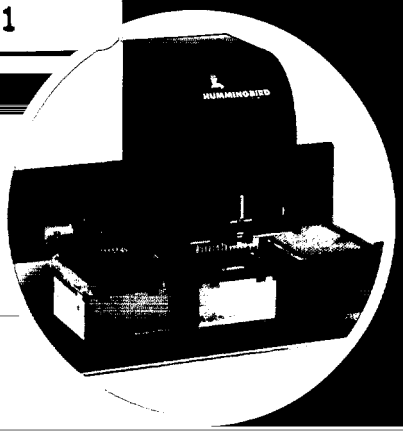
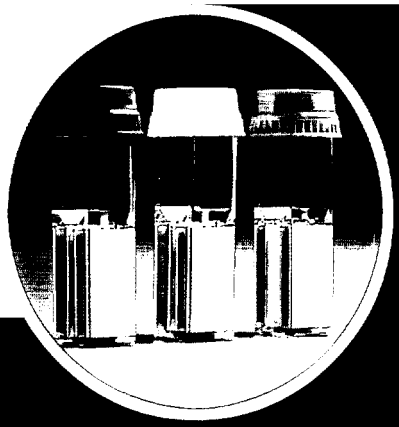
HARVARD BIOSCIENCE





Tools to Accelerate Drug Discovery

2003 Annual Report

It started in the basement...

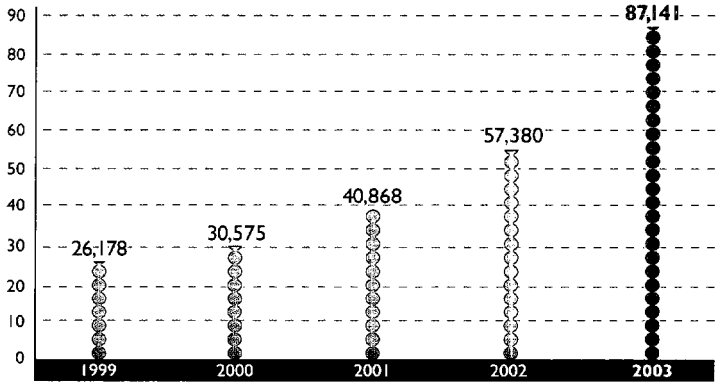
Harvard[1] Bioscience was founded in 1901. Frustrated by the poor quality of equipment then available, Dr. William T. Porter began manufacturing his own high quality physiology teaching equipment in the basement of the Harvard Medical School. Dr. Porter went on to found the American Journal of Physiology and became one of the leading physiologists of his day. His equipment gained an enviable reputation for quality and reliability and began to be known simply as the Harvard Apparatus. The name stuck. In the early 1980's the company started using the name Harvard Bioscience and in 2000 we officially changed the name of the company to Harvard Bioscience, Inc. In 1996 the current management team took over the company and expanded the product offering and improved growth and profitability. We completed our initial public offering in December 2000.

Both we and physiology have come a long way in 100 years. Today we are a leading worldwide supplier of scientific instruments used in drug discovery applications. Our products are used across a broad spectrum of both well established and cutting edge applications and are used by the world's top pharmaceutical and biotech companies.

FINANCIAL PERFORMANCE

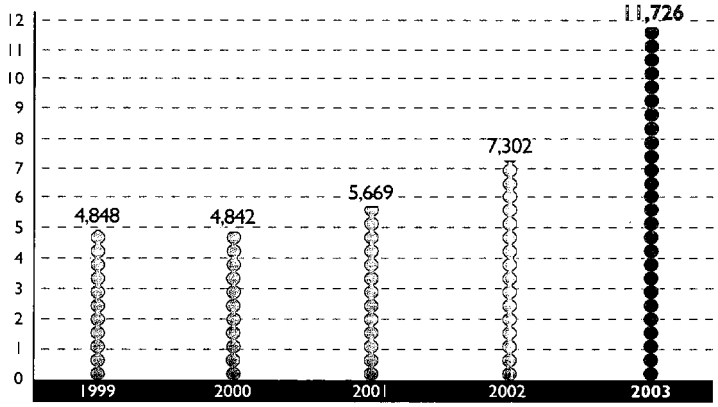
REVENUES

($US in Thousands)



PROFORMA OPERATING PROFIT[2]

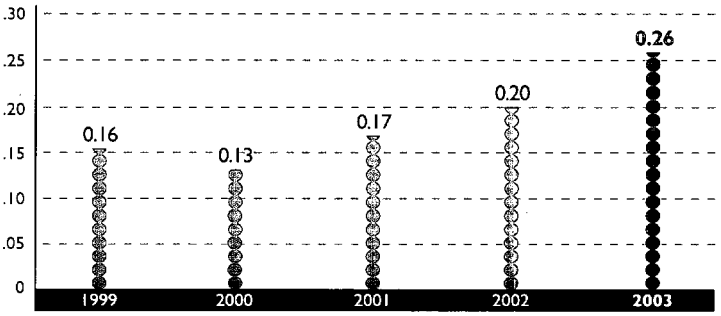
($US in Thousands)



Excludes charges for stock compensation expense, amortization of goodwill and other intangibles, acquired in-process r&d expense, severance & related costs and fair market value inventory adjustments.

