Harvard Bioscience

Enabling discovery, safety and production of tomorrow's therapeutics

HBIO Investor Overview

Jim Green, Chairman, President & CEO

Sidoti Presentation

August 16, 2023

Forward-Looking Statements and Non-GAAP Financial Information

Forward-Looking Statements

This document contains forward-looking statements within the meaning of the federal securities laws, including the Private Securities Litigation Reform Act of 1995. Forward-looking statements may be identified by the use of words such as “may,” “will,” “expect,” “plan,” “anticipate,” “estimate,” “intend” and similar expressions or statements that do not relate to historical matters. Forward-looking statements include, but are not limited to, information concerning expected future financial and operational performance including revenues, gross margins, earnings, cash and debt position, growth and the introduction of new products, and the strength of the Company’s market position and business model. Forward-looking statements are not guarantees of future performance and involve known and unknown uncertainties, risks, assumptions, and contingencies, many of which are outside the Company’s control. Risks and other factors that could cause the Company’s actual results to differ materially from those described its forward-looking statements include those described in the “Risk Factors” section of the Company’s most recently filed Annual Report on Form 10-K as well as in the Company’s other filings with the Securities and Exchange Commission. Forward-looking statements are based on the Company’s expectations and assumptions as of the date of this document. Except as required by law, the Company assumes no obligation to update forward-looking statements to reflect any change in expectations, even as new information becomes available.

Management’s Use of Non-GAAP Financial Information

This document includes non-GAAP financial information, including one or more of adjusted operating income (loss), adjusted net income (loss), adjusted EBITDA, adjusted EBITDA margin, adjusted diluted earnings (loss) per share and net leverage ratio. 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 have excluded certain expenses and income resulting from items that we do not believe are representative of the underlying operations of the business. Items excluded include stock-based compensation, amortization of intangibles related to acquisitions, litigation settlement, restructuring and other costs, unrealized gain/loss on equity securities and income taxes. They also exclude the tax impact of the reconciling items. Management believes that this non-GAAP financial information is important in comparing current results with prior period results and is useful to investors and financial analysts in assessing the Company’s operating performance. Non-GAAP historical financial statement information included herein is accompanied by a reconciliation to the nearest corresponding GAAP measure which is included as exhibits below.

With respect to forward-looking measures, we provide an outlook for adjusted EBITDA margin and net leverage ratio. Many of the items that we exclude from these forward-looking measure calculations are less capable of being controlled or reliably predicted by management. These items could cause the forward-looking measures presented in our outlook statements to vary materially from our reported net income and other GAAP results.

The non-GAAP financial information provided in this presentation 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.

Who We Are…

Most trusted partner of the leading academic research institutions, contract research organizations, and pharmaceutical and bio-tech companies in the discovery, production, and safety and regulatory compliance of tomorrow's life-saving therapies.

Product Families: Cellular & Molecular Technologies (CMT) and Preclinical Systems

Foundation in Place for Sustainable, Profitable Growth

HIGH PERFORMANCE STRUCTURE IN PLACE

2019-2022 organizational transformation with core product lines, lower cost structure, optimized sales organization and a proven leadership team

FROM TRANSFORMATION TO SUSTAINABLE LONG TERM PROFITABLE GROWTH

Pivoting focus from transformation to long term targets of sustainable high single digit organic growth, with 60% gross margins & 20%+ adjusted EBITDA margin

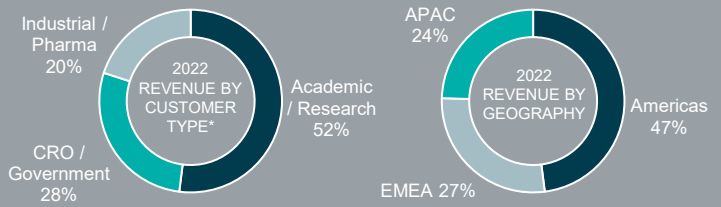
LOYAL CUSTOMER BASE IN DRUG DISCOVERY, SAFETY & REGULATORY, PRODUCTION

Trusted partner in large high-growth therapeutics markets with extensive blue-chip customer base and growing recurring revenue

COMPANY PROFILE

- Global sales footprint
- 3 Core Manufacturing facilities
- 1H 2023 Revenue: $58.7M (incl -2.8M net discontinued)
- 1H Adjusted EBITDA*: $8.7M (14.7% of rev)
- 35%+ recurring revenues
- Founded 1901
- Headquarters: Greater Boston, MA

