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

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event Reported): November 5, 2019

HARVARD BIOSCIENCE, INC.

(Exact Name of Registrant as Specified in Charter)

Delaware
(State or Other Jurisdiction of Incorporation)

001-33957
(Commission File Number)

04-3306140
(I.R.S. Employer Identification Number)

84 October Hill Road, Holliston, MA 01746
(Address of Principal Executive Offices) (Zip Code)

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

(Former name or former address, if changed since last report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

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 Stock Market

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (17 CFR §230.405) or Rule 12b-2 of the Securities Exchange Act of 1934 (17 CFR §240.12b-2). 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.

Item 1.01. Entry into a Material Definitive Agreement.

On November 5, 2019, Harvard Bioscience, Inc., or the Company, entered into a Second Amendment by and among the Company and certain subsidiaries of the Company parties thereto, as borrowers (collectively, the "Borrower"), certain subsidiaries of the Company parties thereto, as guarantors, various lenders party thereto, or the Lenders, and Cerberus Business Finance, LLC, as collateral agent for the Lenders. The Second Amendment is referred to herein as the Amendment. The Amendment modifies the Company's Financing Agreement entered into on January 31, 2018, to among other things, increase the maximum leverage ratio and amount of restructuring and related costs to be excluded from consolidated EBITDA for certain periods, and decreases the minimum fixed charge coverage ratio. Additionally, pursuant to the Amendment, the applicable interest rate margin was modified to adjust based on the Company's leverage ratio and the Company agreed to extend the prepayment penalty periods. The Amendment is effective for covenant calculations commencing with the period ended September 30, 2019, other than the change in minimum fixed charge coverage ratio which is effective beginning the three months ended December 31, 2019. A copy of the Amendment is attached as Exhibit 10.1 hereto and is incorporated by reference. The foregoing description of the Amendment does not purport to be complete and is qualified in its entirety by reference to the Amendment.

Item 2.02. Results of Operations and Financial Condition.

On November 5, 2019, Harvard Bioscience, Inc. issued a press release announcing financial results for the three and nine months ended September 30, 2019 and the details of a related conference call to be held at 4:30 PM EST on November 5, 2019. The press release is furnished as Exhibit 99.1 and incorporated herein by reference.

The information in Item 2.02 of this Current Report on Form 8-K and Exhibit 99.1 attached hereto shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934 (the "Exchange Act") or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933 or the Exchange Act, except as shall be expressly set forth by specific reference in such a filing.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits.

Exhibit Index

Description

10.1*	Second Amendment to Financing Agreement, dated November 5, 2019, between Harvard Bioscience, Inc., each of the other borrowers named therein, the lenders party thereto, and Cerberus Business Finance, LLC.
99.1	Press release issued by Harvard Bioscience, Inc. on November 5, 2019.

*Schedules (and similar attachments) have been omitted pursuant to Item 601(b)(2) of Regulation S-K. The Company agrees to furnish to the Securities and Exchange Commission a copy of such schedules and exhibits, or any section thereof, upon request.

SIGNATURE

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 hereunto duly authorized.

HARVARD BIOSCIENCE, INC.

Date: November 5, 2019

By: /s/ James Green
James Green
Chief Executive Officer

SECOND AMENDMENT TO FINANCING AGREEMENT

SECOND AMENDMENT, dated as of November 5, 2019 (this "Amendment"), to the Financing Agreement, dated as of January 31, 2018 (as the same may be amended, restated, supplemented or otherwise modified from time to time, including any replacement agreement therefor, the "Financing Agreement"), by and among Harvard Bioscience, Inc., a Delaware corporation (the "Parent" or the "Borrowing Agent"), each subsidiary of the Parent listed as a "Borrower" on the signature pages thereto (together with the Parent and each other Person that executes a joinder agreement and becomes a "Borrower" thereunder, each a "Borrower" and collectively, the "Borrowers"), the Guarantors (as defined therein) from time to time party thereto, the lenders from time to time party thereto (each a "Lender" and collectively, the "Lenders"), Cerberus Business Finance, LLC, a Delaware limited liability company, as collateral agent for the Lenders (in such capacity, together with its successors and assigns in such capacity, the "Collateral Agent"), and PNC Bank, National Association, as administrative agent for the Lenders (in such capacity, together with its successors and assigns in such capacity, the "Administrative Agent" and together with the Collateral Agent, each an "Agent" and, collectively, the "Agents").

WHEREAS, the Loan Parties have requested, and the Agents and the Required Lenders have agreed, subject to the terms and conditions set forth herein, to amend the Financing Agreement on the terms and conditions set forth below.

NOW THEREFORE, in consideration of the premises and other good and valuable consideration, the parties hereto hereby agree as follows:

1. Definitions. All terms used herein that are defined in the Financing Agreement and not otherwise defined herein shall have the meanings assigned to them in the Financing Agreement.

2. Amendments.

(a) New Definitions. Section 1.01 of the Financing Agreement is hereby amended by adding the following definitions, in appropriate alphabetical order:

(i) "Second Amendment" means the Second Amendment to Financing Agreement, dated as of November 5, 2019, by and among the Loan Parties, the Agents and the Required Lenders.

(ii) "Second Amendment Effective Date" means the 'Second Amendment Effective Date' as set forth in the Second Amendment.

(b) Existing Definitions.

(i) Section 1.01 of the Financing Agreement is hereby amended by amending and restating the definition of "Applicable Margin" in its entirety to read as follows:

"Applicable Margin" means, as of any date of determination, with respect to the interest rate of any Loan (or any portion thereof):

(a) From the Second Amendment Effective Date until November 15, 2019 (the "Initial Applicable Margin Period"), the relevant Applicable Margin shall be set at Level III in the table below.