PROFORMA EPS[2]

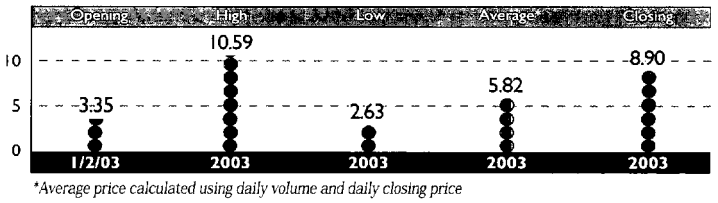
(In $US)



Excludes charges for stock compensation expense, amortization of goodwill and other intangibles, acquired in-process r&d expense, severance & related costs, common stock warrant expense, fair market value inventory adjustments, arbitration award and certain related costs and the tax effects of the aforementioned charges.

STOCK PRICE

(In $US)



**Average price calculated using daily volume and daily closing price*

(1) Harvard is a registered trademark of Harvard University. The marks Harvard Apparatus and Harvard Bioscience are being used pursuant to a license agreement between Harvard University and Harvard Bioscience, Inc.

(2) See Selected Financial Data on Page 9 of this Annual Report for comparable GAAP financial measures and a reconciliation of pro forma to GAAP presentation.

DEAR FELLOW SHAREHOLDERS

Two Thousand Three was an excellent year for Harvard Bioscience. Despite the weak market conditions, we grew revenues by 52%, pro forma operating income by 60%[1] and pro forma earnings per share by 30%[1]. This strong performance once again validates our strategy of innovation and partnerships to drive organic growth coupled with strategic acquisitions of complementary product lines to enable us to grow earnings and revenues much faster than the market. It also continues to demonstrate that this management team is capable of delivering on the strategy.

In 2003 the driver of our growth was primarily acquisitions. Since 1997, the first full year this team has managed Harvard Bioscience, we have grown revenues and pro forma earnings per share at a compounded annual growth rate of 40% and 24%[1], respectively. We have achieved this both in good times, such as the genomics boom of 1999 and 2000, and bad times, such as the pharma/biotech recession of 2002 and 2003. Our goal is to continue our growth trend in 2004. For 2004 the expected drivers of our growth will be the launch of the new Harvard Apparatus catalog in March, the introduction of our new BTX electroporation products, the launch of our new MIAS high-content screening product line, a stronger economic environment enabling an increase of organic growth in our core products, the full year impact of the acquisitions we made in 2003 and additional strategic acquisitions we expect to make in 2004.

We believe our future is bright. Strong leadership, clear vision and dedicated employees are the keys to our success in the past, present and future. On behalf of all of our 462 dedicated employees, we thank you for your continued support and look forward to an exciting and profitable future.

Sincerely,

Chane Graziano

Chane Graziano
Chief Executive Officer

David Green

David Green
President

(1) See Selected Financial Data on Page 9 of this Annual Report for GAAP operating income and earnings per share data. Due to a net loss position in prior years, a comparable GAAP earnings per share growth rate cannot be calculated.

GLOSSARY OF TERMS

COMPOUND LIBRARY

A collection of molecules that resemble common drug molecules. Most pharmaceutical companies maintain libraries of over one million compounds. The compounds in these libraries are the starting points for discovering new drugs. Most compound libraries are maintained in microtitre plates – 3" by 5" plastic plates that usually contain 96 wells. Each well is effectively the high-throughput equivalent of a test-tube.

COMBINATORIAL CHEMISTRY

A process of using robots to automate the production of very large libraries of chemically diverse compounds by sequentially combining small building block chemicals to create larger drug-like molecules. Most compound libraries contain substantial numbers of compounds manufactured by combinatorial chemistry.

GENOMICS

The study of all the genes in a particular organism, from plants to humans. A gene is a piece of DNA that produces a specific protein. Only a small portion of the DNA produces proteins.

PROTEOMICS

The study of all the proteins in a particular organism, from plants to humans. The proteins are produced according to the specific recipe coded in the DNA of the gene.

TARGET IDENTIFICATION

Identification of a molecule in the human body that is involved in a disease. Targets are almost always proteins. Target identification has been made much easier by the sequencing of the human genome (and that of other organisms) and the advent of microarrays. Microarrays are small flat pieces of glass or silicon that contain hundreds or thousands of genes arrayed as tiny spots. As a result of these innovations, target identification is no longer a bottleneck in drug discovery.