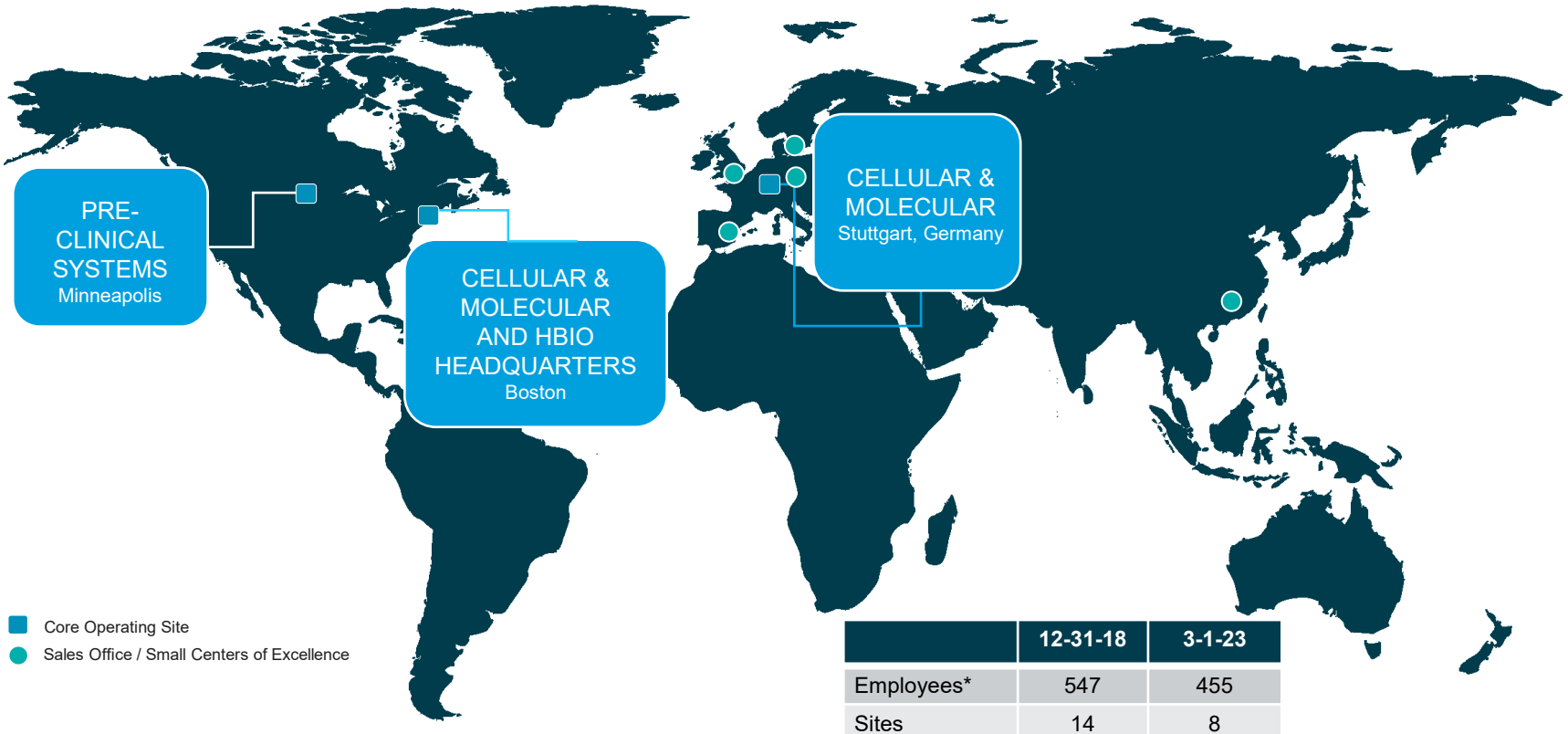
BALANCED PORTFOLIO



2022 Revenue: Revenues by customer type include estimation for small % of revenues

* *Non-GAAP measure, reconciliations to GAAP financial measures are available in the Appendix.*

Today's Global Footprint



	12-31-18	3-1-23
Employees*	547	455
Sites	14	8

Headcount is approximate

Foundation to Deliver the Vision

Experienced Leadership Team

Seasoned leaders with a proven track record of creating value through business fundamentals focused on revenue & earnings growth, operating cash flow and deleveraging

