures are effective as of the end of the period covered by this report. Notwithstanding the foregoing, a control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that it will detect or uncover failures within the Company to disclose material information otherwise required to be set forth in the Company's periodic reports.

(b) Changes in Internal Controls over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during the quarter ended October 31, 2021 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

## PART II – OTHER INFORMATION

Item 1. Legal Proceedings

There have been no other material developments with respect to previously reported legal proceedings discussed in the annual report on Form 10-K, as amended for the fiscal year ended July 31, 2021 filed with the Securities and Exchange Commission, other than as noted in Note 12 to the Consolidated Financial Statements as of October 31, 2021.

Item 1A. Risk Factors

There has been no material changes from the risk factors disclosed in Part 1, Item 1A of the Company's Annual Report on Form 10-K for the fiscal year ended July 31, 2021.

Item 6. Exhibits

| Exhibit No. | Exhibit |
|---|---|
| 10.1 | Executive Employment Agreement between the Company and Hamid Erfanian, dated October 14, 2021. |
| 31.1 | Certification of Hamid Erfanian pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. |
| 31.2 | Certification of David Bench pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. |
| 32.1 | Certification of Hamid Erfanian pursuant to 18 U.S.C. §1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. |
| 32.2 | Certification of David Bench pursuant to 18 U.S.C. §1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. |
| 101. INS* | Inline XBRL Instance Document. |
| 101. SCH* | Inline XBRL Taxonomy Extension Schema Document. |
| 101. CAL* | Inline XBRL Taxonomy Extension Calculation Linkbase Document. |
| 101.DEF* | Inline XBRL Taxonomy Extension Definition Linkbase Document. |
| 101.LAB* | Inline XBRL Taxonomy Extension Label Linkbase Document. |
| 101.PRE* | Inline XBRL Taxonomy Extension Presentation Linkbase Document. |
| 104 | Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101). |

* XBRL (Extensible Business Reporting Language) information is being furnished and not filed for purposes of Sections 11 and 12 of the Securities Act of 1933 and Section 18 of the Securities Exchange Act of 1934.

**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.

**ENZO BIOCHEM, INC.**
(Registrant)

Date: December 15, 2021

by: /s/ David Bench
Chief Financial Officer and
Principal Accounting Officer

**Exhibit 10.1**

# EXECUTIVE EMPLOYMENT AGREEMENT

This Executive Employment Agreement (the "**Agreement**"), dated as of October 14, 2021, made between Enzo Biochem, Inc., a New York corporation, with its principal office at 527 Madison Avenue, New York, New York 10022, (the "**Company**") and Hamid Erfanian (the "**Executive**") (collectively, the "**Parties**").

**Whereas**, the Company desires for Executive to provide services to the Company, and wishes to provide Executive with certain compensation and benefits in return for such employment services; and

**Whereas**, Executive wishes to be employed by the Company and to provide personal services to the Company in return for certain compensation and benefits;

**Now, Therefore**, in consideration of the mutual promises and covenants contained herein and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties hereto agree as follows:

**1. Employment by the Company.**

**1.1 Position.** Executive shall serve as the Company's Chief Executive Officer. Executive's employment with the Company shall begin on November 8 , 2021, or as otherwise agreed to by Executive and the Company (the "**Start Date**"). During Executive's employment with the Company, Executive will devote Executive's best efforts and substantially all of Executive's business time and attention to the business of the Company, except for approved vacation periods and reasonable periods of illness or other incapacities permitted by the Company's general employment policies. Executive may engage in civic and not-for-profit activities and serve as a board member on board of directors of noncompetitive publicly traded companies, in each case, so long as such activities do not materially interfere with the performance of Executive's duties hereunder, as reasonably determined by the Board of Directors (the "**Board**").

**1.2 Duties and Location.** Executive shall report to the Board or a designee thereof. Notwithstanding the foregoing, the Company reserves the right to change Executive's direct report and assign other or additional duties or modify duties from time to time. Executive's primary office location shall be the Company's office located in Farmingdale, New York. The Company reserves the right to reasonably require Executive to perform Executive's duties at places other than Executive's primary office location from time to time, and to require business travel.

**1.3 Policies and Procedures.** The employment relationship between the Parties shall be governed by the general employment policies and practices of the Company. Executive shall at all times comply with all applicable laws, rules, and regulations, including those promulgated by regulatory and self-regulatory authorities, securities exchanges, and domestic and foreign agencies and authorities, as well as the Employee Handbook, the Compliance Manual and any other internal policies and procedures established by the Company and made available to employees generally.

**2. Compensation.**

**2.1 Salary.** For services to be rendered hereunder, Executive shall receive a base salary at the rate of **$600,000** per year (the **"Base Salary"**), subject to standard payroll deductions and withholdings and payable in accordance with the Company's regular payroll schedule. Executive's base salary may be reviewed and changed by the Company on notice to the Executive.