(b) After the Initial Applicable Margin Period, the relevant Applicable Margin shall be set at the respective level indicated below based upon the Leverage Ratio set forth opposite thereto (giving effect to the calculation as required pursuant to the second proviso contained in clause (vi) of the definition of "Consolidated EBITDA"), which ratio shall be calculated as of the end of the most recent Fiscal Quarter of the Parent and its Subsidiaries for which quarterly financial statements and a certificate of an Authorized Officer of the Parent are received by the Agents and the Lenders in accordance with Section 7.01(a)(ii) and Section 7.01(a)(iv):

Level	Leverage Ratio	Reference Rate Loans	LIBOR Rate Loans
I	Greater than or equal to 4.00:1.00	5.5%	7.00%
II	Less than 4.00:1.00 and equal to or greater than 3.50:1.00	5.125%	6.625%
III	Less than 3.50:1.00 and equal to or greater than 3.00:1.00	4.75%	6.25%
IV	Less than 3.00:1.00	4.5%	6.00%

(c) Subject to clause (d) below, the adjustment of the Applicable Margin (if any) will occur 2 Business Days after the date the Administrative Agent receives the quarterly financial statements and a certificate of an Authorized Officer of the Parent in accordance with Section 7.01(a)(ii) and Section 7.01(a)(iv).

(d) Notwithstanding the foregoing:

(i) the Applicable Margin shall be set at Level I in the table above, at the election of the Collateral Agent, (x) upon the occurrence and during the continuation of a Default or Event of Default, or (y) if for any period, the Administrative Agent does not receive the financial statements and certificates described in clause (c) above, for the period commencing on the date such financial statements and certificate were required to be delivered through the date on which such financial statements and certificate are actually received by the Administrative Agent and the Lenders; and

(ii) in the event that any financial statement or certificate described in clause (c) above is inaccurate (regardless of whether this Agreement or any Commitments are in effect when such inaccuracy is discovered), and such inaccuracy, if corrected, would have led to the application of a higher Applicable Margin for any fiscal period, then the Applicable Margin for such fiscal period shall be adjusted retroactively (to the effective date of the determination of the Applicable Margin that was based upon the delivery of such inaccurate financial statement or certificate) to reflect the correct Applicable Margin, and the Borrowers shall promptly make payments to the Agents and the Lenders to reflect such adjustment."

(ii) Section 1.01 of the Financing Agreement is hereby amended by amending and restating clauses (a) of the definition of "Applicable Prepayment Premium" in its entirety to read as follows:

"(a) with respect to prepayments of the Term Loans, an amount equal to (i) during the period of time from and after the Effective Date up to and including the date that is the first anniversary of the Effective Date (the "First Period"), an amount equal to 3.00% times the principal amount of any prepayment of the Term Loan on such date, (ii) after the First Period up to and including July 22, 2020 (the "Second Period"), an amount equal to 2.00% times the principal amount of any prepayment of the Term Loan on such date, (iii) after the Second Period up to and including July 22, 2021 (the "Third Period"), an amount equal to 1.00% times the principal amount of any prepayment of the Term Loan on such date and (iv) thereafter, zero; and"

(iii) Section 1.01 of the Financing Agreement is hereby amended by amending and restating clause (b)(vi) of the definition of "Consolidated EBITDA" in its entirety to read as follows:

"(vi) extraordinary or non-recurring charges, expenses or losses; reasonably identifiable and factually supportable restructuring charges, costs and expenses (as set forth in a certificate of an Authorized Officer of the Parent); severance costs; non-cash reserves in connection with the Transactions; provided, that (A) the aggregate amount added back pursuant to this clause (vi) for any measurement period shall not exceed 15.0% of Consolidated EBITDA of the Parent and its Subsidiaries for such period (calculated before giving effect to any adjustment pursuant to this clause (vi), including subclause (B) below) and (B) notwithstanding subclause (A), solely with respect to any Fiscal Quarter ending September 30, 2019 through and including September 30, 2020, without duplication, any cash charges incurred in respect of the items set forth in Schedule 1.01(G) may be added back in an aggregate amount not exceeding such amount specified therein (or such other amount or higher respective thresholds as may be approved by the Collateral Agent in its Permitted Discretion); provided, further, that notwithstanding anything contained herein to the contrary, solely with respect to the determination of the Leverage Ratio in connection with the Applicable Margin, the adjustments pursuant to this subclause (B) shall not be used in making such calculation,"

(iv) Section 1.01 of the Financing Agreement is hereby amended by amending the definition of "LIBOR" by replacing the reference therein to "1.25%" with "1.75%".

(v) Section 1.01 of the Financing Agreement is hereby amended by amending and restating the definition of "LIBOR Rate" in its entirety to read as follows:

"LIBOR Rate' means, (x) for each Interest Period for each LIBOR Rate Loan that is a Term Loan, the greater of (a) the rate per annum determined by the Administrative Agent (rounded upwards if necessary, to the next 1/100% of 1%) by dividing (i) LIBOR for such Interest Period by (ii) 100% minus the Reserve Percentage and (b) 1.75% and (y) for each Interest Period for each LIBOR Rate Loan that is a Revolving Loan, the rate per annum determined by the Administrative Agent (rounded upwards if necessary, to the next 1/100% of 1%) by dividing (i) LIBOR for such Interest Period by (ii) 100% minus the Reserve Percentage. The LIBOR Rate shall be adjusted on and as of the effective day of any change in the Reserve Percentage; provided, however, that if the LIBOR Rate determined as provided above would be less than zero, such rate shall be deemed to be zero for purposes of this Agreement."