Trusted Sales/Application Experts

Welcomed and trusted partner to academic research, pharma, biotech and CRO customers for solutions to their toughest challenges

Experienced R&D Team

Track record delivering exciting new products focused on high-growth therapeutics with renewed focus on solutions, annuity consumable and service streams

Lean Operating Platform

Focused on lean operating structure dedicated to continuous improvement

Serving Well-funded, High-growth Market Segments Driven by Demographic Tailwinds

DRIVERS

Rising incidence of disease – cardiac, cancer, immunology, respiratory, diabetes, obesity, Alzheimer's, neurological, infectious

Increased funding for research and development of **advanced therapeutics**

Increased demand for research tools, devices and systems that improve efficiency & productivity and **enable therapeutics discovery and safety & regulatory thru bio-production**

END MARKET SEGMENTS

	PHARMACEUTICAL[1]	BIOTECH[2]	CONTRACT RESEARCH ORGANIZATIONS[3]	ACADEMIC RESEARCH[4]
Estimated size & projected CAGR	Global **$1.6T** 2022 7.7% 2022-2026	Global **$372B** 2021 15.5% 2022-2030	Global **$61B** 2021 10.9% 2021-2030	US Federal **$179B** 2021 9.3% 2016-2021
Estimated R&D expenditure within HBIO markets	R&D **$222B** (2021)*	R&D **$60B** (2021)*	Pre-clinical market **$5B** (2021)[5]	NIH Grants **$30.2B** (2021)*

1) https://www.researchandmarkets.com/reports/5553406/pharmaceuticals-global-market-report-2022-by
2) https://www.acumenresearchandconsulting.com/biotechnology-market
3) https://www.emergenresearch.com/request-sample/1221
4) https://ncses.nsf.gov/pubs/nsf22323
5) https://www.grandviewresearch.com/industry-analysis/preclinical-cro-market

*Internal estimates calculated based on publicly-available data.

Blue Chip Customer Base

ACADEMIC RESEARCH

- Research labs primarily government & grant funded
- Scientific research & teaching
- Early discovery of new drugs and compounds for therapies and vaccines

CONTRACT RESEARCH ORGANIZATIONS

- Pre-clinical studies to determine safety and efficacy of new pharmaceuticals
- Pharmaceutical companies are outsourcing significant pre-clinical activities to CROs

BIOTECH, PHARMACEUTICAL

- Perform early discovery and then transition from discovery through pre-clinical regulatory and on to production
- Often leverage discoveries from academics & bio-techs
- Bridge to bioproduction

MGH 1811 · MAYO CLINIC · UNIVERSITY OF OXFORD · UCSF University of California San Francisco · Duke University · University of Cambridge · Harvard University · CDC Centers for Disease Control and Prevention

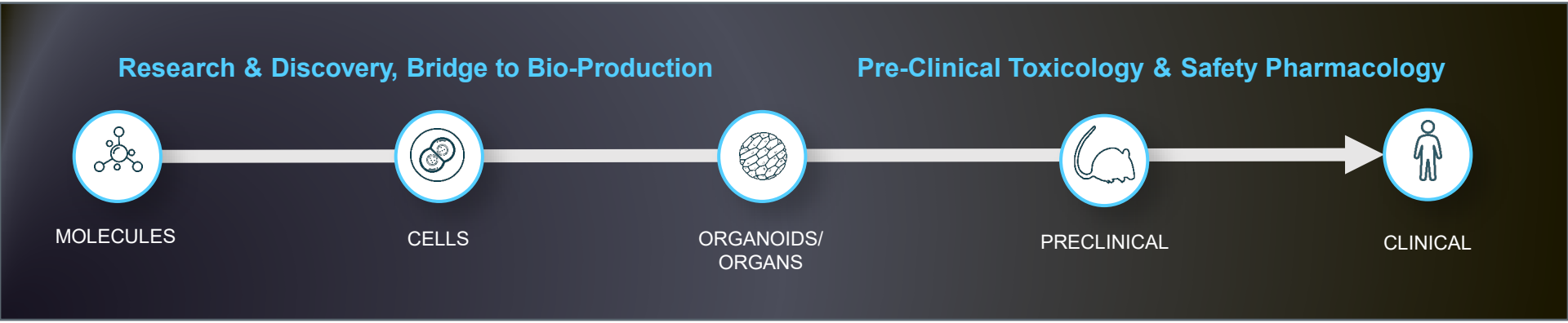
charles river · labcorp · Covance · MEDICILON 美迪西生物医药 · WuXi AppTec · BATTELLE · ALTASCIENCES