**2.2 Annual Bonus** Executive will be eligible for an annual discretionary bonus of between **thirty percent** (30%) and **one hundred percent** (100%) (the "**Bonus Range")** of Executive's Base Salary actually received in any such year (the "**Annual Bonus**"), which will be based on a fiscal year basis, unless otherwise determined by the Company (the "**Bonus Period**"). Whether Executive receives an Annual Bonus for any Bonus Period, and the amount of any such Annual Bonus, will be determined by the Board or the compensation committee thereof in its sole discretion, provided, however, that subject to the remainder of the provisions in this Section 2.2, Executive's Annual Bonus payable in respect of any Bonus Period shall not be less than or higher than the Bonus Range. Executive must remain an active employee in good standing at the time the Annual Bonus is paid in order to earn an Annual Bonus for the prior Bonus Period. The Annual Bonus, if payable, will be paid when bonuses are paid to similarly situated executes, which shall be prior to seventy-five days following the conclusion of the Bonus Period. For the avoidance of doubt, Executive will not be eligible for, and will not earn, any Annual Bonus if Executive's employment terminates for any reason before the Annual Bonus is to be paid, except as otherwise specifically stated in Section 4.2(b). Any Annual Bonus paid for any year shall not create any entitlement to a bonus in a future year.

**2.3 Sign-On Equity Grant.** Subject to the approval of the Board and pursuant to the Company's 2011 Amended and Restated Incentive Plan (the "**Plan**), Executive will be eligible to receive (a) a restricted stock unit ("**RSU**") award for 260,000 shares of the common stock of the Company (the "**RSU Grant**"); and (b) an option to purchase 700,000 shares ("**Options**") of the Company's common stock at the fair market value as determined by the Board as of the date of grant (the "**Option Grant**"). Each of the RSU Grant and the Option Grant shall vest in equal one-third annual increments, with the first vesting on the first anniversary of the grant date provided Executive remains employed in good standing on any such vesting date, and in all cases subject to the terms of the Plan and the Company's Option and RSU grant documents, the execution of which by Executive is required for any such grant. Notwithstanding the foregoing, in the event of Executive's termination without Cause (as defined herein), the RSU Grant and Option Grant, subject to terms of Section 5 herein, shall vest.

**2.4 Annual Equity Grant**. For each year of employment, subject to the approval of the Board and pursuant to the Plan, Executive shall be eligible for a grant of both RSUs and Options in an amount and pursuant to terms as determined by the Board in its sole discretion; provided, however, that in each year, the Board shall provide the Executive with individual and corporate performance metrics which it shall reasonably assess in determining such year's grant. Each annual grant provided hereunder shall vest on terms as provided by the Company and shall be subject to the terms of the Plan and the Company's Option and RSU grant documents, the execution of which by Executive is required for any such grant.

**2.5 Relocation**. As a condition of his employment hereunder, Executive shall relocate to the Farmingdale, New York area within six (6) months of the Start Date. The Company shall reimburse Executive for up to $60,000 in Relocation Expenses relating to such relocation, provided Executive provides evidence of incurring such costs to the reasonable satisfaction of the Company. For purposes hereof, "Relocation Expenses" shall mean reasonable expenses incurred by Executive related to costs associated with the sale of Executive's old residence and the physical movement of all goods and vehicles that are in Executive's current home. The foregoing notwithstanding, if within one (1) year of the relocation date, Executive's employment with the Company is terminated either by the Company for Cause or voluntarily by Executive in the absence of a Good Reason, then Executive shall repay to the Company the amount of the actually-reimbursed Relocation Expenses multiplied by a fraction, the numerator of which equals the number of days from the effective date of such termination to the first anniversary of Executive's relocation date and the denominator of which will be 365 (and the Company may withhold such amount from any payments otherwise due to Executive).

**3. Company Benefits.** Executive shall be eligible to participate in all employee benefit programs for which Executive is eligible under the terms and conditions of the benefit plans that may be in effect from time to time and provided by the Company to its senior-level employees, which as of the Start Date shall include, at minimum, health, medical & dental for the Executive and his spouse and dependents, 401(k), and paid time off including four (4) weeks of paid vacation as well as other benefits, in each case pursuant to and subject to the existing policies and programs maintained by the Company, a summary of which shall be provided to the Executive for review together with this Agreement. The Company reserves the right to cancel or change the benefit plans or programs it offers to the Executive at any time; provided, however, that any such change shall be across the board changes similarly affecting the eligibility requirements of all senior-level employees of the Company.

**4. Termination of Employment; Severance.**

**4.1 At-Will Employment.** The Employee understands that this Agreement does not constitute a contract of employment and does not promise or imply that his employment will continue for any period of time. Unless otherwise agreed to under any employment or other agreement between the Employee and the Company whether executed prior to this Agreement or at any time hereafter, employment with the Company is "at will" and may be terminated either by the Employee or the Company at any time, for any or no reason, and with or without notice Either Executive or the Company may terminate Executive's employment relationship at any time, with or without cause or advance notice, provided that in the event of a termination without Cause (as defined below), or the Executive's resignation, either side shall provide the other with no less than ninety (90) days' advance written notice of any such termination (the "**Notice Period").** During the Notice Period, Executive shall remain an employee of the Company, and shall continue to receive Base Salary, but no other compensation. The Company may elect to have Executive not report to work for all or any portion of such Notice Period. The Company shall have the right, at its sole discretion, to accelerate Executive's termination date to any date subsequent to receiving written notice from Executive, and thus conclude the Notice Period.