(c) Section 7.03(a) of the Financing Agreement is hereby amended and restated in its entirety to read as follows:

"(a) Leverage Ratio. Permit the Leverage Ratio of the Parent and its Subsidiaries for any period of four consecutive Fiscal Quarters of the Parent and its Subsidiaries for which the last Fiscal Quarter ends on a date set forth below to be greater than the ratio set forth opposite such date:

<u>Fiscal Quarter End</u>	<u>Leverage Ratio</u>
March 31, 2018	4.50:1.00
June 30, 2018	4.50:1.00
September 30, 2018	4.25:1.00
December 31, 2018	4.00:1.00
March 31, 2019	3.75:1.00
June 30, 2019	3.75:1.00
September 30, 2019	3.50:1.00
December 31, 2019	3.50:1.00
March 31, 2020	3.50:1.00
June 30, 2020, and every Fiscal Quarter thereafter	3.25:1.00"

(d) Section 7.03(b) of the Financing Agreement is hereby amended and restated in its entirety to read as follows:

"(b) Fixed Charge Coverage Ratio. Permit the Fixed Charge Coverage Ratio of the Parent and its Subsidiaries for any period of four consecutive Fiscal Quarters of the Parent and its Subsidiaries for which the last Fiscal Quarter ends on a date set forth below to be less than the ratio set forth opposite such date:

<u>Fiscal Quarter End</u>	<u>Fixed Charge Coverage Ratio</u>
March 31, 2018	1.25:1.00
June 30, 2018	1.25:1.00
September 30, 2018	1.50:1.00
December 31, 2018	1.50:1.00
March 31, 2019	1.50:1.00
June 30, 2019	1.50:1.00
September 30, 2019	1.50:1.00
December 31, 2019 and every Fiscal Quarter thereafter	1.25:1.00"

(e) Schedule 1.01(G) set forth in Annex A hereto shall be appended to the end of the Financing Agreement.

3. Financial Covenants. The Loan Parties shall be permitted to calculate Consolidated EBITDA and the covenants set forth in Section 7.03 of the Financing Agreement for the Fiscal Quarter ended September 30, 2019, in accordance with the Financing Agreement as amended by this Amendment.

4. Representations and Warranties. Each Loan Party hereby represents and warrants to the Agents and the Lenders as follows:

(a) Organization, Good Standing, Etc. Each Loan Party and each of its Subsidiaries (i) is a corporation, limited company, limited liability company or limited partnership, as applicable, duly organized, validly existing and in good standing under the laws of the state or jurisdiction of its incorporation or organization, as applicable, (ii) has all requisite power and authority to conduct its business as now conducted and as presently contemplated and to execute and deliver this Amendment, and to consummate the transactions contemplated hereby and by the Financing Agreement, as amended hereby, and (iii) is duly qualified to do business and is in good standing in each jurisdiction in which the character of the properties owned or leased by it or in which the transaction of its business makes such qualification necessary, except (solely for the purposes of this subclause (iii)) where the failure to be so qualified or in good standing, individually or in the aggregate, could not reasonably be expected to result in a Material Adverse Effect.

(b) Authorization, Etc. The execution, delivery and performance by each Loan Party of this Amendment and the Financing Agreement, as amended hereby, (i) have been duly authorized by all necessary corporate or other organizational action, (ii) do not and will not contravene any of its Governing Documents or, in any material respect, any applicable Requirement of Law, (iii) do not and will not conflict with, result in a breach of, or constitute (with due notice or lapse of time or both) a default under any Material Contract, (iv) do not and will not result in or require the creation of any Lien (other than pursuant to any Loan Document) upon or with respect to any of its properties, and (v) do not and will not result in any default, noncompliance, suspension, revocation, impairment, forfeiture or nonrenewal of any material permit, license, authorization or approval applicable to its operations or any of its properties.

(c) Governmental Approvals. No authorization or approval or other action by, and no notice to or filing with, any Governmental Authority is required in connection with the due execution, delivery and performance by any Loan Party of this Amendment and the Financing Agreement, as amended hereby, other than (x) authorizations, approvals, notices, filings or other actions that have been obtained and that are still in force and effect and (y) filing of this Amendment with the SEC following the execution hereof.

(d) Enforceability of Amendment. Each of this Amendment and the Financing Agreement, as amended hereby, is and each other Loan Document to which any Loan Party is or will be a party, when delivered hereunder, will be a legal, valid and binding obligation of such Person which is a party thereto, enforceable against such Person in accordance with its terms, except as enforceability may be limited by applicable equitable principles or by bankruptcy, insolvency, reorganization, moratorium or other similar laws affecting the enforcement of creditors' rights generally.

5. Conditions to Effectiveness. This Amendment shall become effective only upon satisfaction in full, in a manner satisfactory to the Collateral Agent, of the following conditions precedent (the first date upon which all such conditions shall have been satisfied being herein called the "Second Amendment Effective Date"):

(a) Delivery of Documents. The Collateral Agent shall have received this Amendment duly executed and delivered by the Loan Parties, the Agents and the Lenders.

(b) Representations and Warranties. The representations and warranties contained in ARTICLE VI of the Financing Agreement (as amended hereby) and in each other Loan Document, certificate or other writing delivered to any Secured Party pursuant hereto or thereto on or prior to the Second Amendment Effective Date shall be true and correct in all material respects (except that such materiality qualifier shall not be applicable any representations or warranties that already are qualified or modified as to "materiality" or "Material Adverse Effect" in the text thereof, which representations and warranties shall be true and correct in all respects subject to such qualification) on and as of the Second Amendment Effective Date as though made on and as of the Second Amendment Effective Date, except to the extent that any such representation or warranty expressly relates solely to an earlier date (in which case such representation or warranty shall be true and correct in all material respects (except that such materiality qualifier shall not be applicable to any representations or warranties that already are qualified or modified as to "materiality" or "Material Adverse Effect" in the text thereof, which representations and warranties shall be true and correct in all respects subject to such qualification) on and as of such earlier date).

(c) No Default or Event of Default. After giving effect to this Amendment, no Default or Event of Default shall have occurred and be continuing on the Second Amendment Effective Date or would result from this Amendment becoming effective in accordance with its terms.