AstraZeneca · REGENERON · abbvie · Pfizer · gsk · SANOFI · BAYER · Lilly · NOVARTIS · MERCK

Subset of blue-chip recurring customers

Enabling Research, Discovery, Safety and Production Across the Continuum

Extend Research/Discovery Leadership, Adapt CMT to Industrial App CRO & BioPharma



GROWTH DRIVERS 2023 AND BEYOND

- ✓ Cellular and Molecular (CMT): Expand Discovery, Introduce Advanced Cellular Testing, Enter Bioproduction
- ✓ Pre-Clinical Systems: Extend Bundle to High-Capacity Behavioral Systems & Advanced Cellular Applications
- ✓ Expand Recurring Revenues: Consumables and Services

CMT: Expand Cell Testing to Organoids, Enter Bio-Production

TOP DISEASE TARGETS: CARDIOVASCULAR, IMMUNOLOGY / VIROLOGY, NEUROLOGY, & ONCOLOGY

PRODUCTS / APPLICATIONS

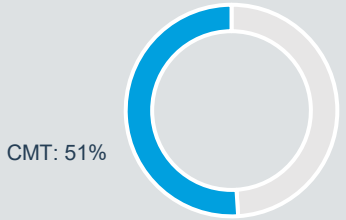
- ✓ Market leader in high efficiency electroporation systems for hard-to-transfect cell lines, CAR T- cell creation, CRISPR related transfection
- ✓ Market leader in electrofusion systems for monoclonal antibody generation and embryo and oocyte manipulation
- ✓ High density micro electrode arrays: cell-based to 1st internal measured organoids
- ✓ High performance liquid chromatography for amino acid analysis

GROWTH STRATEGY

- ✓ Adapt / expand product offerings to Industrial Customers: CROs, Pharma, Biotech
- ✓ Scale up customers already using our BTX electroporation, bridge to bio-production
- ✓ Drive MEA-Organoid in ACA/Discovery, adapt to high volume Industrial Applications
- ✓ Expand Amino Acid Analyzer consumables, penetrate pharma production QC

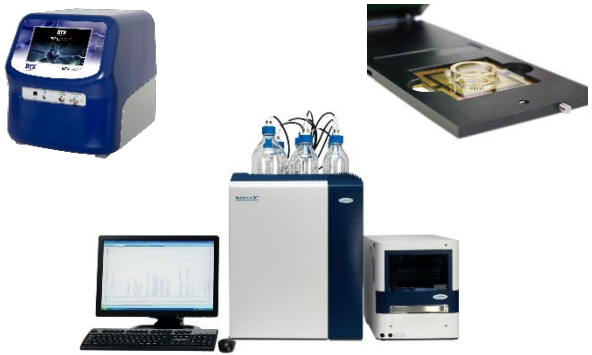
Note: See system configuration examples in Appendix II.

PORTFOLIO POSITION



* Based on FY 2022 revenue

PRODUCTS & SERVICES



Pre-Clinical Systems: Maintain GLP Telemetry Leadership, Expand Offering to Industrial Level Behavioral, Then Cellular/Organoid

SAFETY AND REGULATORY APPROVAL REQUIRED FOR ALL THERAPIES PRIOR TO HUMAN CLINICAL USE

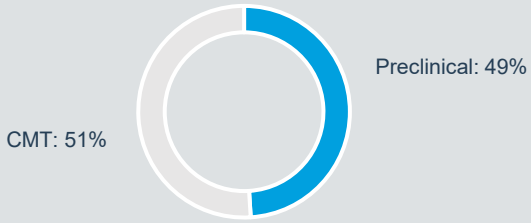
APPLICATIONS

- ✓ Leader in GLP compliant enterprise software systems for data collection, reduction and regulatory reporting, longitudinal studies, access for future AI applications
- ✓ Leader in wireless real-time telemetry and implantable devices for animal model research from mice to primates
- ✓ Realtime hi capacity behavioral systems integrated with our enterprise system
- ✓ Leader in advanced cell-based testing and organoids