**4.2 Termination Without Cause or Resignation for Good Reason.**

**a.** The Company may terminate Executive's employment with the Company at any time without Cause (as defined below) and Executive may resign for Good Reason in accordance with the terms provided herein. .

**b.** If Executive is terminated by the Company without Cause or resigns for Good Reason, the Company shall pay Executive, as severance, (x) the equivalent of twelve (12) months of Executive's Base Salary in effect as of the date of Executive's employment termination, subject to standard payroll deductions and withholdings; and (y) if the termination date occurs subsequent to the conclusion of the fiscal year but prior to the payment of the Annual Bonus to which the fiscal year relates, such Annual Bonus, if any, as computed in accordance with Section 2.2 above (the "**Severance Benefits**"). The Severance Benefits will be paid as a continuation on the Company's regular payroll, beginning no later than the first regularly-scheduled payroll date following the sixtieth (60th) day after Executive's Separation from Service (as defined below), provided the Separation Agreement (as discussed in Paragraph 5) has become effective, and further provided that the Bonus component under (y), if any, shall be paid in a lump sum on the sixtieth day after Executive's Separation from Service.

**c.** For purposes of this Agreement, "**Cause**" for termination will mean: (a) commission of any (i)felony or (ii) crime involving fraud, dishonesty or moral turpitude (whether or not a felony); (b) any action by Executive involving fraud, breach of the duty of loyalty, malfeasance, willful misconduct, or negligence, (c) the failure or refusal by Executive to perform any material duties hereunder or to follow any lawful and reasonable direction of the Company; (d) intentional damage to any property of the Company (reasonable wear and tear from regular use excepted); (e) chronic neglect or absenteeism in the performance of Executive's duties; (f) willful misconduct, gross negligence, or other material violation of Company policy or code of conduct that causes an adverse effect upon the Company; (g) breach of any written agreement with the Company (including this Employment Agreement); or (h) any action that in the reasonable belief of the Board shall or potentially shall subject the Company to material adverse publicity or effects. Prior to any termination for Cause under section (c), (e), (f), (g), or (h), the Board shall provide Executive by written notice with ten (10) calendar days to cure same, provided any such actions underlying Cause are determined by the Board to be curable. Any determination of Cause hereunder shall be made by the Board in its good faith discretion, which shall only be made by the Board and, to the extent deemed practicable by the Board, after providing the Executive an opportunity to respond to any determination or allegation of Cause.

**d.** For purposes of this Agreement, "**Good Reason**" shall mean Executive's resignation following the Company's (a) material diminution of the Executive's title or duties below that of the level of a Chief Executive Officer; (b) material and uncured breach of this Agreement; (c) material reduction in the Executive's annual base salary as in effect on the date hereof or as the same may be increased from time to time, other than as required by exigent business circumstances; or (d) a requirement that Executive perform his job on a permanent basis more than fifty (50) miles from Farmingdale, New York; provided, that Executive shall give written notice to the Company within thirty (30) days following the occasion of any allegation of Good Reason, and the Company shall have thirty (30) days to cure same. In the event such occurrence is not cured, then Executive may terminate Executive's employment for Good Reason hereunder within ninety (90) days from the end of the cure period. The Executive's continued employment prior to the conclusion of the ninety(90) day period stated in the preceding sentence shall not constitute consent to, or waiver of rights with respect to, any act or failure to act by the Company constituting "Good Reason" hereunder, if not cured in the preceding thirty day period.

**4.3 Termination for Any Other Reason.**

**a.** Upon a termination for any reason other than without Cause or for Good Reason as provided in Section 4.2(a), then upon Executive's termination date all payments of compensation by the Company to Executive hereunder will terminate immediately (except as to amounts already earned), and Executive will not be entitled to any Severance Benefits.

**b.** In the event of termination for any reason. Executive shall resign from all positions and terminate any relationships as an employee, advisor, officer or director with the Company and any of its affiliates, each effective on the date of termination.

**5. Conditions to Receipt of Severance Benefits.** In order to receive any Severance Benefits, the termination of Executive's employment must constitute a "separation from service" (as defined under Treasury Regulation Section 1.409A-1(h), without regard to any alternative definition thereunder, a "**Separation from Service**"), and Executive must be in compliance with the terms of this Agreement. Further, the receipt of the Severance Benefits will be conditioned on Executive signing, not revoking, and complying with a separation agreement and release of claims in a form reasonably satisfactory to the Company (the "**Separation Agreement**"). No Severance Benefits will be paid or provided until the Separation Agreement becomes effective.

**6. Representations**. Executive represents and warrants that the execution of this Employment Agreement, Executive's employment by the Company, and the performance of Executive's duties hereunder will not violate or be a breach of any agreement with a former employer, client or any other person or entity, nor does Executive know of any other reason why she would not be able to perform her duties as set forth herein. Further, Executive agree to indemnify the Company for, and hold the Company harmless from, and against, all claims, including, but not limited to, attorneys' fees and expenses of investigation, by any such third party that such third party may now have or may hereafter come to have against the Company based upon or arising out of any noncompetition agreement, invention or secrecy agreement between Executive and such third party which was in existence as of the date of this Agreement. The Company reserves the right to rescind this offer immediately and, if applicable, terminate Executive's employment, without any further obligation to Executive if before or during Executive's employment the Company learns that Executive provided false information or made any misrepresentations in connection with Executive's application for employment with the Company.