TARGET VALIDATION

Validating a target means showing that increasing or decreasing its activity has a beneficial impact on the disease. This is far harder than simply identifying a target. Validation may involve studying the genetics of large populations of humans with known diseases or the use of knock-out animals or transgenic animals. In knock-out animals (those animals that have had a gene related to the target "knocked out" or made inactive) the test is to see if the effect of the knock-out can be reversed. In transgenic animals (those animals that have an extra gene related to the target "knocked in" or made active) the test is to see if the effect of the knock-in can be reversed. Microarrays are widely used in target validation.

ASSAY DEVELOPMENT

Once a target is validated, an assay, or test, is devised that can show if a compound from a library can bind (i.e., chemically attach itself) to the target. Developing an assay is often a difficult process as the compound is typically only 1% of the size of the target protein.

HIGH-THROUGHPUT SCREENING (HTS)

The use of an assay, usually using a robot and a microtitre plate reader, that typically enables 10,000 or sometimes up to 100,000 assays to be run per day. Historically, such assays have been fast, but have provided only a single data-point on the interaction of the compound with the target. If an interaction is found, the compound is called a "hit".

HIGH-CONTENT SCREENING (HCS)

The use of an assay where multiple data-points are measured simultaneously. These assays are commonly run on cells or model organisms (see below) and often involve imaging (i.e., taking a photograph) of the cell or organism with key features of the cell or organism made visible with the use of fluorescent labels. HCS is necessarily slower than HTS but the data collected is more biologically relevant.

LEAD OPTIMIZATION

"Hits" from high-throughput or high-content screening are only a starting point in creating a safe and effective drug. Generally, hits are low in efficacy and often toxic. Experienced medicinal chemists apply successive rounds of chemical modifications to the hits to improve the efficacy and reduce the toxicity. Optimized compounds are called "leads".

ADMET — Absorption, Distribution, Metabolism, Elimination and Toxicology

Leads are subject to analysis of their ADMET properties. ADME describes what the human body does to a drug taken orally, (i.e. in pill form rather than injected directly into the bloodstream). The drug is absorbed into the bloodstream across the wall of the gut. It is distributed by the bloodstream to the different tissues in the body such as the heart and the brain. It is metabolized by the liver to make it easier for the kidneys to eliminate the drug from the blood. T stands for toxicology which is the science of determining the adverse impact of the drug on the body. ADMET testing has traditionally been performed primarily in laboratory rats and mice.

MODEL ORGANISM

Any organism (from yeast to worms to monkeys) that enables scientists to model human diseases. The most common model organisms are yeast, fruit flies, nematode worms, zebrafish, mice and rats. However, the term model organism is most frequently used to describe fruit flies, nematodes and zebrafish.

MISSION

Profitably accelerate drug discovery

Harvard Bioscience is a global developer, manufacturer and marketer of a broad range of specialized products, primarily scientific instruments, used to accelerate drug discovery research at pharmaceutical and biotechnology companies, universities and government laboratories worldwide. We sell our products to thousands of researchers in over 100 countries through our direct sales force, our 1,100 page catalog (and various other specialty catalogs), and through distributors, including Amersham Biosciences, Fisher Scientific and Cole Parmer. We have sales and manufacturing operations in the United States, the United Kingdom, Germany, Austria and Belgium with additional sales subsidiaries in France and Canada.

Our mission is to profitably accelerate drug discovery.

Our goal is to become a leading provider in the tools for drug discovery industry and to increase shareholder value.

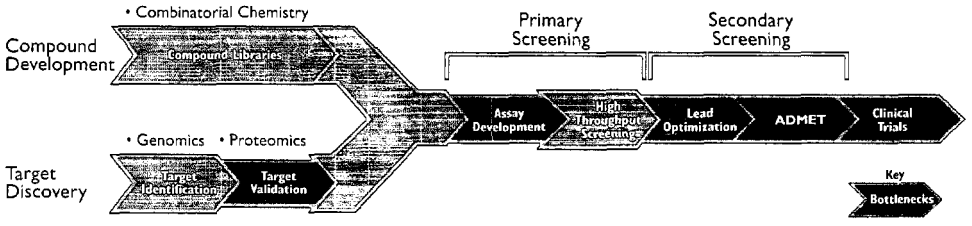
Our strategy is to have a broad range of specialized products in strong positions in niche markets focused on the bottlenecks in drug discovery research.

- We believe that having a broad product line reduces the risk of being dependent on a single technology
- We believe that having specialized products in niche markets reduces head-to-head competition with the major instrument companies
- We believe that focusing on the bottlenecks positions us for above-average revenue growth rates and above-average margins. The bottlenecks we currently focus on are target validation, assay development and ADMET screening.