GROWTH STRATEGY

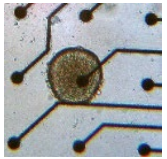
- ✓ Expand sales of Ponemah enterprise software systems w-consumables & services
- ✓ Next-gen continuous glucose monitoring – only vendor offering full telemetry
- ✓ Offer Integrated real-time behavior with telemetry via enterprise software platform
- ✓ Adapt advanced cell and latest organoid level testing to industrial CROs / BioPharma

PORTFOLIO POSITION



* Based on FY 2022 revenue

PRODUCTS & SERVICES



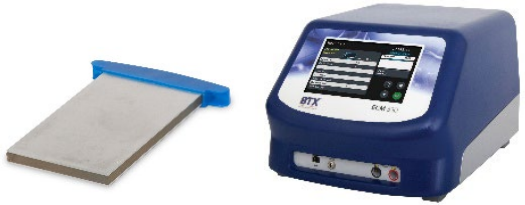
Note: See system configuration examples in Appendix II.

Expand Recurring Revenues: Consumables, Services

LEVERAGE OUR CURRENT LOYAL CUSTOMER INSTALLED BASE

- ✓ Expand software offering to integrate data models from our broad portfolio
- ✓ Expand product offering to include annual validation services
- ✓ Expand specialized field service programs targeted to pharma and biotech
- ✓ Expand manufacturing capabilities to support GMP bioprocessing

PRODUCTS & SERVICES



INCREASING FOCUS ON RECURRING ANNUITY REVENUES

Global Revenues

35%+ revenues recurring*

- ✓ Consumables (including probes)
- ✓ Enterprise Software Maintenance
- ✓ Services and repairs
- ✓ Supplies and accessories

*Based on FY 2022 revenue

Note: See system configuration examples in Appendix II.

2023-24 Strategic Priorities

Leadership in ACA Research /Discovery, Penetrate Industrial Application CRO/BioPharma

Accelerate Revenue Growth	▪ Maintain leadership in GLP telemetry and Ponemah Enterprise Data Management & Reporting ▪ Expand GLP hi-Capacity Behavior to CROs, BioPharma, Government Bio Labs ▪ Advance State of the Art Organoids for Discovery, Adapt to Industrial Apps in CROs/BioPharma ▪ Leverage Leadership in Electroporation for Discovery to Bridge our customers to bioproduction
Operating Discipline	▪ Improve operating leverage with leaner operations, reducing COGS and improved gross margins ▪ Reduce working capital through reductions of inventories while improving selected lead times ▪ Improve supply chain thru efficient consolidation to best suppliers, reduce cash-to-cash cycle ▪ Deliver significant operating improvement in gross margin, adj. EBITDA and cash flows
Strategic Capital Allocation	▪ Pay down debt and reduce net leverage ratio* to ~2x by end of 2023 ▪ Modest CAPEX increase to accelerate new product launches and manufacturing growth.

* See Appendix for definition.

Advancing Cellular: Human Organoids, Path to Safety / Tox

DRIVING FUTURE DRUG EFFICACY AND TOXICITY TESTING WITH ORGANOID-CENTRIC MULTIELECTRODE ARRAYS

MULTIELECTRODE ARRAY (MEA) CONSUMABLES

- ✓ Market leader in high-density single well MEAs used for Research / Discovery
- ✓ Record electrical activity for most cell types, neuro, cardiac, stem cells application: contractility, activation, toxicology

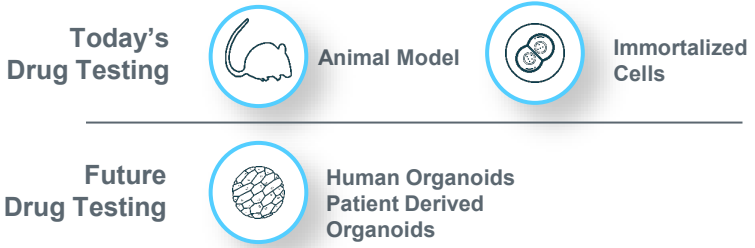
INTRODUCING THE FIRST EMBEDDED MESH ORGANOID MEA

- ✓ Designed to transition from cells to organoids (Human)
- ✓ Human organoids, Cardiac: conduction velocity, QT interval Neuro: activation, neuro-network, Epilepsy, Parkinson's, Alzheimer's, Neuro-degenerative, Diabetes: pancreatic islets
- ✓ Long organoid life enables longitudinal testing, reduced animal models