**7. Section 409A.** It is intended that all of the Severance Benefits and other payments payable under this Agreement satisfy, to the greatest extent possible, the exemptions from the application of Code Section 409A provided under Treasury Regulations 1.409A-1(b)(4), 1.409A-1(b)(5) and 1.409A-1(b)(9), and this Agreement will be construed to the greatest extent possible as consistent with those provisions, and to the extent not so exempt, this Agreement (and any definitions hereunder) will be construed in a manner that complies with Section 409A. For purposes of Code Section 409A (including, without limitation, for purposes of Treasury Regulation Section 1.409A-2(b)(2)(iii)), Executive's right to receive any installment payments under this Agreement (whether severance payments, reimbursements or otherwise) shall be treated as a right to receive a series of separate payments and, accordingly, each installment payment hereunder shall at all times be considered a separate and distinct payment. Notwithstanding any provision to the contrary in this Agreement, if Executive is deemed by the Company at the time of Executive's Separation from Service to be a "specified employee" for purposes of Code Section 409A(a)(2)(B)(i), and if any of the payments upon Separation from Service set forth herein and/or under any other agreement with the Company are deemed to be "deferred compensation," then to the extent delayed commencement of any portion of such payments is required in order to avoid a prohibited distribution under Code Section 409A(a)(2)(B)(i) and the related adverse taxation under Section 409A, such payments shall not be provided to Executive prior to the earliest of (i) the expiration of the six-month period measured from the date of Executive's Separation from Service with the Company, (ii) the date of Executive's death or (iii) such earlier date as permitted under Section 409A without the imposition of adverse taxation. Upon the first business day following the expiration of such applicable Code Section 409A(a)(2)(B)(i) period, all payments deferred pursuant to this Paragraph shall be paid in a lump sum to Executive, and any remaining payments due shall be paid as otherwise provided herein or in the applicable agreement. No interest shall be due on any amounts so deferred.

**8. Restrictive Covenants**

**8.1** Definitions. The following capitalized terms used in this Agreement shall have the meanings assigned to them below, which definitions shall apply to both the singular and the plural forms of such terms:

**i.** "Confidential Information" "**Confidential Information**" shall be given its broadest possible interpretation and shall mean any and all information of the Company, its affiliates, subsidiaries, and parents (each, a "**Company Entity**", and collectively, "**Company Entities**"), including without limitation: (i) financial and business information relating to any Company Entity, such as information with respect to costs, fees, profits, revenues, markets, mailing/client lists, strategies and plans for future business, new business, product or other development, potential acquisitions or divestitures and new marketing ideas; (ii) product and technical information relating to any Company Entity, such as software, software codes, computer models and research and development projects; (iii) customer or investor information, such as the identity of any Company Entity's clients or investors, the names of representatives of Company Entity customer or investors responsible for entering into contracts with a Company Entity, the amounts paid by such investors or customers to any Company Entity, specific customer or investor needs and requirements, specific customer or investor risk characteristics, and specific customer or investor preferences; (iv) personnel information, such as the identity and number of any Company Entity's other employees and officers, their salaries, bonuses, benefits, skills, qualifications, and abilities; (v) any and all information in whatever form relating to any customer or prospective customer of a Company Entity, including but not limited to its business, employees, operations, systems, assets, liabilities, finances, products, and marketing, selling and operating practices; (vi) any information related to any security system of any Company Entity or any of employees, (vii) any and all information pertaining to the business and or personal affairs of the Company's partners, members and employees, including but not limited to their personal lives, characteristics, opinions, ideas, conduct, habits or background or their business or financial condition, affairs, dealings or operations or their personal database, personal photographs or videotapes, purchases, travel itineraries, social interactions, tax information, emails, private conversations, phone calls and correspondence; (viii) any information not included in (i) through (vii), above, which the Employee knows or should know is subject to a restriction on disclosure or which the Employee knows or should know is considered by any Company Entity's clients or prospective clients to be confidential, sensitive, proprietary, or a trade secret or is not readily available to the public; or (ix) intellectual property, including inventions and copyrightable works. Confidential Information is not generally known or available to the general public, but has been developed, compiled, or acquired by the Company at its effort and expense. Confidential Information can be in any form, including but not limited to verbal, written, or machine readable, including electronic files. By way of example but not limitation of the foregoing, Confidential Information may be acquired by observing documents, things, people or events, by direct communication with clients or others or by overhearing conversations in person or over the telephone or otherwise. "Confidential Information" shall not include information that has become generally available to the public by the act of one who has the right to disclose such information without violating any right or privilege of the Company. Confidential Information shall also not include any information which Executive can prove by verifiable evidence was known to Executive prior to the Start Date.

**ii.** "Restricted Period" from the Start Date through the first anniversary of Executive's Termination Date as pertains to Sections 8.3 and 8.4, and from the Start Date through the second anniversary of Executive's Termination Date as pertains otherwise.

