

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION WASHINGTON, DC 20549  
FORM 10-Q

Quarterly report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

For the quarterly period ended March 31, 2025

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 001-33957



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

**Delaware**  
(State or other jurisdiction of Incorporation or organization)

**04-3306140**  
(I.R.S. Employer Identification No.)

**84 October Hill Road, Holliston, Massachusetts 01746**  
(Address of Principal Executive Offices, including zip code)

**(508) 893-8999**  
(Registrant's telephone number, including area code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, \$0.01 par value	HBIO	The Nasdaq Global Market

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

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

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

Large accelerated filer   
Non-accelerated filer

Accelerated filer   
Smaller reporting company   
Emerging growth 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.

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 May 5, 2025, there were 44,213,746 shares of the registrant's common stock issued and outstanding.

HARVARD BIOSCIENCE, INC.

FORM 10-Q

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## PART I. FINANCIAL INFORMATION

## Item 1. Financial Statements.

**HARVARD BIOSCIENCE, INC.**  
**CONDENSED CONSOLIDATED BALANCE SHEETS**  
(Unaudited, in thousands, except share and per share data)

	March 31, 2025	December 31, 2024
<b>Assets</b>		
Current assets:		
Cash and cash equivalents	\$ 5,546	\$ 4,108
Accounts receivable, net	13,479	14,866
Inventories	22,816	23,245
Other current assets	3,061	2,898
Total current assets	44,902	45,117
Property, plant and equipment, net	5,009	5,106
Operating lease right-of-use assets	7,283	6,132
Goodwill	8,960	56,324
Intangible assets, net	10,130	11,132
Other long-term assets	3,517	2,833
Total assets	\$ 79,801	\$ 126,644
<b>Liabilities and Stockholders' Equity</b>		
Current liabilities:		
Debt	\$ 35,958	\$ 36,956
Accounts payable	4,808	4,787
Contract liabilities	3,427	3,806
Other current liabilities	11,410	9,409
Total current liabilities	55,603	54,958
Deferred tax liability	717	710
Operating lease liabilities	7,230	6,381
Other long-term liabilities	1,416	1,255
Total liabilities	64,966	63,304
Commitments and contingencies - Note 13		
Stockholders' equity:		
Preferred stock, par value \$0.01 per share, 5,000,000 shares authorized	-	-
Common stock, par value \$0.01 per share, 80,000,000 shares authorized:		
44,213,746 shares issued and outstanding at March 31, 2025;		
44,074,475 shares issued and outstanding at December 31, 2024	442	441
Additional paid-in-capital	237,104	236,579
Accumulated deficit	(208,350)	(158,010)
Accumulated other comprehensive loss	(14,361)	(15,670)
Total stockholders' equity	14,835	63,340
Total liabilities and stockholders' equity	\$ 79,801	\$ 126,644

See accompanying notes to condensed consolidated financial statements.

**HARVARD BIOSCIENCE, INC.**  
**CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS**  
**(Unaudited, in thousands, except per share data)**

	<b>Three Months Ended March 31,</b>	
	<b>2025</b>	<b>2024</b>
Revenues	\$ 21,774	\$ 24,512
Cost of revenues	9,590	9,740
Gross profit	<u>12,184</u>	<u>14,772</u>
Sales and marketing expenses	4,971	5,904
General and administrative expenses	5,185	5,963
Research and development expenses	2,321	2,885
Amortization of acquired intangible assets	1,160	1,333
Goodwill impairment - Note 4	47,951	-
Other operating expenses - Note 1	264	966
Total operating expenses	<u>61,852</u>	<u>17,051</u>
Operating loss	<u>(49,668)</u>	<u>(2,279)</u>
Other income (expense):		
Interest expense	(802)	(751)
Loss on equity securities - Note 6	-	(1,312)
Other expense, net	(324)	(142)
Total other expense	<u>(1,126)</u>	<u>(2,205)</u>
Loss before income taxes	(50,794)	(4,484)
Income tax (benefit) expense	(454)	210
Net loss	<u>\$ (50,340)</u>	<u>\$ (4,694)</u>
Loss per share:		
Basic and diluted loss per share	<u>\$ (1.14)</u>	<u>\$ (0.11)</u>
Weighted-average common shares:		
Basic and diluted	<u>44,096</u>	<u>43,402</u>

See accompanying notes to condensed consolidated financial statements.

**HARVARD BIOSCIENCE, INC.**  
**CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS**  
**(Unaudited, in thousands)**

	<b>Three Months Ended March 31,</b>	
	<b>2025</b>	<b>2024</b>
Net loss	\$ (50,340)	\$ (4,694)
Other comprehensive income (loss), net of tax:		
Foreign currency translation adjustments	1,292	(783)
Derivative instruments qualifying as cash flow hedges, net of tax of \$-0-	17	199
Other comprehensive income (loss)	1,309	(584)
Comprehensive loss	<u>\$ (49,031)</u>	<u>\$ (5,278)</u>

See accompanying notes to condensed consolidated financial statements.

**HARVARD BIOSCIENCE, INC.**  
**CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY**  
(Unaudited, in thousands)

	Number of Shares Issued	Common Stock	Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Total Stockholders' Equity
<b>Balance at December 31, 2024</b>	44,074	\$ 441	\$ 236,579	\$ (158,010)	\$ (15,670)	\$ 63,340
Vesting of restricted stock units	247	1	-	-	-	1
Shares withheld for taxes	(107)	-	(75)	-	-	(75)
Stock-based compensation	-	-	600	-	-	600
Net loss	-	-	-	(50,340)	-	(50,340)
Other comprehensive income	-	-	-	-	1,309	1,309
<b>Balance at March 31, 2025</b>	<u>44,214</u>	<u>\$ 442</u>	<u>\$ 237,104</u>	<u>\$ (208,350)</u>	<u>\$ (14,361)</u>	<u>\$ 14,835</u>

	Number of Shares Issued	Common Stock	Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Total Stockholders' Equity
<b>Balance at December 31, 2023</b>	43,395	\$ 434	\$ 232,435	\$ (145,605)	\$ (14,190)	\$ 73,074
Stock option exercises	4	-	15	-	-	15
Vesting of restricted stock units	34	-	-	-	-	-
Shares withheld for taxes	(12)	-	(47)	-	-	(47)
Stock-based compensation	-	-	1,048	-	-	1,048
Net loss	-	-	-	(4,694)	-	(4,694)
Other comprehensive loss	-	-	-	-	(584)	(584)
<b>Balance at March 31, 2024</b>	<u>43,421</u>	<u>\$ 434</u>	<u>\$ 233,451</u>	<u>\$ (150,299)</u>	<u>\$ (14,774)</u>	<u>\$ 68,812</u>

See accompanying notes to condensed consolidated financial statements.

**HARVARD BIOSCIENCE, INC.**  
**CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS**  
(Unaudited, in thousands)

	<b>Three Months Ended March 31,</b>	
	<b>2025</b>	<b>2024</b>
<b>Cash flows from operating activities:</b>		
Net loss	\$ (50,340)	\$ (4,694)
<b>Adjustments to reconcile net loss to net cash provided by operating activities:</b>		
Depreciation	451	404
Amortization of intangible assets	1,204	1,377
Goodwill impairment - Note 4	47,951	-
Amortization of deferred financing costs	131	70
Stock-based compensation	600	1,048
Deferred income taxes and other	(523)	178
Loss on equity securities - Note 6	-	1,312
<b>Changes in operating assets and liabilities:</b>		
Accounts receivable	1,438	704
Inventories	670	(617)
Other assets	29	(298)
Accounts payable and other liabilities	1,472	2,039
Contract liabilities	(97)	(120)
Net cash provided by operating activities	<u>2,986</u>	<u>1,403</u>
<b>Cash flows from investing activities:</b>		
Additions to property, plant and equipment	(513)	(645)
Capitalized software development costs	(170)	(75)
Proceeds from sale of marketable equity securities	-	495
Net cash used in investing activities	<u>(683)</u>	<u>(225)</u>
<b>Cash flows from financing activities:</b>		
Borrowing from revolving line of credit	-	2,500
Repayment of revolving line of credit	-	(500)
Repayment of term debt	(1,000)	(3,023)
Payment of debt issuance costs	(129)	-
Proceeds from exercise of stock options and employee stock purchase plan	-	15
Taxes paid related to net share settlement of equity awards	(75)	(47)
Net cash used in financing activities	<u>(1,204)</u>	<u>(1,055)</u>
Effect of exchange rate changes on cash	339	(151)
Increase (decrease) in cash and cash equivalents	1,438	(28)
Cash and cash equivalents at beginning of period	4,108	4,283
Cash and cash equivalents at end of period	<u>\$ 5,546</u>	<u>\$ 4,255</u>
<b>Supplemental disclosures of cash flow information:</b>		
Cash paid for interest	<u>\$ 799</u>	<u>\$ 768</u>
Cash paid for income taxes, net of refunds	<u>\$ 2</u>	<u>\$ 26</u>

See accompanying notes to condensed consolidated financial statements

## NOTES TO UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

### 1. Basis of Presentation and Summary of Significant Accounting Policies

#### *Basis of Presentation and Summary of Significant Accounting Policies*

The unaudited consolidated financial statements of Harvard Bioscience, Inc. and its wholly-owned subsidiaries (collectively, the “Company”) as of March 31, 2025 and for the three months ended March 31, 2025 and 2024, have been prepared by the Company pursuant to the rules and regulations of the Securities and Exchange Commission (the “SEC”). Certain information and footnote disclosures normally included in financial statements prepared in accordance with U.S. generally accepted accounting principles (“U.S. GAAP”) have been condensed or omitted pursuant to such rules and regulations. The December 31, 2024 consolidated balance sheet was derived from audited financial statements but does not include all disclosures required by U.S. GAAP. However, the Company believes that the disclosures are adequate to make the information presented not misleading. These unaudited consolidated financial statements should be read in conjunction with the consolidated financial statements and the notes thereto included in the Company’s Annual Report on Form 10-K for the fiscal year ended December 31, 2024.