INTRODUCING 2ND GENERATION MULTIWELL MEA

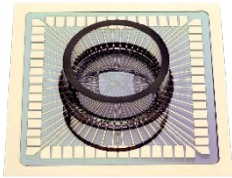
- ✓ 24-well high-capacity transparent incubator-compatible plates
- ✓ Designed for industrial adoption for mesh organoid applications: drug screening, toxicology and safety pharmacology regulatory
- ✓ Basis for adoption of Mesh Organoid MEA to CROs / BioPharma

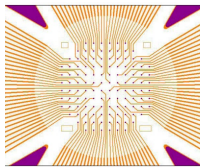
MOVING TO HUMAN & PATIENT-DERIVED ORGANOIDS

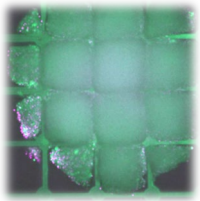


HIGH-VALUE SYSTEM & SOFTWARE

LARGE CONSUMABLE STREAM

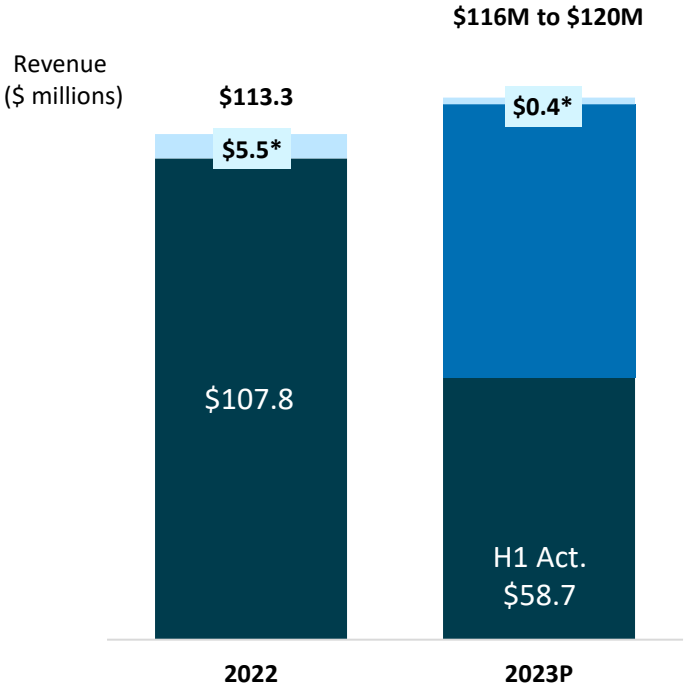






2023 Outlook: Looking Forward

New Products & Services Drive Pharma, CRO, Biotech & Research Growth



For FY2023, we expect:

- Reported revenue in the $116 to $120 million range, includes approx. 4 percentage points of net discontinued products compared to 2022
- Gross margins to remain strong in the 60% range
- Adjusted EBITDA margins expanding to 15% to 17% range
- Expanded Adjusted EBITDA combined with improving working capital drives strong cash flow that supports significant debt pay down
- Reduce net leverage ratio** to ~2x level by end of 2023

* 2022 Revenue includes $5.5 million in sales of discontinued products; 2023 Revenue includes estimated $0.4 million from sales of discontinued products; net difference is $5.1 million.

** See Appendix for definition.

Investment Thesis:

Built for Sustainable, Profitable Growth in 2023 and Beyond

HIGH-MARGIN, LOWER COST STRUCTURE IN PLACE

3-year turnaround completed in Q4 2022 with new enhanced sales and operating structure and improved product lines with sustainable growth

LARGE, LOYAL CUSTOMER BASE IN DRUG RESEARCH & DISCOVERY, SAFETY & REGULATORY AND BIO-PRODUCTION MARKETS

NEW PRODUCT INTRODUCTIONS, FOCUS ON RECURRING REVENUES TO DRIVE SUSTAINABLE PROFITABLE GROWTH

Focused on strategic portfolio opportunities to drive sustainable long term topline growth, with 60% gross margins and 20%+ adjusted EBITDA margins


HB Harvard Bioscience
Enabling discovery, safety and production of tomorrow's therapeutics
Thank You

Appendix I:

Example of Selected System Configurations

Cellular & Molecular Example: BTX Electroporation Solution

A PIONEER IN ELECTROPORATION AND ELECTROFUSION DRIVING NOVEL DISCOVERIES IN DRUG CREATION

- ✓ Cell modification, CAR T-Cell creation
- ✓ Electrofusion including monoclonal antibody generation
- ✓ Other CRISPR related applications
- ✓ Expanding initial inroads (bridge) to bio-production