(d) Payment of Fees, Etc. The Loan Parties shall have paid (i) an amendment fee to the Collateral Agent solely for its own account, in an amount equal to \$50,000, which fee shall be deemed earned in full on the Second Amendment Effective Date and shall be non-refundable and (ii) all fees, costs and expenses then due and payable by the Loan Parties pursuant to the Loan Documents, including, without limitation, the Fee Letter and Sections 2.06 and 12.04 of the Financing Agreement.

6. Continued Effectiveness of the Financing Agreement and Other Loan Documents. Each Loan Party hereby (i) acknowledges and consents to this Amendment, (ii) confirms and agrees that the Financing Agreement and each other Loan Document to which it is a party is, and shall continue to be, in full force and effect and is hereby ratified and confirmed in all respects except that on and after the Second Amendment Effective Date all references in any such Loan Document to "the Financing Agreement", the "Agreement", "thereto", "thereof", "thereunder" or words of like import referring to the Financing Agreement shall mean the Financing Agreement as amended by this Amendment, and (iii) confirms and agrees that to the extent that any such Loan Document purports to assign or pledge to the Collateral Agent for the benefit of the Agents and the Lenders, or to grant to the Collateral Agent for the benefit of the Agents and the Lenders a security interest in or Lien on, any Collateral as security for the Obligations from time to time existing in respect of the Financing Agreement (as amended hereby) and the other Loan Documents, such pledge, assignment and/or grant of the security interest or Lien is hereby ratified and confirmed in all respects. This Amendment does not and shall not affect any of the obligations of the Loan Parties, other than as expressly provided herein, including, without limitation, the Loan Parties' obligations to repay the Loans in accordance with the terms of Financing Agreement, or the obligations of the Loan Parties under any Loan Document to which they are a party, all of which obligations shall remain in full force and effect, and nothing herein contained shall be construed as a substitution or novation of the obligations outstanding under the Financing Agreement or instruments securing the same. Nothing expressed or implied in this Amendment shall be construed as a release or other discharge of any Loan Party under the Financing Agreement, or the other Loan Documents, as amended hereby, from any of its obligations and liabilities as a "Borrower", "Guarantor" or "Loan Party" thereunder. Except as expressly provided herein, the execution, delivery and effectiveness of this Amendment shall not operate as a waiver of any right, power or remedy of the Agents or any Lender under the Financing Agreement or any other Loan Document, nor constitute a waiver of any provision of the Financing Agreement or any other Loan Document.

7. Miscellaneous.

(a) This Amendment may be executed in any number of counterparts and by different parties hereto in separate counterparts, each of which shall be deemed to be an original but all of which taken together shall constitute one and the same agreement. Delivery of an executed counterpart of this Amendment by facsimile or electronic mail shall be equally effective as delivery of an original executed counterpart of this Amendment.

(b) Section and paragraph headings herein are included for convenience of reference only and shall not constitute a part of this Amendment for any other purpose.

(c) This Amendment shall be governed by, and construed in accordance with, the laws of the State of New York.

(d) Each Loan Party hereby acknowledges and agrees that this Amendment constitutes a "Loan Document" under the Financing Agreement. Accordingly, it shall be an Event of Default under the Financing Agreement if (i) any representation or warranty made by a Loan Party under or in connection with this Amendment shall have been incorrect in any material respect when made, or (ii) any Loan Party shall fail to perform or comply with any covenant or agreement contained in this Amendment.

(e) Any provision of this Amendment that is prohibited or unenforceable in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such prohibition or unenforceability without invalidating the remaining portions hereof or affecting the validity or enforceability of such provision in any other jurisdiction.

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IN WITNESS WHEREOF, the parties hereto have caused this Amendment to be executed and delivered as of the date set forth on the first page hereof.

BORROWERS:

HARVARD BIOSCIENCE, INC.

By: /s/ Michael A. Rossi
Name: Michael A. Rossi
Title: Chief Financial Officer

DATA SCIENCES INTERNATIONAL, INC.

By: Harvard Bioscience, Inc., its sole shareholder

By: /s/ Michael A. Rossi
Name: Michael A. Rossi
Title: Chief Financial Officer

[Second Amendment to Financing Agreement]

GUARANTORS:

HOEFER, INC.

By: Harvard Bioscience, Inc., its sole shareholder

By: /s/ Michael A. Rossi
Name: Michael A. Rossi
Title: Chief Financial Officer

WARNER INSTRUMENTS LLC

By: Harvard Bioscience, Inc., its sole member

By: /s/ Michael A. Rossi
Name: Michael A. Rossi
Title: Chief Financial Officer

TRIANGLE BIOSYSTEMS, INC.

By: Harvard Bioscience, Inc., its sole shareholder

By: /s/ Michael A. Rossi
Name: Michael A. Rossi
Title: Chief Financial Officer

HBIO DISTRIBUTION OLDSCO, INC.

By: Harvard Bioscience, Inc., its sole shareholder

By: /s/ Michael A. Rossi
Name: Michael A. Rossi
Title: Chief Financial Officer

[Second Amendment to Financing Agreement]

COULBOURN INSTRUMENTS, LLC

By: HBIO Distribution Oldco, Inc., its sole member
By: Harvard Bioscience, Inc., its sole shareholder

By: /s/ Michael A. Rossi
Name: Michael A. Rossi
Title: Chief Financial Officer

BIOCHROM US, INC.