In the opinion of management, all adjustments, which include normal recurring adjustments necessary to present a fair statement of financial position as of March 31, 2025, results of operations and comprehensive loss for the three months ended March 31, 2025 and 2024, and cash flows for the three months ended March 31, 2025 and 2024, as applicable, have been made. The results of operations for the three months ended March 31, 2025, are not necessarily indicative of the anticipated operating results for the full year ending December 31, 2025, or any future periods.

The accounting policies underlying the accompanying unaudited consolidated financial statements are set forth in Note 2 to the consolidated financial statements included in the Company’s Annual Report on Form 10-K for the year ended December 31, 2024. There have been no material changes in the Company’s significant accounting policies during the three months ended March 31, 2025.

#### *Going Concern*

The unaudited consolidated financial statements for the quarter ended March 31, 2025, have been prepared assuming that the Company will continue as a going concern. A going-concern basis assumes that the Company will continue its operations for the foreseeable future and contemplates the realization of assets and the settlement of liabilities in the normal course of business. As noted below, there is substantial doubt about the Company’s ability to continue as a going concern.

As of March 31, 2025, there was indebtedness of \$36.4 million outstanding under the Company’s term loan and senior revolving credit facility (collectively, the “Credit Agreement”). On March 10, 2025, the Company entered into an amendment to the Credit Agreement (the “March 2025 Amendment”). The March 2025 Amendment provides, among other things, that the Company’s failure to achieve certain refinancing milestones (individually and collectively, the “Refinancing Milestones”), including receipt of a term sheet or commitment letter from one or more potential lenders, by the dates provided in the March 2025 Amendment or the Company’s failure to consummate a refinancing of the debt underlying the Credit Agreement (the “Refinancing”) by June 30, 2025, would, in either case, constitute an event of default under the Credit Agreement. In such event, in addition to other actions the lenders may require, the amounts outstanding under the Credit Agreement may become immediately due and payable. As of May 12, 2025, the Company was in compliance with the Refinancing Milestones applicable as of such date.

The Company is exploring alternative sources of capital that would allow it to refinance the outstanding indebtedness by June 30, 2025, in order to avoid default under the Credit Agreement, but its ability to access such other sources of capital is uncertain. There is no assurance that such capital will be available, be obtainable on commercially acceptable terms, or provide the Company with sufficient funds to meet its objectives. Based on its anticipated cash flows from operations, unless the Company is able to access other sources of capital or extend the date for repayment under the Credit Agreement, the Company will be unable to pay its debt obligations and fund its operations for at least twelve months from the date of issuance of the unaudited consolidated financial statements contained in this Quarterly Report on Form 10-Q. As a result, there is substantial doubt about the Company’s ability to continue as a going concern.

*Use of Estimates*

The preparation of financial statements in conformity with U.S. GAAP requires the use of management estimates. Such estimates include the determination and establishment of certain accruals and provisions, including those for income taxes, credit losses on receivables, and defined benefit pension obligations. Estimates are also required to assess the value for inventories reported at lower of cost or net realizable value, stock-based compensation expense, and the recoverability of long-lived and intangible assets, including goodwill. On an ongoing basis, the Company assesses its previous estimates based upon currently available information. Actual results could differ materially from those estimates.

*Other Operating Expenses*

The components of other operating expenses for the three months ended March 31, 2025 and 2024 were as follows:

(in thousands)	<b>Three Months Ended March 31,</b>	
	<b>2025</b>	<b>2024</b>
Employee retention tax credit fees (see Note 5)	\$ 171	\$ 472
Unclaimed property audits expense (see Note 13)	-	494
Restructuring expenses (see Note 14)	93	-
Total other operating expenses	<u>\$ 264</u>	<u>\$ 966</u>

*Recently Issued Accounting Pronouncements Yet to Be Adopted*

In December 2023, the FASB issued ASU No. 2023-09, *Income Taxes (Topic 740): Improvements to Income Tax*, which enhances disclosures related to the effective tax rate reconciliation, income taxes paid, as well as other disclosures. The new standard impacts footnote disclosures and is effective for the Company's annual financial statements for the year ending December 31, 2025. The Company is currently evaluating the impact that adopting ASU No. 2023-09 will have on the footnote disclosures in its consolidated financial statements.

In November 2024, the FASB issued ASU No. 2024-03, *Income Statement (Subtopic 220-40): Reporting Comprehensive Income—Expense Disaggregation Disclosures*, which requires enhanced disclosure of income statement expense categories to improve transparency and provide financial statement users with more detailed information about the nature, amount and timing of expenses impacting financial performance. This new guidance is effective for annual reporting periods beginning after December 15, 2026, and interim reporting periods beginning after December 15, 2027, with early adoption permitted. The Company is currently evaluating the impact that adopting ASU No. 2024-03 will have on the footnote disclosures in its consolidated financial statements.

**2. Earnings (Loss) per Share**

Basic earnings (loss) per share is computed by dividing net income (loss) by the weighted average number of shares of common stock outstanding during the periods presented. The computation of diluted earnings (loss) per share is similar to the computation of basic earnings per share, except that the denominator is increased for the assumed exercise of dilutive options and other potentially dilutive securities using the treasury stock method unless the effect is antidilutive. The following table summarizes the calculation of basic and diluted net loss per share of common stock:

(in thousands, except per share data)	<b>Three Months Ended March 31,</b>	
	<b>2025</b>	<b>2024</b>
Net loss	\$ (50,340)	\$ (4,694)
Weighted average shares outstanding - basic	44,096	43,402
Dilutive effect of equity awards	-	-
Weighted average shares outstanding - diluted	44,096	43,402
Basic loss per share	<u>\$ (1.14)</u>	<u>\$ (0.11)</u>
Diluted loss per share	<u>\$ (1.14)</u>	<u>\$ (0.11)</u>
Shares excluded from diluted loss per share due to their anti-dilutive effect	<u>2,616</u>	<u>3,207</u>

### 3. Revenues

The following tables represent a disaggregation of revenues from contracts with customers for the three months ended March 31, 2025 and 2024:

Revenues by type were as follows:

(in thousands)	Three Months Ended March 31,	
	2025	2024
Instruments, equipment, software and accessories	\$ 19,865	\$ 22,759
Service, maintenance and warranty contracts	1,909	1,753
<b>Total revenues</b>	<b>\$ 21,774</b>	<b>\$ 24,512</b>

Revenues by timing of recognition were as follows:

(in thousands)	Three Months Ended March 31,	
	2025	2024
Goods and services transferred at a point in time	\$ 20,945	\$ 23,743
Goods and services transferred over time	829	769
<b>Total revenues</b>	<b>\$ 21,774</b>	<b>\$ 24,512</b>

Revenues by geographic destination were as follows:

(in thousands)	Three Months Ended March 31,	
	2025	2024
<b>Americas</b>		
United States	\$ 9,827	\$ 10,983
Americas - Other	829	761
Europe, Middle East and Africa	6,030	6,623
<b>Asia</b>		
China	2,734	4,260
Asia - Other	2,354	1,885
	<b>\$ 21,774</b>	<b>\$ 24,512</b>

#### Contract Liabilities

The following table provides details of contract liabilities as of the periods indicated:

(in thousands)	March 31, 2025	December 31, 2024	Change	Percentage
<b>Deferred revenue</b>				
Service, maintenance and warranty contracts	\$ 1,681	\$ 1,560	\$ 121	8%
Installation and training	605	806	(201)	-25%
Customer advances	1,141	1,440	(299)	-21%
<b>Total short-term contract liabilities</b>	<b>3,427</b>	<b>3,806</b>	<b>(379)</b>	<b>-10%</b>
Long-term service, maintenance and warranty contracts	282	-	282	100%
<b>Total contract liabilities</b>	<b>\$ 3,709</b>	<b>\$ 3,806</b>	<b>\$ (97)</b>	<b>-3%</b>

Changes in the Company's contract liabilities are primarily due to the timing of receipt of payments under service, maintenance and warranty contracts and lower sales volumes. Additionally, customer advances have decreased due to the recognition of amounts under the exchange program. During the three months ended March 31, 2025 and 2024, the Company recognized revenues of \$1.7 million and \$1.6 million from contract liabilities existing at December 31, 2024 and 2023, respectively.