**iii.** "Person" means any individual or any corporation, partnership, joint venture, limited liability company, association or other entity or enterprise.

**iv.** "Restricted Business" means any person, business, entity, organization or group within a larger firm that engages in, or plans to engage in, (i) those parts of the business of the Company and any Company Entity with which you were involved during the employment or about which you received Confidential Information, or (ii) any business activity which the Company or any Company Entity was actively planning to engage in as of the Termination Date;

**v.** "Restrictive Covenants" means the covenants contained in this Section 8.

**vi.** "Termination" means the termination of Executive's employment with the Company, for any reason, whether with or without Cause, upon the initiative of either party.

**vii.** "Termination Date" means the date of Executive's Termination.

**viii.** "Work Product" means all memoranda, summaries, written work product, business plans, formulas, recipes, inventions, innovations, improvements, developments, methods, designs, analyses, drawings, reports and all similar or related information (whether patentable or not) that are based upon Confidential Information and that are conceived, developed or made by Executive during his employment.

**8.2** Restriction on Disclosure and Use of Confidential Information. Executive agrees that Executive shall not, directly or indirectly, use any Confidential Information on Executive's own behalf or on behalf of any Person other than the Company, or reveal, divulge, or disclose any Confidential Information to any Person not expressly authorized by the Company to receive such Confidential Information. This obligation shall remain in effect for as long as the information or materials in question retain their status as Confidential Information. Executive further agrees that he shall fully cooperate with the Company in maintaining the Confidential Information to the extent permitted by law. The parties acknowledge and agree that this Agreement is not intended to, and does not, alter either the Company's rights or Executive's obligations under any state or federal statutory or common law regarding trade secrets and unfair trade practices. Anything herein to the contrary notwithstanding, Executive shall not be restricted from: (i) disclosing information that is required to be disclosed by law, court order or other valid and appropriate legal process; *provided, however*, that in the event such disclosure is required by law, Executive shall provide the Company with prompt notice of such requirement so that the Company may seek an appropriate protective order prior to any such required disclosure by Executive; or (ii) reporting possible violations of federal, state, or local law or regulation to any governmental agency or entity, or from making other disclosures that are protected under the whistleblower provisions of federal, state, or local law or regulation, and Executive shall not need the prior authorization of the Company to make any such reports or disclosures and shall not be required to notify the Company that Executive has made such reports or disclosures. Notwithstanding anything in the foregoing to the contrary, in accordance with the Defend Trade Secrets Act of 2016, Executive will not be criminally or civilly liable for disclosing a trade secret if it was disclosed: (1) to any government official or attorney in confidence directly or indirectly for the sole purpose of reporting or investigating a suspected violation of law; (2) in a complaint or other document filed in a lawsuit or other proceeding if filed under seal; or (3) to an attorney or used in a court proceeding in a retaliation lawsuit if any document containing a trade secret is filed under seal and is not disclosed except pursuant to court order.

**8.3** Non-Competition The Executive acknowledges and agrees that solely by reason of employment by the Company, the Executive has and will come into contact with a significant number of the Company's customers and prospective customers and have access to Confidential Information (as defined herein) and trade secrets relating thereto, including those regarding the Company's clients, prospective clients, proprietary business models and strategies, and related information. Consequently, the Employee covenants and agrees that during the Restricted Period, Executive shall not directly or indirectly, an individual proprietor, partner, stock-holder, officer, employee, director, joint venturer, investor, lender, or in any other capacity whatsoever (other than as the holder of not more than three percent (3%) of the total outstanding stock of a publicly held company), engage in the Restricted Business.

**8.4** Non-Solicitation. Executive agrees that, during the Restricted Period, he shall not, directly or indirectly, in his own capacity or through any other entity or person: (i) solicit, persuade or induce any investor of the Company to terminate, reduce, disrupt or refrain from renewing or extending its contractual or other relationship with the Company in regard to the purchase of products or services, procured, performed, manufactured, marketed, or sold, by the Company; (ii) in any way interfere with the relationship between any such investor, client, supplier, licensee, licensor, franchisee or business relation of the Company and/or any of its affiliates; (iii) induce or attempt to induce any employee of the Company or any of its affiliates to leave the employ of the Company and/or any of its affiliates, or in any way interfere with the relationship between the Company and/or any of its affiliates on the one hand and any employee thereof on the other hand; or (iv) solicit to hire (other than through general advertisements for employment not directed at employees of the Company or any of its affiliates) or hire any person who was an employee of any of the Company or any of its affiliates at any time during the one (1) year preceding such solicitation.