By: Harvard Bioscience, Inc., its sole shareholder

By: /s/ Michael A. Rossi
Name: Michael A. Rossi
Title: Chief Financial Officer

BIOCHROM LIMITED

By: /s/ James Green
Name: James Green
Title: Director

EALING SCIENTIFIC LIMITED /
LA COMPAGNIE SCIENTIFIQUE EALING LIMITÉE

By: Harvard Bioscience, Inc., its sole shareholder

By: /s/ Michael A. Rossi
Name: Michael A. Rossi
Title: Chief Financial Officer

[Second Amendment to Financing Agreement]

DATA SCIENCES UK (MN) LIMITED
By: Data Sciences International, Inc., its sole shareholder

By: /s/ Michael A. Rossi
Name: Michael A. Rossi
Title: Director

[Second Amendment to Financing Agreement]

COLLATERAL AGENT:
CERBERUS BUSINESS FINANCE, LLC

By: /s/ Daniel E. Wolf
Name: Daniel E. Wolf
Title: Chief Executive Officer

[Second Amendment to Financing Agreement]

LENDERS:

CERBERUS ASRS FUNDING LLC

By: /s/ Daniel E. Wolf
Name: Daniel E. Wolf
Title: Vice President

CERBERUS CAVALIERS LEVERED LLC

By: /s/ Daniel E. Wolf
Name: Daniel E. Wolf
Title: Vice President

CERBERUS ICQ OFFSHORE LEVERED LP

By: Cerberus ICQ Offshore GP LLC
Its: General Partner

By: /s/ Daniel E. Wolf
Name: Daniel E. Wolf
Title: Senior Managing Director

CERBERUS LOAN FUNDING XX L.P.

By: Cerberus LFGP XX, LLC
Its: General Partner

By: /s/ Daniel E. Wolf
Name: Daniel E. Wolf
Title: Senior Managing Director

CERBERUS LOAN FUNDING XXII L.P.

By: Cerberus LFGP XXII, LLC
Its: General Partner

By: /s/ Daniel E. Wolf
Name: Daniel E. Wolf
Title: Senior Managing Director

CERBERUS LOAN FUNDING XXIII L.P.

By: Cerberus LFGP XXIII, LLC
Its: General Partner

By: /s/ Daniel E. Wolf
Name: Daniel E. Wolf
Title: Senior Managing Director

CERBERUS LOAN FUNDING XXIV L.P.
By: Cerberus LFGP XXIV, LLC
Its: General Partner

By: /s/ Daniel E. Wolf
Name: Daniel E. Wolf
Title: Senior Managing Director

CERBERUS LOAN FUNDING XXV LP
By: Cerberus LFGP XXV, LLC
Its: General Partner

By: /s/ Daniel E. Wolf
Name: Daniel E. Wolf
Title: Senior Managing Director

CERBERUS LOAN FUNDING XXVI L.P.
By: Cerberus LFGP XXVI, LLC
Its: General Partner

By: /s/ Daniel E. Wolf
Name: Daniel E. Wolf
Title: Senior Managing Director

CERBERUS N-1 FUNDING LLC

By: /s/ Daniel E. Wolf
Name: Daniel E. Wolf
Title: Vice President

CERBERUS ND LEVERED LLC

By: /s/ Daniel E. Wolf
Name: Daniel E. Wolf
Title: Vice President

CERBERUS OFFSHORE LEVERED III LP
By: COL III GP Inc.
Its: General Partner

By: /s/ Daniel E. Wolf
Name: Daniel E. Wolf
Title: Vice President

[Second Amendment to Financing Agreement]

CERBERUS REDWOOD LEVERED A LLC

By: /s/ Daniel E. Wolf
Name: Daniel E. Wolf
Title: Vice President

CERBERUS SWC LEVERED II LLC

By: /s/ Daniel E. Wolf
Name: Daniel E. Wolf
Title: Vice President

[Second Amendment to Financing Agreement]

Harvard Bioscience Announces Third Quarter Financial Results

Improves adjusted operating margins while taking actions to underpin next year's profit and growth targets

- Q3 Revenue of \$27.4 million
- Q3 Operating Loss (GAAP) of \$(1.4) million; Adjusted Operating Income (Non-GAAP) of \$3.3 million
- Q3 GAAP EPS of \$(0.07); Adjusted Diluted EPS (Non-GAAP) of \$0.04

HOLLISTON, Mass., Nov. 05, 2019 (GLOBE NEWSWIRE) -- Harvard Bioscience, Inc. (Nasdaq: HBIO) (the "Company"), today announced financial results for the three and nine months ended September 30, 2019.

The Company reported revenue of \$27.4 million for the third quarter of 2019, with an operating loss of \$(1.4) million and EPS of \$(0.07). On an adjusted basis, gross margin was 55.6%, operating income measured \$3.3 million or 12.1% of sales, and adjusted diluted EPS was \$0.04. Cash flow from operations for the nine months ended September 30, 2019 was \$5.8 million compared to \$0.3 million for the comparable prior year period.

Jim Green, Chairman and CEO said, "We are executing on our strategic priorities. In spite of Q3 revenue continuing at a slower pace, adjusted operating margin improved by 90 basis points, all while taking initial actions designed to meet the targets outlined for next year's profitability and growth. As revenue headwinds annualize in the first half of next year, we expect improvements in sales effectiveness combined with product improvements to yield organic growth in line with our published targets."

Green continued, "Cellular and Molecular Technologies related products saw continued organic growth in our CRISPR related applications and in precision infusion pumps. North America and APAC sales grew, while EMEA declined on timing of large equipment sales, resulting in a modest decline in organic revenue globally for the product family."

Green continued, "Sales of Pre-Clinical Systems products sold into CROs and Pharma improved in North America, with revenue from CROs returning to historical run-rates. However, overall Pre-Clinical Systems revenue was down on declines in APAC."

Green concluded, "We will continue to take the necessary actions to strengthen our business. Although we expect continued soft revenue trends in Q4, we anticipate significant adjusted operating margin improvement in the quarter. For the full year 2019, we expect revenues to be in the range of \$116-\$118 million, slightly lower than previous expectations. We anticipate adjusted gross margin, adjusted operating margin and adjusted diluted EPS to be 56%, 12%-13%, and \$0.19, respectively, in line with our previous guidance. We believe the disciplined action plan we are executing is positioning the business to be significantly stronger next year. Recently executed actions include enhancing the senior leadership team and making cost structure improvements, including completing the consolidation of the Raleigh, North Carolina operations."