The following table represents the Company's remaining performance obligations from contracts that are recognized over time as of March 31, 2025:

(in thousands)	Remaining Performance Obligations						
	2025 *	2026	2027	2028	2029	Thereafter	Total
Service, maintenance and warranty contracts	\$ 1,551	\$ 280	\$ 93	\$ 23	\$ 13	\$ 3	\$ 1,963

\* remainder of the year

#### *Provision for Expected Credit Losses on Receivables*

Activity in the provision for expected credit losses on receivables was as follows:

(in thousands)	Three Months Ended March 31,	
	2025	2024
Balance, beginning of period	\$ 215	\$ 160
Provision for expected credit losses	31	1
Charge-offs and other	(5)	(34)
Balance, end of period	\$ 241	\$ 127

#### *Concentrations*

No customer accounted for more than 10% of revenues for the three months ended March 31, 2025 and 2024. At March 31, 2025 and December 31, 2024, no customer accounted for more than 10% of net accounts receivable.

#### *Warranties*

Activity in the product warranties accrual was as follows:

(in thousands)	Three Months Ended March 31,	
	2025	2024
Balance, beginning of period	\$ 318	\$ 336
Provision for warranties	36	105
Warranty claims	(31)	(82)
Balance, end of period	\$ 323	\$ 359

## 4. Goodwill and Long-Lived Assets

The Company determined that a sustained decrease in its stock price that occurred during the three months ended March 31, 2025 indicated that the carrying values of its goodwill and other long-lived assets may not be recoverable. Additional factors that contributed to this conclusion are the Company's recent operating results, liquidity risk and the current macroeconomic conditions impacting the life science industries. Based on this determination, the Company performed interim quantitative impairment tests on its goodwill and other long-lived assets as of March 31, 2025.

The recoverability of assets or an asset group to be held and used is measured by a comparison of the carrying amount of an asset or asset group to estimated undiscounted future cash flows expected to be generated by the asset or the asset group. Based on its recoverability assessment, the Company determined that there was no impairment of its other long-lived assets as of March 31, 2025.

For the purpose of its goodwill impairment analysis, the Company has one reporting unit. The Company estimated the fair value of the reporting unit using an income-based valuation approach by means of a discounted cash flow (“DCF”) model. Under this model, the fair value of the reporting unit is determined based on the present value of estimated future cash flows, discounted at a risk-adjusted rate of return. The Company used internal forecasts and strategic long-term plans to estimate future cash flows, including projections of revenue and EBITDA, capital expenditure and working capital requirements, terminal growth rates, statutory tax rates and a market-participant discount rate. The goodwill impairment analysis also includes a reconciliation of the aggregate estimated fair value of the reporting unit to the Company’s total market capitalization. Based on this quantitative impairment analysis, the Company determined that the carrying value of the reporting unit exceeded its fair value by \$48.0 million. Accordingly, the Company recorded such amount as a goodwill impairment charge for the three months ended March 31, 2025.

The inputs and assumptions used in determining the fair value of the reporting unit are subjective and require management’s use of significant judgment. Certain future events and circumstances, including further deterioration of the Company’s stock price, operating results, and macroeconomic conditions, and a higher cost of capital, among others, could result in changes to these inputs and assumptions. A revision of these inputs and assumptions could cause the fair value of the reporting unit to fall further below its carrying value, resulting in additional impairment charges, which could have a material adverse effect on the Company’s results of operations.

The change in the carrying amount of goodwill for the three months ended March 31, 2025 was as follows:

(in thousands)	
Carrying amount at December 31, 2024	\$ 56,324
Goodwill impairment	(47,951)
Effect of change in currency translation	587
Carrying amount at March 31, 2025	<u>\$ 8,960</u>

Intangible assets, net at March 31, 2025 and December 31, 2024 consisted of the following:

(in thousands)	March 31, 2025			December 31, 2024		
	Gross	Accumulated Amortization	Net	Gross	Accumulated Amortization	Net
Amortizable intangible assets:						
Customer relationships	\$ 15,886	\$ (10,950)	\$ 4,936	\$ 15,603	\$ (10,450)	\$ 5,153
Technology and software development	35,684	(31,540)	4,144	35,397	(30,556)	4,841
Trade names and patents	7,555	(6,707)	848	7,452	(6,509)	943
Total amortizable intangible assets	<u>\$ 59,125</u>	<u>\$ (49,197)</u>	<u>\$ 9,928</u>	<u>\$ 58,452</u>	<u>\$ (47,515)</u>	<u>\$ 10,937</u>
Indefinite-lived intangible assets:			202			195
Total intangible assets			<u>\$ 10,130</u>			<u>\$ 11,132</u>

Intangible asset amortization expense for the three months ended March 31, 2025 and 2024 was as follows:

(in thousands)	Three Months Ended March 31,	
	2025	2024
Cost of revenues	\$ 44	\$ 44
Operating expense	1,160	1,333
Total amortization of intangible assets	<u>\$ 1,204</u>	<u>\$ 1,377</u>

As of March 31, 2025, estimated future amortization expense of amortizable intangible assets is as follows:

(in thousands)	
2025 (remainder of year)	\$ 2,991
2026	2,797
2027	1,525
2028	1,279
2029	939
Thereafter	397
<b>Total</b>	<b>\$ 9,928</b>

## 5. Balance Sheet Information

The following tables provide details of selected balance sheet items as of the periods indicated:

<b><i>Inventories:</i></b>	<b>March 31,</b>	<b>December 31,</b>
(in thousands)	<b>2025</b>	<b>2024</b>
Finished goods	\$ 5,128	\$ 5,222
Work in process	3,017	2,754
Raw materials	14,671	15,269
<b>Total</b>	<b>\$ 22,816</b>	<b>\$ 23,245</b>

<b><i>Other Current Liabilities:</i></b>	<b>March 31,</b>	<b>December 31,</b>
(in thousands)	<b>2025</b>	<b>2024</b>
Compensation	\$ 1,879	\$ 1,714
Customer credits	1,244	1,286
Current portion of operating lease liabilities	1,419	1,158
Employee retention tax credit funds	4,287	3,154
Professional fees	762	545
Warranty costs	323	318
Other	1,496	1,234
<b>Total</b>	<b>\$ 11,410</b>	<b>\$ 9,409</b>

The Coronavirus Aid, Relief, and Economic Security Act of 2020 (the “CARES Act”) provided an employee retention tax credit (“ERTC”) that was a refundable tax credit against certain employer taxes. The Company elected to account for the credit as a government grant. As there is no authoritative guidance under U.S. GAAP on accounting for grants to for-profit business entities from government entities, the Company accounts for government assistance by analogy to International Accounting Standards Topic 20, *Accounting for Government Grants and Disclosure of Government Assistance* (“IAS 20”). Under IAS 20, government grants are recognized when there is reasonable assurance that the grant will be received and that all conditions related to the grant will be met.

The Company received ERTC refunds of \$1.1 million and \$3.2 million during the three months ended March 31, 2025 and 2024, respectively. Due to the subjectivity of the credit, the Company has included the refunds received in other current liabilities in the consolidated balance sheets as of March 31, 2025 and 2024, subject to a determination that the refunds are recognizable.

The Company engaged a professional services firm under a commission fee arrangement to assist with determining the Company’s eligibility to claim the ERTC refunds and accumulating the necessary support that was used as a basis in the filing. The Company paid fees of \$0.2 million and \$0.5 million during the three months March 31, 2025 and 2024, respectively, for these services, which are included in other operating expenses in the consolidated statement of operations.

## 6. Marketable Equity Securities

In April 2023, the Company received shares of common stock of Harvard Apparatus Regenerative Technology, Inc. (“HRGN”, formerly known as Biostage, Inc.) in connection with settlement of indemnification obligations related to litigation which was resolved during the year ended December 31, 2022.

The Company received cash proceeds of \$0.5 million from the sale of HRGN shares sold during the three months ended March 31, 2024, which resulted in a realized loss of \$0.3 million. The Company incurred an unrealized loss of \$1.0 million on HRGN shares held during the three months ended March 31, 2024. The Company determined the fair value of its HRGN common stock based on the closing price as quoted on the OTCQB Marketplace at the reporting date. The Company did not hold any shares of HRGN stock during the three months ended March 31, 2025.