Electroporation / Electrofusion Consumables

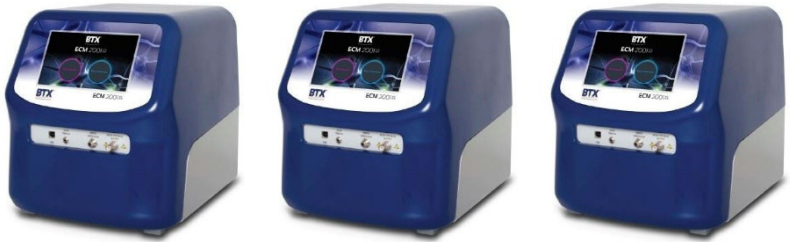
- ✓ General Use Cuvettes
- ✓ In Vitro Coaxial Chambers
- ✓ Flat Pack Higher Volume Reaction Chambers

(Consumable: Flat Pack Reaction Chamber)

Electroporation / Electrofusion Systems

Drug Discovery Configuration: Market leader for high flexibility and ease of use for transforming the most challenging cell lines. Also configurable for bio-production.

Academic & Pharma Research Configuration: Highly flexible, easy to use to support top academic research to support immunology, oncology, metabolic and neurologic therapies.

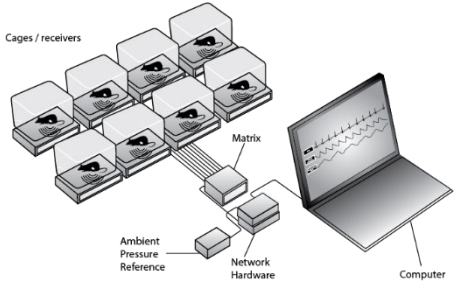


ECM2001s

Pre-Clinical Example: Continuous Telemetry Solution

Market Leader in GLP Compliant vital physiologic measurements, recording and formal reporting required by FDA/regulatory bodies to support drug migration from pre-clinical to stage 1 clinical trials in human use.

- ✓ Understand diseases, discover therapies, safety & efficacy
- ✓ Cardiovascular, Neurological, Metabolic Disease
- ✓ Efficacy, safety pharmacology and toxicology testing
- ✓ GLP regulatory compliant Enterprise platform with 21CFR11



Continuous Monitoring Wireless Solutions

- ✓ Wireless Telemetry Implants:
- ✓ Real-time measurement physiologic endpoint
- ✓ Blood Pressure
- ✓ Temperature
- ✓ EKG, EMG, EEG
- ✓ Activity
- ✓ Respiratory
- ✓ Glucose (new exclusive addition)

Ponemah Enterprise Software

CRO/Pharma Configuration: GLP Regulatory Compliant Market Leading Enterprise Solution for telemetry measurement collection/ data reduction and formal reporting for toxicology and Safety Pharmacology and other regulatory requirements prior to human clinical use.

Academic Research Configuration: Lighter version, easy to use / train their researchers and extremely flexible to support new drug development and disease modeling for top global academics, support long term longitudinal studies.

Appendix II:

GAAP to Non-GAAP Reconciliations

GAAP to Non-GAAP Reconciliation and Definitions

HARVARD BIOSCIENCE, INC.

Reconciliation of GAAP to Non-GAAP Financial Measures (unaudited)

(in thousands, except per share data)

	Six Months Ended	
	June 30, 2023	**June 30, 2022**
GAAP net (loss) income	**$ (358)**	**$ (4,445)**
Stock-based compensation	2,255	2,262
Acquired asset amortization	2,798	2,992
Restructuring & other	4	2,573
Settlement	-	311
Unrealized loss on equity securities	1,581	-
Income taxes	(2,115)	(165)
Adjusted net income	**4,165**	**3,528**
Depreciation	649	683
Interest and other expense, net	2,258	882
Adjusted income taxes (1)	1,582	1,013
Adjusted EBITDA	**$ 8,654**	**$ 6,106**
Adjusted EBITDA margin	14.7%	10.5%

(1) Adjusted income taxes includes the tax effect of adjusting for the reconciling items using the tax rates in the jurisdictions in which the reconciling items arise.

Net leverage ratio is defined under our credit agreement as our net debt (defined as our total debt plus unamortized deferred financing costs minus cash and cash equivalents) divided by our trailing twelve months adjusted EBITDA.