Third Quarter Reported Results

Revenue for the three months ended September 30, 2019 was \$27.4 million, a decrease of 4%, or \$1.2 million, compared to revenue of \$28.6 million for the three months ended September 30, 2018.

Operating loss for the three months ended September 30, 2019 was \$(1.4) million, a decrease of \$2.3 million, compared to operating income of \$0.9 million for the three months ended September 30, 2018. The operating loss for the period included \$2.2 million of costs associated with the CEO transition in July 2019 and initial site and product line consolidation activities aligned with profitability initiatives announced in September 2019.

Adjusted operating income was \$3.3 million for the three months ended September 30, 2019, an increase of approximately 4%, or \$0.1 million, compared to \$3.2 million for the three months ended September 30, 2018. The increase in adjusted operating income was the result of improved product mix coupled with strong cost management, more than offsetting the impact of lower revenue.

Net loss was \$(0.07) per share for the three months ended September 30, 2019, compared to a net loss of \$(0.01) per share for the same quarter in 2018.

Adjusted diluted earnings per share was \$0.04 for the three months ended September 30, 2019, same as the three months ended September 30, 2018.

Please refer to Exhibit 4 below for a reconciliation of certain non-GAAP to GAAP financial measures, including revenue, gross profit, operating expenses, operating income and loss, net income and loss, and diluted earnings per share. As to our 2019 guidance referenced in this release, please refer to Exhibit 5 below for reconciliations of the GAAP diluted earnings per share and adjusted diluted earnings per share, GAAP gross margin and adjusted gross margin and GAAP operating margin and adjusted operating margin. Please see "Use of Non-GAAP Financial Information" for additional information regarding our use of such adjusted financial information.

Balance Sheet and Cash Flow

As of September 30, 2019, cash was \$6.8 million and total debt was \$54.3 million. Cash flow from operations for the nine months ended September 30, 2019 was \$5.8 million, funding the majority of the \$6.8 million reduction in total debt since December 31, 2018.

Webcast and Conference Call Details

Harvard Bioscience will be hosting a conference call and webcast today at 4:30 pm ET. You can access the live conference call by dialing the following phone numbers: toll-free 1 (800) 708-4539 or international (847) 619-6396 and referencing the conference ID# 49098277.

The conference call will be simultaneously webcast and can be accessed through the Harvard Bioscience website. A slide presentation that will be referenced during the webcast will be posted to our Investor Relations website shortly before the webcast begins. To listen to the webcast, log on to the webcast at: <http://investor.harvardbioscience.com/> and click on the Earnings Call icon. The webcast will be available on the website through November 14, 2019.

Use of Non-GAAP Financial Information

In this press release, we have included non-GAAP financial information including adjusted revenue, adjusted gross profit, adjusted operating expenses, adjusted operating income, adjusted net income and adjusted diluted earnings per share. We believe that this non-GAAP financial information provides investors with an enhanced understanding of the underlying operations of the business. For the periods presented, these non-GAAP financial measures of revenue and income have excluded certain revenue and expenses and income primarily resulting from purchase accounting or events that we do not believe are related to the underlying operations of the business such as currency translation, amortization of intangibles related to acquisitions, costs related to acquisition, disposition and integration initiatives, impairment charges, gains or losses from divestitures, severance and restructuring expenses, and stock-based compensation expense. They also exclude the tax impact of the reconciling items. This non-GAAP financial information approximates information used by our management to internally evaluate the operating results of the Company. Tabular reconciliations of our adjusted revenue, adjusted gross profit, adjusted operating expenses, adjusted operating income, adjusted net income and adjusted earnings per diluted share for the three and nine months ended September 30, 2019 and 2018 are included as exhibits below in this press release.

The non-GAAP financial information provided in this press release should be considered in addition to, not as a substitute for, the financial information provided and presented in accordance with GAAP and may be different than other companies' non-GAAP financial information.

About Harvard Bioscience

Harvard Bioscience is a global developer, manufacturer and marketer of a broad range of solutions to advance life science. Our products are sold to thousands of researchers in over 100 countries through our global sales organization, websites, catalogs, and through distributors. We have sales and manufacturing operations in the United States, the United Kingdom, Germany, Sweden, Spain, France, Canada and China. For more information, please visit our website at www.harvardbioscience.com.

Safe Harbor Statement

This press release contains forward-looking statements within the meaning of the federal securities laws, including the Private Securities Litigation Reform Act of 1995. You can identify these statements by our use of such words as "will," "guidance," "objectives," "optimistic," "potential," "future," "expects," "plans," "estimates," "continue," "drive," "strategy," "potential," "potentially," "growth," "long-term," "projects," "projected," "intends," "believes," "goals," "sees," "seek," "develop," "possible," "new," "emerging," "opportunity," "pursue" and similar expressions that do not relate to historical matters. Forward-looking statements in this press release or that may be made during our conference call may include, but are not limited to, statements or inferences about the Company's or management's beliefs or expectations, the Company's anticipated future revenues and earnings, the strength of the Company's market position and business model, industry outlook; the Company's business strategy, the positioning of the Company for growth, the market demand and opportunity for the Company's current products, or products it is developing or intends to develop, and the Company's plans, objectives and intentions that are not historical facts. These statements involve known and unknown risks, uncertainties and other factors that may cause the Company's actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Investors should note that many factors, as more fully described under the caption "Risk Factors" in our Form 10-K, including our Form 10-K for the year ended December 31, 2018, Form 10-Q and Form 8-K filings with the Securities and Exchange Commission and as otherwise enumerated herein or therein may cause the Company's actual results to differ materially from those in the forward-looking statements. The forward-looking statements in this press release are qualified by these risk factors. The Company's results may also be affected by factors of which the Company is not currently aware. The Company may not update these forward-looking statements, even though its situation may change in the future, unless it has obligations under the federal securities laws to update and disclose material developments related to previously disclosed information.