In the last decade novel scientific instrumentation has enabled many breakthroughs in drug discovery:

BREAKTHROUGH	IMPACT
Gene sequencer	identified many new pharmaceutical **targets**
Robotic pipettor	provided many new drug-like **compounds**
Plate-readers	enabled **high-throughput screening**

Despite these breakthroughs, the drug discovery process remains lengthy, expensive and bottlenecked. Boston Consulting Group has reported that the average drug takes 15 years and costs $880 million to bring to market. The success of these early breakthroughs has driven the bottlenecks downstream. Today the key bottlenecks are illustrated in red below:



We have built our product portfolio and brand franchises to target the current bottlenecks in drug discovery. We believe that novel instrumentation that unlocks today's bottlenecks can substantially improve the productivity of the drug discovery process. If we succeed in doing this, we believe we can help to cut the cost and time needed to bring new medicines to market.

GROWTH STRATEGY

Since 1997, the first full year under the current management team, our revenues have grown at a compound rate of 40% per year and our pro forma earnings per share have grown at a compound rate of 24%[1] per year. For 2004 our guidance is for revenue growth of approximately 21-26% (excluding the effect of any further acquisitions) and pro forma earnings per share growth of 19-27%[2]. This growth is driven by the implementation of our three-part growth strategy of innovation, acquisition and partnership.

INNOVATION

We create new products. We often do this in conjunction with pharmaceutical companies or academic researchers. Products we introduced in 2003 included a multi-well version of our BTX electroporation system and our MIAS high-content screening system (see New Technology section on page 5). In addition we developed new applications on our COPAS platform including the automation of mouse embryonic stem cell assays and the purification of human pancreatic islet cells for the treatment of Type 1 diabetes.

ACQUISITION

We buy businesses that we believe either strengthen our base business or have the potential for major breakthroughs in drug discovery research. In 2003 we acquired:

- BTX, a division of Genetronics Biomedical Corporation, for its line of electroporation products. These products complement our existing business in cell biology sold under the Harvard Apparatus and Warner Instruments brand names. BTX has been consolidated into our Holliston, Massachusetts facility.
- GeneMachines for its line of microarray sample preparation and automation products. One of these products, the RevPrep Orbit - a centrifuge that can spin 96 samples at once - could considerably improve productivity for drug discovery researchers. GeneMachines operates as a manufacturing site within our Genomic Solutions subsidiary.
- BioRobotics, Ltd., a subsidiary of Apogent Technologies, Inc., for its line of life science instrumentation for DNA microarray manufacturing and colony picking. These products complement our existing DNA microarray systems and instrumentation sold through our Genomic Solutions subsidiary. BioRobotics has been consolidated into our Genomic Solutions Huntingdon, England facility.
- The one-dimensional gel electrophoresis business of Amersham Biosciences, including the Hoefer brand name. These products complement our existing lines of electrophoresis products. Hoefer operates as a wholly-owned subsidiary located in San Francisco, California.

During the first quarter of 2004, we acquired:

- KD Scientific for its line of fluidics equipment. This acquisition strengthens our core fluidics products with the addition of the KD Scientific brand name and complementary technology. KD Scientific has been consolidated into our Holliston, Massachusetts facility.

PARTNERSHIP

We leverage our technologies by collaborating with companies that have capabilities we do not. In 2003 we partnered with:

- A major pharmaceutical company and a smaller biotech company for the development of automated imaging systems, and academic and biotech customers for the development of the BTX multi-well electroporation system
- Amersham Biosciences - one of the largest life-science companies - for the continued distribution of many of our products for DNA, RNA and protein analysis
- PerkinElmer and Fisher Scientific International - both major life-science companies - for the distribution of proteomics and cell biology products

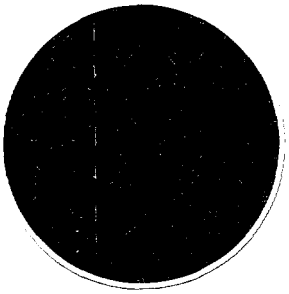
(1) See Selected Financial Data on Page 9 of this Annual Report for GAAP earnings per share data. Due to a net loss position in prior years, a comparable GAAP earnings per share growth rate cannot be calculated.

(2) A comparable GAAP earnings per share growth rate is not accessible as we made two acquisitions in the fourth quarter of 2003 and an acquisition in the first quarter of 2004, for which the purchase price allocation has not yet been finalized. Therefore, we are currently unable to predict the impact of the associated acquisition related expenses on estimated 2004 GAAP earnings per share. Such acquisition related expenses may include, but are not limited to, in-process research and development expense, restructuring and severance related expense and fair value adjustments which may significantly impact GAAP earnings per share. Additionally, we are currently unable to predict, any additional expense related to amortization of intangibles that may result from these acqusitions. Forward looking statements regarding pro forma earnings per share currently exclude, from pro forma net income (loss), stock compensation expense and amortization of intangibles. Other items that have been excluded from pro forma net income (loss) in prior periods include in-process research and development expense, restructuring and severance related expense and fair value adjustments. As these items are largely acquisition related, they may occur in 2004, however, we are unable to predict these expenses at this time.