**8.5** Non-Disparagement. Executive agrees that, at any time hereinafter, he will not do or say anything, including but not limited to communicating on the internet (including but not limited to any posting or reference on any social networking site), or via e-mail, telephone, face-to-face communication, or otherwise, that (i) criticizes or disparages the Company or its management, practices, policies, products or services; (ii) disrupts or impairs the normal, ongoing business operations of Company, or any member of the Company Group; or (iii) harms the business reputation of Company or the Company Group with its employees, customers, suppliers, contractors or the public. Executive will not discuss any information (whether confidential or not) about the Company with any reporter, author, producer, or similar person or entity, or take any other action seeking to publicize or disclose any such information in any way likely to result in such information being made available to the general public in any form, including books, articles or writings of any kind, as well as film, videotape, audiotape or any other medium or as commonly provided on a resume. Executive acknowledges and agree that these prohibitions extend to statements, written or verbal, made to anyone and includes statements made via social media including on blogs or social networking sites, including but not limited to Facebook, LinkedIn, or Twitter. Neither the Board nor the Company or any of its affiliates shall authorize any disparaging comments about Executive. Notwithstanding the foregoing, nothing in this paragraph shall prevent either Executive, the Board or the Company or any of its affiliates from making any truthful statement to the extent necessary with respect to any litigation, arbitration, or mediation involving this Agreement, including, but not limited to, enforcement of this Agreement or as required by law or by any court, arbitrator, mediator, or administrative or legislative body with actual or apparent jurisdiction to order such person to disclose or make accessible such information.

**8.6** Return of Materials. Executive agrees that he will not retain or destroy (except as set forth below), and will immediately return to the Company on or, if specifically requested, prior to the Termination Date, or at any other time the Company requests such return, any and all Company property, including Confidential Information and all other documents, materials, information, and property, including but not limited to memoranda, letters, notes, plans, reports, analyses, recaps, jump drives, disks, tapes, journals, notebooks, and any Company-provided computer, cell phone, Blackberry, beeper, keys, key fob, security card, phone card, credit cards, computer user name and password, and/or voicemail code, all other files and documents relating to the Company and its business (regardless of form, but specifically including all electronic files and data of the Company). Executive will not make, distribute, or retain copies of any such information or property. Executive agrees that the ownership and right of control of all programs, databases, electronic files, reports, records and supporting documents prepared by, for or on behalf of Executive in connection with the performance of Executive's duties during his employment are vested exclusively in the Company and remain the exclusive property of the Company.

**8.7** Inventions. Executive acknowledges and agrees that any and all Work Product, products, improvements, and inventions or creations conceived or made by Executive during the period of Executive's employment with the Company relating to the activities or business of the Company or the Company Group are the sole and exclusive property of the Company or its nominee. Executive shall promptly disclose any Work Product to the Company and perform all acts and things and sign whatever documents and agreements are necessary to confirm and vest the entire right, title and interest in such Work Product in the Company, including copyright assignments, patent applications and other documents and papers. Any assignment of Work Product includes all rights of attribution, paternity, integrity, modification, disclosure and withdrawal, and any other rights throughout the world that may be known as or referred to as "moral rights," "artist's rights," "droit moral" or the like (collectively, "**Moral Rights").** To the extent that Moral Rights cannot be assigned under applicable law, Executive hereby waives and agrees not to enforce any and all Moral Rights, including, without limitation, any limitation on subsequent modification, to the extent permitted under applicable law. Executive agrees to assist the Company, or its designee, at its expense, in every proper way to secure the Company's, or its designee's, rights in the Company Inventions and any copyrights, patents, trademarks, mask work rights, Moral Rights, or other intellectual property rights relating thereto in any and all countries, including the disclosure to the Company or its designee of all pertinent information and data with respect thereto, the execution of all applications, specifications, oaths, assignments, recordations, and all other instruments which the Company or its designee shall deem necessary in order to apply for, obtain, maintain and transfer such rights, or if not transferable, waive and agree never to assert such rights, and in order to assign and convey to the Company or its designee, and any successors, assigns and nominees the sole and exclusive right, title and interest in and to such Company Inventions, and any copyrights, patents, mask work rights or other intellectual property rights relating thereto. Executive hereby irrevocably designates and appoints the Company and its duly authorized officers and agents as Executive's agent and attorney-in-fact, to act for and in Executive's behalf and stead to execute and file any such instruments and papers and to do all other lawfully permitted acts to further the application for, prosecution, issuance, maintenance or transfer of patent, copyright, mask work and other registrations related to such Work Product. These obligations shall be binding upon Executive and Executive's heirs, assigns, executors, administrators, agents or other legal representatives. Executive may not use, disclose to third parties or otherwise retain any such works or inventions, without the prior written permission of the Company.

**8.8** Cooperation The Executive shall cooperate with the Company and its counsel in connection with any litigation or regulatory or self-regulatory inquiry, investigation or proceeding relating to activities of Executive, or by activities of others of which the Executive may have knowledge, and this obligation shall survive the termination of this Agreement. The Company shall reimburse the Executive for reasonable out-of-pocket travel and other reasonable incidental expenses (other than legal expenses unless such legal expenses are requested by the Executive as a result of divergent interests between Executive and the Company, and approved by the Board in writing) incurred as a result of the Executive's cooperation pursuant to the immediately preceding sentence.

**8.9** Exceptions. Nothing in this Agreement shall limit the rights of any government agency or any party's right of access to, participation or cooperation with any government agency. Notwithstanding anything to the foregoing, nothing herein, or in any other agreement or policy, shall limit Executive's right under applicable law to file a charge or complaint with the U.S. Equal Employment Opportunity Commission, the National Labor Relations Board, the Occupational Safety and Health Administration, the Securities and Exchange Commission, or any other federal, state or local governmental agency or commission ("**Government Agencies**"). Executive further understands that this Agreement does not limit his ability to communicate with any Government Agencies or otherwise participate in any investigation or proceeding that may be conducted by any Government Agency, including providing documents or other information, without notice to the Company. This Agreement does not limit Executive's right to receive an award for information provided to any Government Agencies.