## 7. Leases

The Company has noncancelable operating leases for offices, manufacturing facilities, warehouse space, automobiles and equipment expiring at various dates through 2030.

The components of lease expense for the three months ended March 31, 2025 and 2024, were as follows:

(in thousands)	Three Months Ended March 31,	
	2025	2024
Operating lease cost	\$ 521	\$ 511
Short-term lease cost	44	50
Sublease income	-	(25)
Total lease cost	<u>\$ 565</u>	<u>\$ 536</u>

Supplemental cash flow information related to the Company's operating leases is as follows:

(in thousands)	Three Months Ended March 31,	
	2025	2024
Cash paid for amounts included in the measurement of lease liabilities	\$ 596	\$ 597
Right-of-use assets obtained in exchange for lease obligations	1,442	-

Supplemental balance sheet information related to the Company's operating leases is as follows:

(in thousands)	March 31,	December 31,
	2025	2024
Operating lease right-of-use assets	<u>\$ 7,283</u>	<u>\$ 6,132</u>
Current portion, operating lease liabilities	\$ 1,419	\$ 1,158
Operating lease liabilities, long-term	7,230	6,381
Total operating lease liabilities	<u>\$ 8,649</u>	<u>\$ 7,539</u>
Weighted average remaining lease term (years)	4.9	5.2
Weighted average discount rate	8.1%	8.9%

Future minimum lease payments for operating leases, with initial terms in excess of one year at March 31, 2025, are as follows:

Year Ending December 31,	
(in thousands)	
2025 (remainder of the year)	\$ 1,538
2026	2,178
2027	2,165
2028	2,106
2029	1,797
Thereafter	844
Total lease payments	10,628
Less imputed interest	(1,979)
Total operating lease liabilities	<u>\$ 8,649</u>

## 8. Debt

The Company's debt, which was included within current liabilities as of March 31, 2025 and December 31, 2024, was as follows:

(in thousands)	December 31,	
	March 31, 2025	2024
Term loan	\$ 23,700	\$ 24,700
Revolving line	12,650	12,650
Less: unamortized deferred financing costs	(392)	(394)
Total debt	<u>\$ 35,958</u>	<u>\$ 36,956</u>

The Company maintains a Credit Agreement (as amended, the "Credit Agreement") with Citizens Bank, N.A., Wells Fargo Bank, National Association, and First Citizens Bank & Trust Company (together, the "Lenders"). The Credit Agreement provides for a term loan of \$40.0 million and a \$25.0 million revolving credit facility (including a \$10.0 million sub-facility for the issuance of letters of credit and a \$10.0 million swingline loan sub-facility) (collectively, the "Credit Facility"). The Company's obligations under the Credit Agreement are secured by substantially all of the assets of Harvard Bioscience, Inc., including all or a portion of the equity interests in certain of the Company's domestic and foreign subsidiaries. The Company's obligations under the Credit Agreement are guaranteed by certain of the Company's direct, domestic wholly owned subsidiaries; none of the Company's direct or indirect foreign subsidiaries has guaranteed the Credit Facility. Issuance costs of \$1.7 million are amortized over the contractual term to maturity date on a straight-line basis, which approximates the effective interest method. Total revolver borrowing capacity is limited by the consolidated net leverage ratio as defined under the amended Credit Agreement. As of the date of this report, the Company is unable to make additional borrowings under its revolving credit facility due to net leverage ratio requirements set forth in the August 6, 2024 amendment to the Credit Agreement (the "August 2024 Amendment") and the terms of the March 10, 2025 amendment to the Credit Agreement (the "March 2025 Amendment"), as described below.

Borrowings under the Credit Facility will, at the option of the Company, bear interest at either (i) a rate per annum based on the Secured Overnight Financing Rate ("SOFR") for an interest period of one, two, three or six months, plus an applicable interest rate margin determined as provided in the Credit Agreement (a "SOFR Loan"), subject to a floor of 0.50%, or (ii) an alternative base rate plus an applicable interest rate margin, each as determined as provided in the Credit Agreement (an "ABR Loan"). The alternative base rate is based on the Citizens Bank prime rate or the federal funds effective rate of the Federal Reserve Bank of New York and is subject to a floor of 1.0%. Pursuant to the March 2025 Amendment, the applicable interest rate margin was increased such that interest rate is equal to a rate per annum based on the Secured Overnight Financing Rate ("SOFR") plus 400 bps effective as of March 10, 2025. There are no prepayment penalties in the event the Company elects to prepay and terminate the Credit Facility prior to its scheduled maturity date, subject to SOFR Loan breakage and redeployment costs in certain circumstances.

The effective interest rate on the Company's borrowings for the three months ended March 31, 2025 and 2024, was 8.6% and 7.7%, respectively. The weighted average interest rate as of March 31, 2025, net of the effect of the Company's interest rate swap agreement, was 8.6%. The carrying value of the debt approximates fair value because the interest rate under the obligation approximates market rates of interest available to the Company for similar instruments.

The term loan required quarterly installment payments of \$1.0 million with a balloon payment at maturity on December 22, 2025. Pursuant to the March 2025 Amendment, amortization payments were revised so that a proportionate payment must be made on a monthly rather than a quarterly basis.

The Credit Agreement includes various customary financial covenants and other affirmative and negative covenants binding on the Company. The negative covenants limit the ability of the Company, among other things, to incur debt, permit liens, make investments, sell assets, or pay dividends on its capital stock. The financial covenants include a maximum consolidated net leverage ratio and a minimum consolidated fixed charge coverage ratio. The Credit Agreement also includes customary events of default.

The March 2025 Amendment provides, among other things, that the lenders' commitment under the revolving credit facility is capped at the amount outstanding thereunder as of the date thereof and thus we are unable to make additional borrowings under our revolving credit facility. The March 2025 Amendment also establishes certain Refinancing Milestones in connection with the Refinancing.

The Refinancing Milestones include: (1) continuing to retain an investment banker for the purpose of assisting with the consummation of the Refinancing; (2) by March 14, 2025, the engagement of a financial advisor acceptable to the administrative agent; (3) by April 30, 2025, the delivery to the administrative agent of an executed bona fide indication of interest from one or more potential lenders with respect to the Refinancing on terms and conditions acceptable to the administrative agent; (4) by May 23, 2025, the delivery to the administrative agent of a term sheet or commitment letter from one or more potential lenders that provides for the Refinancing on terms and conditions acceptable to the administrative agent; (5) by June 13, 2025, delivery to the administrative agent of: (i) a statement of sources and uses of transaction proceeds; and (ii) evidence that the potential lender's conditions to closing (other than customary closing deliveries) of the Refinancing, such as business commitments, are satisfied; and (6) by June 30, 2025, the closing of the Refinancing. The lenders also agreed not to assert the financial covenants included in the Credit Agreement for the first quarter of fiscal year 2025 provided that the Company continues to comply with its payment obligations, achieves the Refinancing Milestones, maintain minimum liquidity (the "Minimum Liquidity Requirement") (defined as the sum of (a) unrestricted cash and cash equivalents and (b) the amount by which the aggregate amount committed under the Company's revolving credit facility exceeds the total amount drawn under the credit facility) of \$3.5 million and provide the administrative agent with certain financial reports. As of May 12, 2025, the Company was in compliance with the Refinancing Milestones applicable as of such date and the Minimum Liquidity Requirement.

## 9. Derivatives

In February 2023, the Company entered into an interest rate swap contract to improve the predictability of cash flows from interest payments related to its variable, SOFR-based debt. The swap contract had a notional amount of \$20.3 million as of March 31, 2025 and matures on December 22, 2025. This swap contract effectively converts the SOFR-based variable portion of the interest payable under the Credit Agreement into fixed-rate debt at an annual rate of 4.75%. The swap contract does not impact the additional interest related to the applicable interest rate margin as discussed above in Note 8, Debt.

The swap contract is considered an effective cash flow hedge, and as a result, net gains or losses are reported as a component of other comprehensive income ("OCI") in the consolidated financial statements and are reclassified when the underlying hedged interest impacts earnings. An assessment is performed quarterly to evaluate the ongoing hedge effectiveness.

The following table presents the notional amount and fair value of the Company's derivative instruments as of March 31, 2025 and December 31, 2024:

(in thousands)		March 31, 2025		December 31, 2024	
		Notional Amount	Fair Value (a)	Notional Amount	Fair Value (a)
Derivatives Instruments	Balance Sheet Classification				
Interest rate swap	Other current liabilities	\$ 20,272	\$ (82)	\$ 21,658	\$ (99)

(a) See Note 10 for the fair value measurements related to these financial instruments.