For investor inquiries, please contact Michael Rossi, Chief Financial Officer at (508) 893-8999. Press releases may be found on the Harvard Bioscience website.

Exhibit 1

HARVARD BIOSCIENCE, INC. **Consolidated Statements of Operations** **(unaudited, in thousands, except per share data)**

	Three Months Ended		Nine Months Ended	
	September 30,		September 30,	
	2019	2018	2019	2018
Revenues	\$ 27,418	\$ 28,635	\$ 85,204	\$ 86,916
Cost of revenues	12,439	12,818	38,116	42,475
Gross profit	14,979	15,817	47,088	44,441
Sales and marketing expenses	5,294	6,021	17,370	17,976
General and administrative expenses	6,604	4,655	17,215	15,297
Research and development expenses	2,564	2,783	8,070	7,943
Amortization of intangible assets	1,422	1,468	4,289	3,983
Impairment charges	460	-	1,401	-
Total operating expenses	16,344	14,927	48,345	45,199

Operating income (loss)	<u>(1,365)</u>	<u>890</u>	<u>(1,257)</u>	<u>(758)</u>
Other expense:				
Foreign exchange	125	(26)	32	(28)
Interest expense, net	(1,348)	(1,458)	(4,129)	(3,835)
Other expense, net	<u>(86)</u>	<u>(314)</u>	<u>(246)</u>	<u>(3,399)</u>
Other expense, net	<u>(1,309)</u>	<u>(1,798)</u>	<u>(4,343)</u>	<u>(7,262)</u>
Loss from continuing operations before income taxes	(2,674)	(908)	(5,600)	(8,020)
Income tax (benefit) expense	<u>(54)</u>	<u>(652)</u>	<u>(363)</u>	<u>(416)</u>
Loss from continuing operations	<u>(2,620)</u>	<u>(256)</u>	<u>(5,237)</u>	<u>(7,604)</u>
Discontinued operations				
Income from discontinued operations	-	-	-	937
Income tax benefit	-	-	-	(883)
Income from discontinued operations, net of tax	-	-	-	<u>1,820</u>
Net loss	<u>\$ (2,620)</u>	<u>\$ (256)</u>	<u>\$ (5,237)</u>	<u>\$ (5,784)</u>
(Loss) earnings per common share:				
Basic loss per common share from continuing operations	\$ (0.07)	\$ (0.01)	\$ (0.14)	\$ (0.21)
Discontinued operations	-	-	-	0.05
Basic loss per common share	<u>\$ (0.07)</u>	<u>\$ (0.01)</u>	<u>\$ (0.14)</u>	<u>\$ (0.16)</u>
Diluted loss per common share from continuing operations	\$ (0.07)	\$ (0.01)	\$ (0.14)	\$ (0.21)
Discontinued operations	-	-	-	0.05
Diluted loss per common share	<u>\$ (0.07)</u>	<u>\$ (0.01)</u>	<u>\$ (0.14)</u>	<u>\$ (0.16)</u>
Weighted average common shares:				
Basic	<u>38,036</u>	<u>36,947</u>	<u>37,764</u>	<u>36,170</u>
Diluted	<u>38,036</u>	<u>36,947</u>	<u>37,764</u>	<u>36,170</u>

Exhibit 2

HARVARD BIOSCIENCE, INC.
Condensed Consolidated Balance Sheet Information
(unaudited, in thousands)

	<u>September 30, 2019</u>	<u>December 31, 2018</u>
Assets		
Cash and cash equivalents	\$ 6,845	\$ 8,173
Accounts receivables	17,085	21,463
Inventories	23,894	25,087
Other current assets	<u>4,465</u>	<u>3,109</u>
Total current assets	52,289	57,832
Property, plant and equipment	5,234	5,898
Goodwill and other intangibles	96,437	103,068

Other assets	8,817	1,815
Total assets	<u>\$ 162,777</u>	<u>\$ 168,613</u>
Liabilities and Stockholders' Equity		
Current portion, long-term debt	\$ 2,607	\$ 5,982
Other current liabilities	19,090	19,507
Total current liabilities	<u>21,697</u>	<u>25,489</u>
Long-term debt	51,712	54,813
Other long-term liabilities	12,265	5,587
Stockholders' equity	<u>77,103</u>	<u>82,724</u>
Total liabilities and stockholders' equity	<u>\$ 162,777</u>	<u>\$ 168,613</u>

Exhibit 3

Condensed Consolidated Cash Flow Information (unaudited, in thousands)

	Nine Months Ended September 30,	
	2019	2018
Cash flows from operating activities:		
Net loss	\$ (5,237)	\$ (5,784)
Changes in operating assets and liabilities	960	(990)
Other adjustments to operating cash flows	10,102	7,065
Net cash provided by operating activities	<u>5,825</u>	<u>291</u>
Cash flows from investing activities:		
Additions to property, plant and equipment	(778)	(891)
Acquisitions, net of cash acquired	-	(68,008)
Dispositions, net of cash sold	1,020	15,754
Other investing activities	(15)	(24)
Net cash provided by (used in) investing activities	<u>227</u>	<u>(53,169)</u>
Cash flows from financing activities:		
Proceeds from issuance of debt	4,300	70,800
Repayments of debt	(11,103)	(19,947)
Other financing activities	(392)	2,554
Net cash provided by (used in) financing activities	<u>(7,195)</u>	<u>53,407</u>
Effect of exchange rate changes on cash	(185)	399
Increase (decrease) in cash and cash equivalents	<u>(1,328)</u>	<u>928</u>
Cash and cash equivalents at the beginning of period	8,173	5,733
Cash and cash equivalents at the end of period	<u>\$ 6,845</u>	<u>\$ 6,661</u>