NEW TECHNOLOGY

A potential breakthrough in drug discovery

Automated microscopy for high-content screening



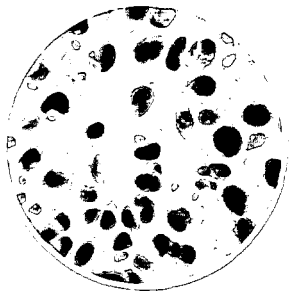
Sciatic nerve cells imaged by MIAS for studying central nervous system disorders

In the fourth quarter of 2003 we delivered our first Microscope Image Automation System, or MIAS, to the major pharmaceutical company that co-funded its development.

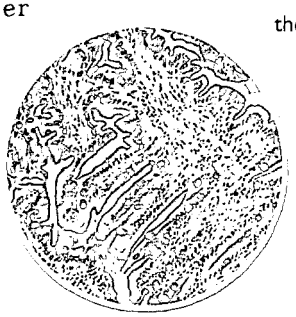
MIAS takes high resolution images (photographs) of cells, tissues and model organisms with industrial strength, 24/7 walk away automation. By combining a military grade night- vision camera and sophisticated image processing algorithms with a world leading Zeiss microscope, MIAS can gather images that are too faint to be seen by the human eye. This capability can be used to either lower the cost of existing drug discovery assays or to develop assays that were not previously possible. Examples of the way MIAS is being used include:

- A major pharmaceutical company used MIAS to search for a treatment for rheumatoid arthritis. MIAS's night vision capability enabled the pharmaceutical company to greatly reduce the amount of very expensive fluorescently labeled antibodies it needed to use. This saved $200,000 in a single screening campaign.
- A small biotech company has used MIAS's image processing capability to analyze time lapse video images of nematode worms to automate the task of finding worms that carry pharmaceutically relevant gene mutations.
- Another customer is using MIAS's high sensitivity to avoid the use of fluorescent labels entirely when performing quality control on the automated production of cells cultured specifically for high-content screening.
- A consortium of European researchers has chosen MIAS as the automation platform to be used in creating a library of nematode worms where each nematode can have a single gene knocked out at will.

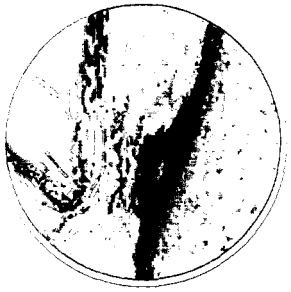
We believe that our MIAS platform is very well positioned to take advantage of the trend towards high-content screening.



Proliferating cells imaged by MIAS for studying cancer



Goblet cells imaged by MIAS for studying gastro-intestinal disease



Skin section imaged by MIAS for studying psoriasis

BUSINESS MODEL

Growth, Profitability and Leadership

STRONG BASE BUSINESS

We have built our business with a balanced combination of profitability and growth. We have a strong base business of specialized products used in a wide range of drug discovery applications. These products are typically well established in fairly mature markets with above average, but not spectacular, growth rates. We have many well established brand names that, although not widely known outside their niches, are often leaders within them. These names include: Harvard Apparatus, Biochrom®, Genomic Solutions, GeneMachines, Investigator, Union Biometrica, Warner Instruments, Clark Electromedical Instruments, Hugo Sachs Elektronik, BTX, BioRobotics, Hoefer and KD Scientific. These well-established brands are sold through well-established distribution channels. Most of our products for ADMET screening are sold through the Harvard Apparatus catalog - the first edition of which was in 1901. Most of our products for DNA, RNA and protein analysis are sold through our partnership with Amersham Biosciences - one of the world's largest life science companies. Most of our Genomic Solutions and Union Biometrica products are sold through our global field sales force.

BREAKTHROUGH NEW TECHNOLOGIES

Our aim is to add to this strong base business breakthrough new technologies that have the potential to change the nature of drug discovery. We have invested in several such new technologies including: automation equipment for genomics and proteomics, our COPAS technology for high-throughput/high-content screening of model organisms and microscope image automation technology. If we are successful with these new technologies it could increase our future rate of organic growth considerably.