**8.10** Enforcement of Restrictive Covenants.

**i.** Rights and Remedies Upon Breach. The parties specifically acknowledge and agree that the remedy at law for any breach of the Restrictive Covenants will be inadequate, and that in the event Executive breaches, or threatens to breach, any of the Restrictive Covenants, the Company shall have the right and remedy, without the necessity of proving actual damage or posting any bond, to enjoin, preliminarily and permanently, Executive from violating or threatening to violate the Restrictive Covenants and to have the Restrictive Covenants specifically enforced by any court of competent jurisdiction, it being agreed that any breach or threatened breach of the Restrictive Covenants would cause irreparable injury to the Company and that money damages would not provide an adequate remedy to the Company.

**ii.** Severability and Modification of Covenants. Executive acknowledges and agrees that each of the Restrictive Covenants is reasonable and valid in time and scope and in all other respects. The parties agree that it is their intention that the Restrictive Covenants be enforced in accordance with their terms to the maximum extent permitted by law. Each of the Restrictive Covenants shall be considered and construed as a separate and independent covenant. Should any part or provision of any of the Restrictive Covenants be held invalid, void, or unenforceable, such invalidity, voidness, or unenforceability shall not render invalid, void, or unenforceable any other part or provision of this Agreement or such Restrictive Covenant. If any of the provisions of the Restrictive Covenants should ever be held by a court of competent jurisdiction to exceed the scope permitted by the applicable law, such provision or provisions shall be automatically modified to such lesser scope as such court may deem just and proper for the reasonable protection of the Company's legitimate business interests and may be enforced by the Company to that extent in the manner described above and all other provisions of this Agreement shall be valid and enforceable.

**9. Third Party Confidential Information.** In Executive's work for the Company, Executive will be expected to not, and shall not to use or disclose any confidential information, including trade secrets, of any former employer or other person to whom Executive has an obligation of confidentiality. Rather, Executive will be expected to use only that information which is generally known and used by persons with training and experience comparable to Executive's own, which is common knowledge in the industry or otherwise legally in the public domain, or which is otherwise provided or developed by the Company. Executive agrees not to bring onto Company premises any unpublished documents or property belonging to any former employer or other person to whom Executive has an obligation of confidentiality.

**10. Governing Law; Dispute Resolution.** The interpretation and application of this Employment shall be governed by the laws of the State of New York without regard to principles of conflict of laws, other than laws which violate a fundamental public policy of the state of employ, in which case such state's laws shall govern with regard to such policies. Except for claims requesting injunctive relief, any dispute or claim arising out of, in connection with, or relating to this Agreement (including without limitation its subject matter, interpretation, or formation) or to Executive's employment or relationship with the Company shall be resolved by binding arbitration to be held in or around Farmingdale, New York, before three (3) arbitrators selected by the American Arbitration Association, conducted in accordance with the then-prevailing Employment Arbitration Rules and Mediation Procedures of the American Arbitration Association. A copy of these rules can be accessed through the American Arbitration Association's website (www.adr.org). The arbitrators' decision will be final and binding in accordance with the Federal Arbitration Act and may be enforced in any court of competent jurisdiction. The arbitrators will not have the right to modify or change any of the terms of this Employment Agreement. The arbitrators, and not any court, shall have exclusive authority to resolve any dispute relating to the interpretation, applicability, enforceability or formation of this Employment Agreement including any claim that all or any part of this Agreement is void or voidable. The parties agree that the arbitrators may provide all appropriate remedies at law and equity and will have the power to summarily adjudicate claims and/or enter summary judgment in appropriate cases. In any arbitration proceeding conducted pursuant to this paragraph, the parties shall have the right to discovery, to call witnesses, and to cross-examine the other party's witnesses. The arbitrator shall render a final decision in writing, setting forth the reasons for the arbitration award. Both parties are bound by this agreement to arbitrate, but it does not include disputes, controversies or differences which may not by law be arbitrated. The parties agree that the arbitration proceedings described in this Section 10 are to be treated as confidential, and that the parties will act to protect the confidentiality of the documents, facts, and proceedings related to the arbitration. THE PARTIES WAIVE THEIR RIGHT TO HAVE ANY SUCH DISPUTE, CLAIM OR CONTROVERSY DECIDED BY A JUDGE OR JURY IN A COURT. THE PARTIES ALSO AGREE THAT EACH MAY BRING CLAIMS AGAINST THE OTHER ONLY IN THEIR INDIVIDUAL CAPACITIES, AND NOT AS A PLAINTIFF OR CLASS MEMBER IN ANY PURPORTED CLASS OR COLLECTIVE PROCEEDING. THE PARTIES ALSO AGREE THAT EACH MAY NOT BRING CLAIMS AGAINST THE OTHER IN ANY PURPORTED REPRESENTATIVE ACTION, EXCEPT TO THE EXTENT THIS STATEMENT IS UNENFORCEABLE UNDER THE LAW.