The effect of the cash flow hedge on other comprehensive income (loss) and earnings for the periods presented was as follows:

Derivatives Qualifying as Hedges, net of tax (in thousands)	Three Months Ended March 31,	
	2025	2024
Gain recognized in OCI on derivatives (effective portion)	\$ 17	\$ 199
Amounts reclassified from AOCI to interest expense	(17)	47

## 10. Fair Value Measurements

The following tables present the fair value hierarchy for those assets and liabilities measured at fair value on a recurring basis:

Assets (Liabilities) (in thousands)	Fair Value as of March 31, 2025			
	Level 1	Level 2	Level 3	Total
Interest rate swap agreement	\$ -	\$ (82)	\$ -	\$ (82)

  

	Fair Value as of December 31, 2024			
	Level 1	Level 2	Level 3	Total
Interest rate swap agreement	\$ -	\$ (99)	\$ -	\$ (99)

The Company uses the market approach technique to value its financial liabilities. The fair value of the Company's interest rate swap agreement was based on SOFR yield curves at the reporting date and is included within other current liabilities on the consolidated balance sheets at both March 31, 2025 and December 31, 2024.

## 11. Stock-Based Compensation

Stock-based compensation expense for the three months ended March 31, 2025 and 2024 was allocated as follows:

(in thousands)	Three Months Ended March 31,	
	2025	2024
Cost of revenues	\$ 30	\$ 52
Sales and marketing expenses	118	130
General and administrative expenses	359	771
Research and development expenses	93	95
Total stock-based compensation	\$ 600	\$ 1,048

As of March 31, 2025, the total compensation costs related to unvested awards not yet recognized was \$3.1 million and the weighted average period over which it is expected to be recognized is approximately 1.5 years. The Company did not capitalize any stock-based compensation.

Restricted stock unit ("RSU") activity for the three months ended March 31, 2025 was as follows:

	Time-Based		Market-Based		Performance-Based	
	Restricted Stock Units	Grant Date Fair Value	Restricted Stock Units	Grant Date Fair Value	Restricted Stock Units	Grant Date Fair Value
Balance at December 31, 2024	1,378,995	\$ 3.51	558,958	\$ 2.61	375,895	\$ 4.19
Granted	12,821	0.78	-	-	-	-
Vested	(247,097)	4.05	-	-	-	-
Forfeited	(73,896)	3.60	(62,261)	2.61	(38,783)	4.19
Balance at March 31, 2025	1,070,823	\$ 3.35	496,697	\$ 2.61	337,112	\$ 4.19

The aggregate fair value of RSUs that vested during the three months ended March 31, 2025, and 2024 was \$0.2 million and \$0.1 million, respectively. Unvested shares related to market-based and performance-based vesting conditions are reflected at 100% of their target vesting amount in the table above. Actual vesting could range from zero to 150% of their target amounts.

Performance-based RSU awards are contingent on the achievement of certain performance metrics. Compensation cost associated with performance-based RSUs are recognized based on the estimated number of shares that the Company ultimately expects will be earned. If the estimated number of shares to be earned is revised in the future, then stock-based compensation expense will be adjusted accordingly.

Stock option activity for the three months ended March 31, 2025 was as follows:

	Number of Options	Weighted- Average Exercise Price	Weighted- Average Remaining Contractual Term	Aggregate Intrinsic Value (in thousands)
Outstanding and exercisable at December 31, 2024	827,458	\$ 3.24		
Cancelled/Forfeited	(45,500)	5.51		
Outstanding and exercisable at March 31, 2025	<u>781,958</u>	<u>\$ 3.11</u>	<u>2.5</u>	<u>\$ -</u>

There is no aggregate intrinsic value at March 31, 2025 because the Company's closing stock price of \$0.57 is below the exercise price of the outstanding options.

## 12. Income Tax

The determination of the annual effective tax rate is based upon a number of significant estimates and judgments, including the estimated annual pretax income in each tax jurisdiction in which the Company operates and the development of tax planning strategies during the year. In addition, as a global commercial enterprise, the Company's tax expense can be impacted by changes in tax rates or laws, the finalization of tax audits and reviews and other factors that cannot be predicted with certainty. As such, there can be significant volatility in interim tax provisions.

Income tax (benefit) expense was \$(0.5) million and \$0.2 million for the three months ended March 31, 2025 and 2024, respectively. The Company's effective tax rate of 0.9% for the three months ended March 31, 2025, was lower than the U.S statutory rate due to the tax effect of goodwill impairment. The Company's effective tax rate of (4.7)% for the three months ended March 31, 2024, was lower than the U.S statutory rate due to non-deductible executive compensation. The effective tax rate for both periods was also impacted by changes in valuation allowances associated with the Company's assessment of the likelihood of the recoverability of deferred tax assets.

## 13. Commitments and Contingent Liabilities

The Company is involved in various claims and legal proceedings arising in the ordinary course of business. After consultation with legal counsel, the Company has determined that the ultimate disposition of such proceedings is not likely to have a material adverse effect on its business, financial condition, results of operations or cash flows. Although unfavorable outcomes in the proceedings are possible, the Company has not accrued loss contingencies relating to any such matters as they are not considered to be probable and reasonably estimable. If one or more of these matters are resolved in a manner adverse to the Company, the impact on the Company's business, financial condition, results of operations and cash flows could be material.

In addition, the Company has entered into indemnification agreements with its directors and officers. It is not possible to determine the maximum potential liability amount under these indemnification agreements due to the limited history of prior indemnification claims and the unique facts and circumstances involved in each particular agreement. The Company has not recorded any liability for costs related to contingent indemnification obligations as of March 31, 2025.

The Company is subject to unclaimed property laws in the ordinary course of its business. State escheat laws generally require entities to report and remit abandoned and unclaimed property to the state. Failure to timely report and remit the property can result in assessments that could include interest and penalties, in addition to the payment of the escheat liability itself. During the three months ended March 31, 2024, the Company accrued \$0.5 million of loss contingencies related to an unclaimed property audit, which has been included in other operating expenses in the consolidated statement of operations. The unclaimed property audit was completed during the second quarter of fiscal 2024.

## 14. Restructuring Costs

On an ongoing basis, the Company reviews the global economy, the healthcare industry, and the markets in which it competes to identify operational efficiencies and align its cost base and infrastructure with customer needs and its strategic plans. In order to realize these goals, the Company undertakes activities from time to time to optimize its business.

During the three months ended March 31, 2025, the Company initiated additional restructurings for which it expects to incur \$0.1 million of costs, primarily consisting of severance incurred in connection with headcount reductions in North America and Europe. The Company expects the restructuring to be completed during the year ended December 31, 2025. There were no restructuring costs incurred during the three months ended March 31, 2024. Severance and other costs have been included as a component of other operating expenses (see Note 1). The changes in the accrued liability for restructuring and other charges for the three months ended March 31, 2025 were as follows:

(in thousands)	Severance	Other	Total
Balance at December 31, 2024	\$ 82	\$ -	\$ 82
Restructuring costs	91	2	93
Cash payments	(82)	-	(82)
Balance at March 31, 2025	<u>\$ 91</u>	<u>\$ 2</u>	<u>\$ 93</u>

## 15. Segment Information

The Company conducts business as a single operating segment, which is based upon the Company's organizational and management structure, as well as information used by the chief operating decision maker ("CODM") to allocate resources and other factors. The key measure of segment profitability that the CODM uses to allocate resources and assess performance is consolidated net income (loss), as reported on the consolidated statements of operations. The CODM utilizes consolidated net loss by comparing actual results against budgeted amounts on a quarterly basis. The following table presents the significant revenue and expense categories of the Company's single operating segment:

	Three Months Ended March 31,	
	2025	2024
Revenues	\$ 21,774	\$ 24,512
Less:		
Cost of revenues (1)	9,560	9,688
Sales and marketing expenses (1)	4,853	5,774
General and administrative expenses (1)	4,826	5,192
Research and development expenses (1)	2,228	2,790
Amortization of acquired intangibles	1,160	1,333
Interest expense	802	751
Income tax (benefit) expense	(454)	210
Goodwill impairment	47,951	-
Other segment expenses (2)	1,188	3,469
Net loss	<u>\$ (50,340)</u>	<u>\$ (4,694)</u>

(1) Excludes stock-based compensation expense

(2) Includes stock-based compensation, other operating expenses, loss on equity securities and other expenses

Asset information provided to the CODM is consistent with that reported on the consolidated balance sheets with particular emphasis on the Company's available liquidity, including its cash, accounts receivable, and inventory, reduced by current liabilities. Information relating to the Company's products and services and geographical distribution of revenues is disclosed in Note 3.