STRONG FINANCIAL PERFORMANCE

PRO FORMA[1] CONDENSED CONSOLIDATED STATEMENT OF OPERATIONS

	For the Twelve Months Ended December 31, 2003	2002
	(in thousands, except per share data, unaudited)	
Revenues	$ 87,141	$ 57,380
Costs and Expenses:		
Cost of Product Revenues	42,891	28,310
General & Administrative	10,883	9,187
Sales & Marketing	15,378	8,435
Research & Development	6,263	4,146
Total Costs and Expenses	75,415	50,079
Pro forma[1] Operating Profit	11,726	7,302
Other Income, Net	362	707
Pro forma[1] Net Income before Taxes	12,088	8,009
Income Taxes	(4,251)	(2,588)
Pro forma[1] Net Income	$ 7,837	$ 5,421
Diluted Proforma[1] Income per Share	$ 0.26	$ 0.20
Diluted Weighted Average Common Shares	30,712	27,597

RECONCILIATION OF PRO FORMA NET INCOME TO U.S. GAAP NET INCOME

	For the Twelve Months Ended December 31, 2003	2002
	(in thousands, unaudited)	
Pro forma net income	$ 7,837	$ 5,421
Stock compensation expense	519	1,269
Amortization of intangibles	2,702	1,543
In-process research and development expense	—	1,551
Restructuring and severance related expense	—	784
Fair value adjustments to costs of product sales	840	514
Arbitration award and certain related costs	790	—
Income tax benefit	(1,274)	(977)
GAAP net income	$ 4,260	$ 737

STATEMENT OF CASH FLOWS SUMMARY

	For the Twelve Months Ended December 31, 2003	2002
	(in thousands)	
Cash Provided from Operating Activities	$ 2,028	$ 799
Cash Used in Investing Activities	(22,397)	(12,367)
Cash Provided (used) from Financing Activities	13,054	(3,144)
Effect of Exchange Rate Changes on Cash	225	640
Decrease in Cash and Cash Equivalents	$ (7,090)	$ (14,072)
Ending Cash and Cash Equivalents	$ 8,223	$ 15,313

(1) See Selected Financial Data on Page 9 of this Annual Report for comparable GAAP financial measures.

CORPORATE INFO

BOARD OF DIRECTORS

Chane Graziano
Chairman &
Chief Executive Officer

David Green
President

Neal J. Harte
President
TACS Group

Richard C. Klaffky, Jr.
President
FINEC Corp.

John F. Kennedy
President
Nova Analytics, Inc.

Earl R. Lewis
Chairman, CEO & President
FLIR Systems, Inc

Robert Dishman, PhD
CEO & President
Molecular Recognition, Inc.

MANAGEMENT

Chane Graziano
Chairman &
Chief Executive Officer

David Green
President

Susan Luscinski
Chief Financial Officer

Paul Bailey
Vice President of Finance
& Administration

Mark Norige
Chief Operating Officer
Harvard Apparatus

David Strack, PhD
President
Genomic Solutions, Inc.
Union Biometrica, Inc.

David Parr
Managing Director
Biochrom, Ltd.

CORPORATE ADDRESS

HARVARD BIOSCIENCE, INC.
84 October Hill Road
Holliston, Massachusetts 01746
www.harvardbioscience.com

INDEPENDENT CERTIFIED PUBLIC ACCOUNTANTS

KPMG LLP
99 High Street
Boston, Massachusetts 02110

GENERAL COUNSEL

GOODWIN PROCTER LLP
Exchange Place
Boston, Massachusetts 02109

TRANSFER AGENT AND REGISTRAR

REGISTRAR AND
TRANSFER COMPANY
10 Commerce Drive
Cranford, New Jersey 07016

ANNUAL MEETING OF STOCKHOLDERS

The Annual Stockholders' Meeting of Harvard Bioscience, Inc. will be held Thursday, May 27, 2004 at 11:00 a.m. at our general counsel's offices, Exchange Place, Boston, Massachusetts. Notice of the meeting and proxy statements will be mailed to stockholders in advance of the meeting.

STOCK PROFILE

Harvard Bioscience, Inc. shares are traded on NASDAQ under the symbol "HBIO".

As of March 10, 2004 the number of record holders of HBIO common stock was approximately 210. We believe that the number of beneficial owners at that date was substantially higher.

STOCK PRICE RANGE

Fiscal Year Ended
December 31, 2003

Quarter	High	Low
First	$ 4.03	$ 2.63
Second	$ 4.88	$ 2.96
Third	$ 8.50	$ 3.81
Fourth	$10.59	$ 6.57
FY 2003 average*		$ 5.82
FY 2003 closing		$ 8.90

**Calculated using daily volume at daily closing price*

DIVIDENDS

Harvard Bioscience, Inc. has never declared or paid dividends on its common stock and currently has no plans to do so in the foreseeable future.

SEC FILINGS

A copy of the Company's Form 10-K filed with the U.S. Securities and Exchange Commission may be obtained without charge by contacting Susan Luscinski, CFO, in writing to the corporate address above.