Exhibit 4

HARVARD BIOSCIENCE, INC. Reconciliation of GAAP to Non-GAAP Financial Measures (unaudited) (in thousands, except per share data)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
GAAP revenue	\$ 27,418	\$ 28,635	\$ 85,204	\$ 86,916
Denville revenue reported within discontinued operations	-	-	-	893
Deferred revenue valuation adjustments on acquisition	-	78	26	207
Adjusted revenue	<u>\$ 27,418</u>	<u>\$ 28,713</u>	<u>\$ 85,230</u>	<u>\$ 88,016</u>
GAAP gross profit	\$ 14,979	\$ 15,817	\$ 47,088	\$ 44,441
Stock-based compensation expense	13	19	34	45
Severance, restructuring and acquisition costs	237	22	321	42
Non-cash expense - acquisition accounting	20	165	98	4,023
Denville operations	-	-	-	360
Adjusted gross profit	<u>\$ 15,249</u>	<u>\$ 16,023</u>	<u>\$ 47,541</u>	<u>\$ 48,911</u>
GAAP gross profit % of revenue	54.6%	55.2%	55.3%	51.1%
Adjusted gross profit % of revenue	55.6%	55.8%	55.8%	55.6%
GAAP operating expenses	\$ 16,344	\$ 14,927	\$ 48,345	\$ 45,199
Stock-based compensation expense	(974)	(467)	(2,159)	(2,082)
Severance, restructuring and acquisition costs	(1,522)	(176)	(2,070)	(603)
Intangible assets amortization and impairments	(1,882)	(1,468)	(5,690)	(3,983)
Non-cash expense - acquisition accounting	(39)	-	(141)	-
Denville adjusted operating expense	-	-	-	343
Adjusted operating expenses	<u>\$ 11,927</u>	<u>\$ 12,816</u>	<u>\$ 38,285</u>	<u>\$ 38,874</u>
GAAP operating income (loss)	\$ (1,365)	\$ 890	\$ (1,257)	\$ (758)
Stock-based compensation expense	987	486	2,193	2,082
Severance, restructuring and acquisition costs	1,759	198	2,391	645
Intangible assets amortization and impairments	1,882	1,468	5,690	3,983
Non-cash expense - acquisition accounting	59	165	239	4,023
Denville adjusted operating income	-	-	-	360
Adjusted operating income	<u>\$ 3,322</u>	<u>\$ 3,207</u>	<u>\$ 9,256</u>	<u>\$ 10,335</u>
GAAP operating income (loss) % of revenue	-5.0%	3.1%	-1.5%	-0.9%
Adjusted operating income % of revenue	12.1%	11.2%	10.9%	11.7%
GAAP net loss	\$ (2,620)	\$ (256)	\$ (5,237)	\$ (5,784)
Stock-based compensation expense	987	486	2,193	2,082
Severance, restructuring and acquisition costs	1,759	400	2,391	3,692
Intangible assets amortization and impairments	1,882	1,468	5,690	3,983
Non-cash expense - acquisition accounting	59	165	239	4,023
Denville adjusted operating income (A)	-	-	-	(920)
Income taxes (B)	(341)	(947)	(1,294)	(2,481)
Adjusted net income	<u>\$ 1,726</u>	<u>\$ 1,316</u>	<u>\$ 3,982</u>	<u>\$ 4,595</u>
GAAP diluted loss per common share	\$ (0.07)	\$ (0.01)	\$ (0.14)	\$ (0.16)

Adjusted items after tax per share assuming dilution (C)	0.11	0.05	0.24	0.29
Adjusted diluted earnings per common share	<u>\$ 0.04</u>	<u>\$ 0.04</u>	<u>\$ 0.10</u>	<u>\$ 0.13</u>

(A) For the nine months ended September 30, 2018, the Non-GAAP adjustments reported in discontinued operations related to the sale of Denville included a \$1,251 gain on sale, \$47 in amortization of intangible assets, \$132 in disposition costs, and \$150 in stock-based compensation expense.

(B) Income taxes includes the tax effect of adjusting for the reconciling items using the calculated effective tax rate, including the post-2017 impact of tax reform, in the jurisdictions in which the reconciling items arise.

(C) Share count higher in Q3'19 due to adoption of best practice utilizing fully diluted shares versus basic shares only in periods with GAAP loss previously.

Exhibit 5

HARVARD BIOSCIENCE, INC. Reconciliation of GAAP Measures to Non-GAAP Guidance for 2019 (unaudited)

Projected GAAP gross profit % of revenue (A)	55.6%
Adjustments:	
Severance, restructuring, and acquisition costs	0.3%
Non-cash expense - acquisition accounting	0.1%
Projected adjusted gross profit % of revenue (A)	<u>56.0%</u>
Projected GAAP operating loss % of revenue (A)	1% - 2%
Adjustments:	
Stock-based compensation expense	3%
Severance, restructuring, and acquisition costs	2%
Intangible assets amortization and impairments	6%
Projected adjusted operating income % of revenue (A)	<u>12% - 13%</u>
Projected GAAP diluted loss per common share (A)	\$ (0.10)
Adjustments:	
Stock-based compensation expense	0.08
Severance, restructuring and acquisition costs	0.07
Intangible assets amortization and impairments	0.19
Non-cash expense - acquisition accounting	0.01
Income taxes (B)	(0.06)
Projected adjusted diluted earnings per common share (A)	<u>\$ 0.19</u>

(A) This guidance excludes, among other things, the impact of future acquisitions, acquisition costs, restructuring charges, or other one-time charges.

(B) Income taxes includes the tax effect of adjusting for the reconciling items using the calculated effective tax rate, including the post-2017 impact of tax reform, in the jurisdictions in which the reconciling items arise and any changes to valuation allowances.