**Item 2. Management’s Discussion and Analysis of Financial Condition and Results of Operations.****Forward-Looking Statements**

*This Quarterly Report on Form 10-Q contains statements that are not statements of historical fact and are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934 (the “Exchange Act”). The forward-looking statements are principally, but not exclusively, contained in “Item 2: Management’s Discussion and Analysis of Financial Condition and Results of Operations.” These statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance, or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Forward-looking statements include, but are not limited to, statements about management’s confidence or expectations, and our plans, objectives, expectations, and intentions that are not historical facts. In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “should,” “could,” “would,” “seek,” “expects,” “plans,” “aim,” “anticipates,” “believes,” “estimates,” “projects,” “predicts,” “intends,” “think,” “potential,” “objectives,” “optimistic,” “strategy,” “goals,” “sees,” “new,” “guidance,” “future,” “continue,” “drive,” “growth,” “long-term,” “projects,” “develop,” “possible,” “emerging,” “opportunity,” “pursue” and similar expressions intended to identify forward-looking statements. These statements reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties. Given these uncertainties, you should not place undue reliance on these forward-looking statements. We discuss many of these risks in detail in our Annual Report on Form 10-K for the year ended December 31, 2024 and our other filings with the SEC. You should carefully review all of these factors, as well as other risks described in our public filings, and you should be aware that there may be other factors, including factors of which we are not currently aware, that could cause these differences. Also, these forward-looking statements represent our estimates and assumptions only as of the date of this report. We may not update these forward-looking statements, even though our situation may change in the future, unless we have obligations under the federal securities laws to update and disclose material developments related to previously disclosed information. Harvard Bioscience, Inc. is referred to herein as “we,” “our,” “us,” and “the Company.”*

**Overview**

Harvard Bioscience, Inc., a Delaware corporation, is a leading developer, manufacturer and seller of technologies, products and services that enable fundamental advances in life science applications, including research, drug and therapy discovery, bioproduction and preclinical testing for pharmaceutical and therapy development. Our products and services are sold globally to customers ranging from renowned academic institutions and government laboratories to the world’s leading pharmaceutical, biotechnology and contract research organizations (“CROs”). With operations in the United States, Europe and China, we sell through a combination of direct and distribution channels to customers around the world.

**Trends and Developments**

Our business is affected by global and regional economic trends and uncertainties. Our revenue has been and may continue to be affected by our customers forgoing or delaying purchases of our products and services as a result of ongoing uncertainty with respect to the level and timing of funding from the U.S. National Institutes of Health (the “NIH”) or similar government sources. Our business has also been affected by the imposition of increased tariffs on shipments of products between the United States and other countries, and in particular between the United States and China. Our revenue has been and may continue to be affected by greater restrictions and economic disincentives on international trade, including these tariffs. Products and services that we obtain from overseas sources has been and may continue to be affected by these tariffs, resulting in increased costs to our business.

If these trends are prolonged or are more severe than anticipated, our business, results of operations, and cash flow may be materially impacted.

**Selected Results of Operations***Three months ended March 31, 2025, compared to three months ended March 31, 2024*

(dollars in thousands)	Three Months Ended March 31,			
	2025	% of revenue	2024	% of revenue
Revenues	\$ 21,774		\$ 24,512	
Gross profit	12,184	56.0%	14,772	60.3%
Sales and marketing expenses	4,971	22.8%	5,904	24.1%
General and administrative expenses	5,185	23.8%	5,963	24.3%
Research and development expenses	2,321	10.7%	2,885	11.8%
Amortization of intangible assets	1,160	5.3%	1,333	5.4%
Goodwill impairment	47,951	220.2%	-	0.0%
Other operating expenses	264	1.2%	966	3.9%
Interest expense	802	3.7%	751	3.1%
Loss on equity securities	-	0.0%	1,312	5.4%
Income tax (benefit) expense	(454)	-2.1%	210	0.9%

**Revenues**

Revenues decreased \$2.7 million, or 11.2%, to \$21.8 million for the three months ended March 31, 2025, compared to \$24.5 million for the three months ended March 31, 2024. The decrease in revenues was primarily due to continued softening of worldwide demand primarily from academic research institutions and CROs.

**Gross profit**

Gross profit decreased \$2.6 million, or 17.5%, to \$12.2 million for the three months ended March 31, 2025, compared with \$14.8 million for the three months ended March 31, 2024, primarily due to the decrease in revenues as well as the associated lower absorption of fixed manufacturing costs. Gross margin was 56.0% for the three months ended March 31, 2025, compared to 60.3% for the three months ending March 31, 2024. The decrease in gross margin was primarily the result of under-absorption of fixed manufacturing overhead costs due to the decrease in revenues, increases in purchase price variance as well as a higher mix of lower margin products.

**Sales and marketing expenses**

Sales and marketing expenses decreased \$0.9 million, or 15.8%, to \$5.0 million for the three months ended March 31, 2025, compared with \$5.9 million for the three months ended March 31, 2024. This decrease was primarily due to reduced compensation, travel and entertainment, consulting and trade show expenses.

**General and administrative expenses**

General and administrative expenses decreased \$0.8 million, or 13.0%, to \$5.2 million for the three months ended March 31, 2025, compared with \$6.0 million for the three months ended March 31, 2024. The decrease was primarily due to reduced compensation, partially offset by higher professional fees.

**Research and development expenses**

Research and development expenses decreased \$0.6 million, or 19.5%, to \$2.3 million for the three months ended March 31, 2025, compared with \$2.9 million for the three months ended March 31, 2024. This decrease was primarily due to reduced compensation costs.

**Amortization of intangible assets**

Amortization of intangible assets included in operating expenses was \$1.2 million for the three months ended March 31, 2025, compared with \$1.3 million for the three months ended March 31, 2024.

### ***Goodwill impairment***

During the three months ended March 31, 2025, we identified a triggering event, including the sustained decrease in our stock price, our recent operating results, liquidity risk and the current macroeconomic conditions impacting the life sciences industries, requiring an interim impairment test. We recorded a non-cash goodwill impairment charge of \$48.0 million in connection with the interim impairment test.

### ***Other operating expenses***

Other operating expenses for the three months ended March 31, 2025 were \$0.3 million, compared with \$1.0 million for the three months ended March 31, 2024. During the three months ended March 31, 2025, other operating expenses included a fee of \$0.2 million in connection with the receipt of employee retention credits and \$0.1 million of restructuring costs in connection with headcount reductions in North America and Europe. During the three months ended March 31, 2024 other operating expenses included a fee of \$0.5 million in connection with the receipt of employee retention credits and an estimated loss of \$0.5 million related to an unclaimed property audit.

### ***Interest expense***

Interest expense was \$0.8 million for both the three months ended March 31, 2025 and March 31, 2024.

### ***Loss on equity securities***

During the three months ended March 31, 2024, we recorded a loss on equity securities of \$1.3 million consisting of a realized loss of \$0.3 million for shares sold and an unrealized loss of \$1.0 million for shares held of common stock of Harvard Apparatus Regenerative Technology Inc. (“HRGN”). We did not hold any shares of HRGN stock during the three months ended March 31, 2025.

### ***Income tax expense (benefit)***

The income tax (benefit) expense was \$(0.5) million and \$0.2 million for the three months ended March 31, 2025 and 2024, respectively. The effective tax rates for the three months ended March 31, 2025 and 2024 were 0.9% and (4.7)%, respectively. The higher effective tax rate during the three months ended March 31, 2025, compared to the three months ended March 31, 2024, was primarily due to the tax effect of goodwill impairment and the release of reserves related to uncertain tax positions. The Company’s effective tax rate for the three months ended March 31, 2025, was different than the U.S. statutory rate primarily due to the tax effect of goodwill impairment and changes in valuation allowances associated with the Company’s assessment of the likelihood of the recoverability of deferred tax assets.

### **Liquidity and Capital Resources**

Our primary sources of liquidity are cash and cash equivalents, internally generated cash flow from operations and our shelf registration statement that provides for the issuance of common stock, preferred stock, warrants and units up to an amount equal to \$100 million. Our expected cash outlays relate primarily to cash payments due under our Credit Agreement described below as well as salaries, inventory, and capital expenditures. We held cash and cash equivalents of \$5.5 million and \$4.1 million as of March 31, 2025 and December 31, 2024, respectively. Borrowings outstanding were \$36.4 million and \$37.4 million as of March 31, 2025 and December 31, 2024, respectively.

The Coronavirus Aid, Relief, and Economic Security Act of 2020 (the “CARES Act”) provided an employee retention tax credit (“ERTC”) that was a refundable tax credit against certain employer taxes. The Company has received ERTC refunds of \$4.2 million as of March 31, 2025 with \$1.1 million received during the three months ended March 31, 2025. The Company’s compliance with the program’s qualifications may be subject to audit until May 2028, which is when the statute of limitation expires.