SELECTED FINANCIAL DATA

	Years Ended December 31,				
	2003	2002	2001	2000	1999
Statement of Operations Data:	*(in thousands, except share and per share data)*				
Revenues	$ 87,141	$ 57,380	$ 40,868	$ 30,575	$ 26,178
Costs and Expenses:					
Cost of product revenues	43,731	28,824	20,180	15,833	13,547
General and administrative expense	10,883	9,187	7,001	5,181	4,147
Restructuring and severance related expense	—	784	460	—	—
Sales and marketing expense	15,378	8,435	4,840	3,186	2,448
Research and development expense	6,263	4,146	3,179	1,533	1,188
Stock compensation expense	519	1,269	2,679	14,676	3,284
In-process research and development expense	—	1,551	5,447	—	—
Amortization of goodwill and other intangibles	2,702	1,543	1,744	604	368
Operating income (loss)	7,665	1,641	(4,661)	(10,438)	1,196
Other income (expense):					
Foreign currency gain (loss)	484	402	(100)	(324)	(48)
Common stock warrant interest expense	—	—	—	(36,885)	(29,694)
Interest income (expense), net	(151)	341	1,352	(756)	(657)
Amortization of deferred financing costs	(9)	—	—	(153)	(63)
Other	(752)	(36)	(10)	45	(17)
Other income (expense), net	(428)	707	1,242	(38,073)	(30,479)
Income (loss) before income taxes	7,237	2,348	(3,418)	(48,511)	(29,283)
Income taxes	(2,977)	(1,611)	1,790	1,359	137
Net income (loss)	4,260	737	(5,208)	(49,870)	(29,420)
Preferred stock dividends	—	—	—	(136)	(157)
Net income (loss) available to common stockholders	$ 4,260	$ 737	$ (5,208)	$ (50,006)	$ (29,577)
Income (loss) per share:					
Basic	$ 0.14	$ 0.03	$ (0.20)	$ (6.25)	$ (5.28)
Diluted	$ 0.14	$ 0.03	$ (0.20)	$ (6.25)	$ (5.28)
Weighted average common shares:					
Basic	29,923,709	27,090,054	25,784,852	8,005,386	5,598,626
Diluted	30,711,782	27,597,564	25,784,852	8,005,386	5,598,626
Reconciliation from GAAP to Pro forma:			*(in thousands, unaudited)*		
Operating income (loss) - GAAP	$ 7,665	$ 1,641	$ (4,661)	$ (10,438)	$ 1,196
Restructuring and severance related expense	—	784	460	—	—
Stock compensation expense	519	1,269	2,679	14,676	3,284
In-process research and development expense	—	1,551	5,447	—	—
Amortization of goodwill and intangibles	2,702	1,543	1,744	604	368
Fair value adjustment to costs of product sales	840	514	—	—	—
Operating income - Pro forma	11,726	7,302	5,669	4,842	4,848
Net income (loss) - GAAP	4,260	737	(5,208)	(49,870)	(29,420)
Net adjustments to operating income (loss)	4,061	5,661	10,330	15,280	3,652
Common stock warrant interest expense	—	—	—	36,885	29,694
Arbitration award and certain related costs	790	—	—	—	—
Income tax	(1,274)	(977)	(730)	98	(1,237)
Net income - Pro forma	$ 7,837	$ 5,421	$ 4,392	$ 2,393	$ 2,689
Weighted average common shares - Pro forma Diluted	30,712	27,597	26,382	18,459[1]	17,082[1]

(1) Assumes conversion of all outstanding shares of convertible preferred stock and the exercise of all outstanding common stock warrants on January 1.

	As of December 31,				
	2003	2002	2001	2000	1999
Balance Sheet Data:			*(in thousands)*		
Cash and cash equivalents	$ 8,223	$ 15,313	$ 29,385	$ 35,817	$ 2,396
Working capital	40,182	31,816	32,597	40,552	3,783
Total assets	128,429	107,584	82,362	58,809	20,610
Long-term debt, net of current portion	12,787	400	637	1	5,073
Preferred stock	—	—	—	—	2,500
Common stock warrants	—	—	—	—	31,194
Stockholders' equity (deficit)	98,879	88,381	66,812	52,335	(25,711)

QUARTERLY FINANCIAL INFORMATION (UNAUDITED)

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Fiscal Year
Statement of Operations Data:		*(in thousands, except per share data)*			
2003:					
Revenues	$ 19,473	$ 22,353	$ 21,108	$ 24,207	$ 87,141
Operating expenses	18,252	20,234	19,416	21,574	79,476
Net income available to common stockholders	776	743	986	1,755	4,260
Income per share:					
Basic	$ 0.03	$ 0.02	$ 0.03	$ 0.06	$ 0.14
Diluted	$ 0.03	$ 0.02	$ 0.03	$ 0.06	$ 0.14
2002:					
Revenues	$ 11,963	$ 13,729	$ 12,797	$ 18,891	$ 57,380
Operating expenses	10,781	12,244	12,549	20,165	55,739
Net income (loss) available to common stockholders	773	1,018	(82)	(972)	737
Income (loss) per share:					
Basic	$ 0.03	$ 0.04	$ 0.00	$ (0.03)	$ 0.03
Diluted	$ 0.03	$ 0.04	$ 0.00	$ (0.03)	$ 0.03

Please see Note 3 to our Consolidated Financial Statements for more information on businesses acquired, which may affect the comparability of the amounts above.