**11. General Provisions.**

**11.1 Notices.** Any notices provided must be in writing and will be deemed effective upon the earlier of personal delivery, email, or the next day after sending by overnight carrier, to the Company at its primary office location and to Executive at the address as listed on the Company payroll.

**11.2 Severability.** Whenever possible, each provision of this Agreement will be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement is held to be invalid, illegal or unenforceable in any respect under any applicable law or rule in any jurisdiction, such invalidity, illegality or unenforceability will not affect any other provision or any other jurisdiction, but this Agreement will be reformed, construed and enforced in such jurisdiction to the extent possible in keeping with the intent of the parties.

**11.3 Waiver.** Any waiver of any breach of any provisions of this Agreement must be in writing to be effective, and it shall not thereby be deemed to have waived any preceding or succeeding breach of the same or any other provision of this Agreement.

**11.4 Complete Agreement.** This Agreement constitutes the entire agreement between Executive and the Company with regard to this subject matter and is the complete, final, and exclusive embodiment of the Parties' agreement with regard to this subject matter. This Agreement is entered into without reliance on any promise or representation, written or oral, other than those expressly contained herein, and it supersedes any other such promises, warranties or representations. It is entered into without reliance on any promise or representation other than those expressly contained herein, and it cannot be modified or amended except in a writing signed by a duly authorized officer of the Company.

**11.5 Counterparts.** This Agreement may be executed in separate counterparts, any one of which need not contain signatures of more than one party, but all of which taken together will constitute one and the same Agreement.

**11.6 Headings.** The headings of the paragraphs hereof are inserted for convenience only and shall not be deemed to constitute a part hereof nor to affect the meaning thereof.

**11.7 Successors and Assigns.** This Agreement is intended to bind and inure to the benefit of and be enforceable by Executive and the Company, and their respective successors, assigns, heirs, executors and administrators. The Company may freely assign this Agreement, without Executive's prior written consent. Executive may not assign any of his duties hereunder and he may not assign any of her rights hereunder without the written consent of the Company. The Company will require any successor (whether direct or indirect, by purchase, merger, consolidation, assign or otherwise) to all or substantially all of the business and/or assets of the Company to assume expressly and agree to perform this Agreement in the same manner and to the same extent that the Company would be required to perform it if no such succession had taken place. As used in this Agreement, "Company" shall mean the Company as hereinbefore defined and any successor to its business and/or assets as aforesaid.

**11.8 Background Check and Ability to Work**. This offer of employment is contingent upon verification of Executive's identity and authorization to legally work in the United States, a background and reference check, and all other Company practices and procedures as reasonably requested by the Company.

**11.9 Tax Withholding** . All payments and awards contemplated or made pursuant to this Agreement will be subject to withholdings of applicable taxes in compliance with all relevant laws and regulations of all appropriate government authorities. Executive acknowledges and agrees that the Company has neither made any assurances nor any guarantees concerning the tax treatment of any payments or awards contemplated by or made pursuant to this Agreement. Executive has had the opportunity to retain a tax and financial advisor and fully understands the tax and economic consequences of all payments and awards made pursuant to the Agreement.

***

**You acknowledge and agree that you have read and understand this Employment agreement and you voluntarily agree to the terms and conditions contained herein.**

**We look forward to you joining the Company. If you accept this offer of employment, please sign and return to me this Employment Agreement attached by no later than October 14, or this offer shall expire.**

**In Witness Whereof**, the Parties have executed this Agreement on the day and year first written above.

**ENZO BIOCHEM INC.**

By: /s/ Barry Weiner
Barry Weiner
President
October 14, 2021

**Executive**

/s/ Hamid Erfanian
Hamid Erfanian
October 14, 2021

**EXHIBIT 31.1**

**CERTIFICATION PURSUANT TO**
**SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Hamid Erfanian, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Enzo Biochem, Inc. (the "registrant").

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 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 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 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.

Date: December 15, 2021

By: /s/ Hamid Erfanian
Hamid Erfanian
Chief Executive Officer

**EXHIBIT 31.2**

**CERTIFICATION PURSUANT TO**
**SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, David Bench, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Enzo Biochem, Inc. (the "registrant").

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 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 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 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.

Date: December 15, 2021

By: /s/ David Bench
David Bench
Chief Financial Officer and
Principal Accounting Officer

**EXHIBIT 32.1**

**CERTIFICATION PURSUANT TO**
**TITLE 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 of Enzo Biochem, Inc., and Subsidiaries ("the Company") on Form 10-Q for the period ended October 31, 2021 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Hamid Erfania, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: December 15, 2021

By: /s/ Hamid Erfanian
Hamid Erfanian
Chief Executive Officer

**EXHIBIT 32.2**

**CERTIFICATION PURSUANT TO**
**TITLE 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 of Enzo Biochem, Inc., and Subsidiaries ("the Company") on Form 10-Q for the period ended October 31, 2021 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, David Bench, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: December 15, 2021

By: /s/ David Bench
David Bench
Chief Financial Officer and
Principal Accounting Officer