We maintain a Credit Agreement that provides for a term loan of \$40.0 million and a \$25.0 million revolving credit facility with an original maturity of December 22, 2025. On March 10, 2025, we entered into an amendment to the Credit Agreement (the “March 2025 Amendment”). The March 2025 Amendment provides, among other things, that the lender’s commitment under our revolving credit facility is capped at the amount outstanding thereunder as of the date thereof and thus we are unable to make additional borrowings under our revolving credit facility. The March 2025 Amendment also establishes certain milestones with respect to the refinancing of the debt underlying the Credit Agreement (the “Refinancing”) and dates by which such milestones must be met. These milestones (the “Refinancing Milestones”) include: (1) continuing to retain an investment banker for the purpose of assisting with the consummation of the Refinancing; (2) by March 14, 2025, the engagement of a financial advisor acceptable to the administrative agent; (3) by April 30, 2025, the delivery to the administrative agent of an executed bona fide indication of interest from one or more potential lenders with respect to the Refinancing on terms and conditions acceptable to the administrative agent; (4) by May 23, 2025, the delivery to the administrative agent of a term sheet or commitment letter from one or more potential lenders that provides for the Refinancing on terms and conditions acceptable to the administrative agent; (5) by June 13, 2025, delivery to the administrative agent of: (i) a statement of sources and uses of transaction proceeds; and (ii) evidence that the potential lender’s conditions to closing (other than customary closing deliveries) of the Refinancing, such as business commitments, are satisfied; and (6) by June 30, 2025, the closing of the Refinancing. The lenders also agreed not to assert the financial covenants included in the Credit Agreement for the first quarter of fiscal year 2025 provided that we continue to comply with our payment obligations, achieve the Refinancing Milestones, maintain minimum liquidity (the “Minimum Liquidity Requirement”) (defined as the sum of (a) unrestricted cash and cash equivalents and (b) the amount by which the aggregate amount committed under the Company’s revolving credit facility exceeds the total amount drawn under the credit facility) of \$3.5 million and provide the administrative agent with certain financial reports. In addition, pursuant to the terms of the March 2025 Amendment the applicable interest rate margin is increased such that interest rate is equal to a rate per annum based on the Secured Overnight Financing Rate (“SOFR”) plus 400 bps and amortization payments were revised so that a proportionate payment must be made on a monthly rather than a quarterly basis. As of May 12, 2025, we were in compliance with the Refinancing Milestones applicable as of such date and the Minimum Liquidity Requirement.

If we are not able to comply with the terms and conditions of the March 2025 Amendment, or if we are otherwise unable to regain and maintain compliance with the covenants under the Credit Agreement, as amended, or are unsuccessful in obtaining waivers or amendments for any covenant in the future, in addition to other actions our lenders may require, the amounts outstanding under the Credit Agreement may become immediately due and payable.

We are exploring alternative sources of capital that would allow us to refinance the outstanding indebtedness by June 30, 2025, in order to avoid default under the Credit Agreement, but our ability to access such other sources of capital is uncertain. There is no assurance that such capital will be available, be obtainable on commercially acceptable terms, or provide sufficient funds to meet our objectives. Based on our anticipated cash flows from operations, unless we are able to access other sources of capital or extend the date for repayment under the Credit Agreement, we will be unable to pay our debt obligations and fund our operations for at least twelve months from the date of issuance of the unaudited consolidated financial statements contained in this Quarterly Report on Form 10-Q. As a result, there is substantial doubt about our ability to continue as a going concern.

#### CONDENSED CONSOLIDATED CASH FLOW STATEMENTS

(in thousands)	Three Months Ended March 31,	
	2025	2024
Cash provided by operating activities	\$ 2,986	\$ 1,403
Cash used in investing activities	(683)	(225)
Cash used in financing activities	(1,204)	(1,055)
Effect of exchange rate changes on cash	339	(151)
Increase (decrease) in cash and cash equivalents	\$ 1,438	\$ (28)

Cash provided by operations was \$3.0 million and \$1.4 million for the three months ended March 31, 2025 and 2024, respectively. Cash flow from operations for the three months ended March 31, 2025 was positively impacted by cash inflows from accounts receivable of \$0.7 million and inventories of \$1.3 million compared with the three months ended March 31, 2024.

Cash used in investing activities was \$0.7 million and \$0.2 million for the three months ended March 31, 2025 and 2024, respectively. Cash used in investing for the three months ended March 31, 2025 consisted of \$0.7 million of capital expenditures for manufacturing and capitalized software development. Cash used in investing activities for the three months ended March 31, 2024 primarily consisted of capital expenditures in manufacturing and information technology infrastructure of \$0.7 million, partially offset by \$0.5 million from the proceeds from the sale of marketable equity securities.

Cash used in financing activities was \$1.2 million and \$1.1 million for the three months ended March 31, 2025 and 2024, respectively. During the three months ended March 31, 2025, we made \$1.0 million in debt repayments on our term loan and paid \$0.1 million in debt issuance costs as part of the March 2025 Amendment. During the three months ended March 31, 2024, debt outstanding under our credit facility decreased by \$1.0 million, consisting of net borrowings under our revolver of \$2.0 million, and payments of \$3.0 million against the term loan.

### **Impact of Foreign Currencies**

Our international operations in some instances operate in a natural hedge, as we sell our products in many countries and a substantial portion of our revenues, costs and expenses are denominated in foreign currencies, primarily the euro and British pound.

During the three months ended March 31, 2025, changes in foreign currency exchange rates resulted in an unfavorable effect on revenues of \$0.1 million and a favorable effect on expenses of \$0.1 million. The loss associated with the translation of our foreign equity into U.S. dollars included as a component of other comprehensive loss was \$1.3 million and \$0.8 million for the three months ended March 31, 2025 and 2024, respectively. Currency exchange rate fluctuations included as a component of net loss resulted in losses of \$0.2 million for the three months ended March 31, 2025. Currency exchange rate fluctuations included as a component of net loss during the three months ended March 31, 2024 were not significant.

### **Critical Accounting Policies**

There have been no material changes to the critical accounting policies underlying the accompanying unaudited consolidated financial statements and as set forth in Part II, Item 7 included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2024.

### **Recent Accounting Pronouncements**

For information on recent accounting pronouncements impacting our business, see “Recently Issued Accounting Pronouncements Yet to Be Adopted” included in Note 1 to our Condensed Consolidated Financial Statements included in Part I, Item 1. of this report.

### **Item 3. Quantitative and Qualitative Disclosures about Market Risk**

Not Applicable.

### **Item 4. Controls and Procedures.**

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

Under the supervision of our Chief Executive Officer and Chief Financial Officer, we evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of March 31, 2025.

Disclosure controls and procedures are designed to ensure that information required to be disclosed in our reports filed or submitted under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the SEC’s rules and forms. Disclosure controls and procedures include controls and procedures designed to ensure that information required to be disclosed in our reports filed under the Exchange Act is accumulated and communicated to management, including our Chief Executive Officer and Chief Financial Officer, to allow timely decisions regarding required disclosure. As described below, we previously identified material weaknesses in our internal control over financial reporting. Solely as a result of these material weaknesses, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were not effective as of March 31, 2025.

*Previously Reported Material Weaknesses*

As reported in Part II, Item 9A. “Controls and Procedures” of our Annual Reports on Form 10-K for the year ended December 31, 2024, we identified material weaknesses in our internal control over financial reporting related to controls over (i) our order to cash cycle and (ii) our physical count of inventories. Specifically, we did not design and maintain effective manual controls over the processing and review of a substantial portion of our revenue transactions. Additionally, we did not design and maintain an effective cycle count program to verify quantities of inventories held at Company locations that account for a substantial portion of inventories. The timeliness, level of precision, and appropriate segregation of duties in our review processes over revenue transactions and our physical counts of inventories were not sufficient to prevent, detect, and correct potential misstatements in a timely manner.

While management, with oversight from the Audit Committee of our Board of Directors, has commenced implementing changes to our internal control over financial reporting in order to remediate the control deficiencies that resulted in the material weaknesses as previously disclosed in our Form 10-K for the fiscal year ended December 31, 2024, additional time is required to complete the material weakness remediation work. We expect to continue our efforts throughout fiscal year 2025. We believe that the implementation of the remediation plans disclosed under “Part II - Item 9A - Controls and Procedures” in our Annual Report on Form 10-K for the fiscal year ended December 31, 2024, will allow us to address the deficient controls within our internal control environment, which will facilitate the remediation of the material weaknesses. The material weaknesses will not be considered remediated until management completes the design and implementation of the measures disclosed under “Part II - Item 9A - Controls and Procedures” in our Annual Report on Form 10-K for the fiscal year ended December 31, 2024 and the controls operate for a sufficient period of time such that the effectiveness of those changes is demonstrated with an appropriate amount of consistency and management has concluded, through testing, that these controls are effective. We also may conclude that additional measures may be required to remediate the material weaknesses or determine to modify the remediation plans..

*Changes in Internal Control over Financial Reporting*

Other than changes related to remediation of the material weaknesses, there were no changes in our internal control over financial reporting during the first quarter of fiscal 2025 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

*Limitations on Effectiveness of Controls and Procedures*

In designing and evaluating our controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and management is required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud within the Company have been detected.

**PART II. OTHER INFORMATION**

**Item 1. Legal Proceedings.**

The information included in Note 13 to the Condensed Consolidated Financial Statements (Unaudited) included in Part I, Item 1 of this quarterly report is incorporated herein by reference.

**Item 1A. Risk Factors.**

You should carefully consider the risk factors discussed in Part I, “Item 1A. Risk Factors” in our Annual Report on Form 10-K for the fiscal year ended December 31, 2024, which could materially affect our business, financial position, or future results of operations. The risks described in our Annual Report on Form 10-K are not the only risks we face. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial may also materially adversely affect our business, financial position, or future results of operations. The risk factor set forth below updates, and should be read together with, the risk factors described in our Annual Report on Form 10-K for the fiscal year ended December 31, 2024.

*We have received written notice from Nasdaq that we are not in compliance with Nasdaq’s minimum bid price requirements and if we are unable to regain compliance with Nasdaq continued listing standards, which may require effecting a reverse stock split of our common stock, we could be delisted from Nasdaq, which would negatively impact our business, our ability to raise capital, and the market price and liquidity of our common stock.*

The Nasdaq Stock Market LLC (“Nasdaq”) Listing Rule 5450(a)(1) requires that securities listed on The Nasdaq Global Market maintain a minimum bid price of \$1.00 per share (the “Minimum Bid Price Requirement”), and Nasdaq Listing Rule 5810(c)(3)(A) provides that a failure to meet the Minimum Bid Price Requirement exists if the deficiency continues for a period of thirty (30) consecutive business days.

On April 4, 2025, the Company received written notice (the “Notification Letter”) from Nasdaq notifying the Company that, based on the closing bid price of the Company’s common stock for the thirty (30) consecutive business days from February 21, 2025 to April 3, 2025, the Company no longer meets the Minimum Bid Price Requirement. The Notification Letter had no immediate effect on the listing of the Company’s common stock on The Nasdaq Global Market. The Company has been provided an initial compliance period of 180 calendar days, or until October 1, 2025, to regain compliance with the Minimum Bid Price Requirement. During the compliance period, the Company’s shares of common stock will continue to be listed and traded on The Nasdaq Global Market

There is no assurance that we will be able to regain compliance with the Minimum Bid Price Requirement. To regain compliance, the bid price of the Company’s common stock must have a closing bid price of at least \$1.00 per share for a minimum of ten (10) consecutive business days. If the Company does not regain compliance with the Minimum Bid Price Requirement by October 1, 2025, the Company may be eligible to transfer from The Nasdaq Global Market to the Nasdaq Capital Market and seek an additional 180 calendar day compliance period. To qualify for such transfer, the Company would be required to meet the continued listing requirement for market value of publicly held shares and all other initial listing standards for The Nasdaq Capital Market, with the exception of the Minimum Bid Price Requirement, and would need to provide written notice of its intention to cure the deficiency during the second compliance period, by effecting a reverse stock split, if necessary. However, if it appears to the staff of Nasdaq (the “Staff”) that the Company will not be able to cure the Minimum Bid Price Requirement deficiency, or if the Company is otherwise not eligible, Nasdaq would notify the Company that its securities would be subject to delisting. In the event of such a notification, the Company may appeal the Staff’s determination to delist its securities, but there can be no assurance the Staff would grant the Company’s request for continued listing.

The Company intends to actively monitor the bid price for its common stock and will consider available options, including effecting a reverse stock split, to regain compliance with the Minimum Bid Price Requirement. Our ability to take action and the effect of any of our actions, including seeking stockholder approval for and effecting a reverse stock split, on the market price of our common stock cannot be predicted with certainty, and the history of the impact of similar measures for companies in like circumstances is varied. For example, it is possible that the per share price of the common stock after a reverse stock split will not rise in proportion to the reduction in the number of shares of the common stock outstanding resulting from the reverse stock split, effectively reducing our market capitalization, and there can be no assurance that the market price per post-reverse split share will either exceed or remain in excess of the required minimum bid price for a sustained period of time. The market price of our common stock may vary based on other factors that are unrelated to the number of shares outstanding, including the Company’s future performance.

If our common stock is delisted by Nasdaq, it could adversely affect our ability to raise additional financing through public or private sales of equity securities, could significantly affect the ability of investors to trade our securities and could negatively affect the value and liquidity of our common stock. Delisting could also have other negative impacts, including the potential loss of confidence by our employees and customers, the loss of investor and analyst interest in the Company and in our common stock and fewer business development opportunities for the Company.

**Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.**

There were no unregistered sales of equity securities during the period covered by this report.

**Item 3. Defaults Upon Senior Securities.**

None.

**Item 4. Mine Safety Disclosures.**

Not applicable.

**Item 5. Other Information.**

None of our directors or executive officers adopted or terminated a Rule 10b5-1 trading arrangement or a non-Rule 10b5-1 trading arrangement (as defined in Item 408(c) of Regulation S-K) during the quarterly period covered by this report.

**Item 6. Exhibits.**

- [10.1](#) [Letter Agreement between Mark Frost and the Company dated April 10, 2025 \(previously filed as an exhibit to the Company's Current Report on Form 8-K, filed with the Securities and Exchange Commission on April 10, 2025 and incorporated by reference thereto\).](#)
- [31.1](#) [Certification of Chief Financial Officer of Harvard Bioscience, Inc., pursuant to Rules 13a-14\(a\) and 15d-14\(a\), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.](#)
- [31.2](#) [Certification of Chief Executive Officer of Harvard Bioscience, Inc., pursuant to Rules 13a-14\(a\) and 15d-14\(a\), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.](#)
- [32.1\\*](#) [Certification of Chief Financial Officer of Harvard Bioscience, Inc., pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.](#)
- [32.2\\*](#) [Certification of Chief Executive Officer of Harvard Bioscience, Inc., pursuant to 18 U.S.C. Section 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 Labels Linkbase Document
- 101.PRE Inline XBRL Taxonomy Extension Presentation Linkbase Document
- 104 Cover Page Interactive Data File (formatted in Inline XBRL and contained in Exhibit 101)

\* This certification shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise subject to the liability of that section, nor shall it be deemed to be incorporated by reference into any filing under the Securities Act of 1933 or 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 undersigned thereunto duly authorized.

Date: May 12, 2025

HARVARD BIOSCIENCE, INC.

By: \_\_\_\_\_ /s/ JAMES GREEN  
James Green  
Chief Executive Officer

By: \_\_\_\_\_ /s/ JENNIFER COTE  
Jennifer Cote  
Chief Financial Officer

**Certification**

I, Jennifer Cote, certify that:

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

Date May 12, 2025

/s/ JENNIFER COTE

Jennifer Cote  
Chief Financial Officer

**Certification**

I, James Green, certify that:

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

Date: May 12, 2025

/s/ JAMES GREEN

James Green  
Chief Executive Officer

**CERTIFICATION OF PERIODIC FINANCIAL REPORT PURSUANT TO 18 U.S.C. SECTION 1350**

The undersigned officer of Harvard Bioscience, Inc. (the “Company”) hereby certifies to her knowledge that the Company’s Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2025 (the “Report”) to which this certification is being furnished as an exhibit, as filed with the Securities and Exchange Commission on the date hereof, fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company. This certification is provided solely pursuant to 18 U.S.C. Section 1350 and Item 601(b) (32) of Regulation S-K (Item 601(b)(32)) promulgated under the Securities Act of 1933, as amended (the “Securities Act”), and the Exchange Act. In accordance with clause (ii) of Item 601(b)(32), this certification (A) shall not be deemed “filed” for purposes of Section 18 of the Exchange Act, or otherwise subject to the liability of that section, and (B) shall not be deemed to be incorporated by reference into any filing under the Securities Act or the Exchange Act, except to the extent that the Company specifically incorporates it by reference.

Date: May 12, 2025

/s/ JENNIFER COTE

Name: Jennifer Cote  
Title: Chief Financial Officer

**CERTIFICATION OF PERIODIC FINANCIAL REPORT PURSUANT TO 18 U.S.C. SECTION 1350**

The undersigned officer of Harvard Bioscience, Inc. (the “Company”) hereby certifies to his knowledge that the Company’s Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2025 (the “Report”) to which this certification is being furnished as an exhibit, as filed with the Securities and Exchange Commission on the date hereof, fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company. This certification is provided solely pursuant to 18 U.S.C. Section 1350 and Item 601(b)(32) of Regulation S-K (Item 601(b)(32)) promulgated under the Securities Act of 1933, as amended (the “Securities Act”), and the Exchange Act. In accordance with clause (ii) of Item 601(b)(32), this certification (A) shall not be deemed “filed” for purposes of Section 18 of the Exchange Act, or otherwise subject to the liability of that section, and (B) shall not be deemed to be incorporated by reference into any filing under the Securities Act or the Exchange Act, except to the extent that the Company specifically incorporates it by reference.

Date: May 12, 2025

/s/ JAMES GREEN

Name: James Green  
Title: Chief Executive Officer