Please see Note 4 to our Consolidated Financial Statements for information related to the effects of adopting Statement of Financial Accounting Standards ("SFAS") No. 142, Goodwill and Other Intangible Assets.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Forward-Looking Statements

The following section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" contains statements that are not statements of historical fact and are forward-looking statements within the meaning of Federal securities laws. 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. These statements reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties. We discuss many of these risks in detail under the heading "Important Factors That May Affect Future Operating Results" beginning on page 22. You should carefully review all of these factors, as well as the comprehensive discussion of forward-looking statements on the inside back cover of this annual report, in evaluating our financial condition and results of operations.

Overview

Since 1996, when the current management team began managing Harvard Bioscience, revenues have grown at an annual compounded growth rate of approximately 40%. This has been achieved by implementing our three-part growth strategy of new product development, strategic partnerships and acquisitions. This strategy has provided us with strong organic growth in good economic times and in tough economic times, such as we experienced in 2002 and 2003, it has provided us with strong acquisition growth. During 2003, although we continued with new product development and strategic partnerships which did contribute to revenues, our revenue growth was primarily due to acquisitions we made in 2002 and 2003. Our recent acquisition activity history is listed in Note 3 to our Consolidated Financial Statements.

With the acquisitions of Union Biometrica in May 2001, Genomic Solutions in October 2002, GeneMachines in March 2003 and BioRobotics in September 2003, an increasing portion of our revenues is the result of sales of relatively high-priced products, considered to be capital equipment. The capital equipment market is very seasonal compared to our traditional catalog business and as such, we believe we have experienced, and we believe we will continue to experience, substantial fluctuations in our quarterly revenues. Delays in purchase orders, receipt, manufacture or shipment of products or receivables collection of these relatively high-priced products could lead to substantial variability in our revenues, operating results and working capital requirements from quarter-to-quarter. Approximately, 40% of our revenues in 2003 was derived from capital equipment products.

Also, we may misinterpret trends of our capital equipment product lines due to the cyclical nature of the capital equipment purchasing market. The cyclical buying pattern of the capital equipment purchasing market could mask or exaggerate the economic trends underlying the market for our capital equipment product lines. Specifically, a decline in any quarter that is typically a quarter that we would expect to contribute less than one-quarter of projected revenue for the year, could be misinterpreted if the decline was due instead to a negative trend in the market and/or in the demand for our products. Conversely, an increase in any quarter that is typically a quarter which we would expect to contribute less than one-quarter of projected revenue for the year, could be misinterpreted as a favorable trend in the market and/or in the demand for our products. This could have a material adverse effect on our operations.

In general, we believe that we have seen, particularly in the last half of 2003, a strengthening in the economy. However, we do believe that the economy is still uncertain. While we are optimistic that we can return to solid organic growth in addition to growth from acquisitions, we are unable to definitively label what we saw as strength in the second half of 2003 as a trend that is likely to continue, or even as a trend. We will continue to monitor both the market, as well as our internal resources, as we pursue our goal of maintaining and/or improving the operating metrics of the Company.

Generally, management evaluates the financial performance of its operations before the effects of stock compensation expense and before the effects of purchase accounting related to our acquisitions. Our goal is to develop and sell products that profitably accelerate drug discovery and as such we monitor the operating metrics of the Company and when appropriate effect organizational changes to leverage infrastructure and distribution channels. In the table on the next page, we provide an overview of the operating metrics commonly reviewed by our management.

During 2003 we entered into a $20 million credit facility with Brown Brothers Harriman & Co, under which we have drawn down approximately $19.1 million as of March 3, 2004 when we funded the acquisition of KD Scientific. We believe that the financial covenants contained in the credit facility involving income, debt coverage and cash flow, as well as minimum working capital requirements are covenants that we will be in compliance with under current operating plans. The credit facility also contains limitations on our ability to incur additional indebtedness. Additionally, the facility requires creditor approval for acquisitions funded with cash in excess of $6 million and for those which may be funded with equity in excess of $10 million. W do not believe that these requirements will be a significant constraint in operating the Company and continuing with the acquisition portion of our growth strategy.

Historically, we have funded acquisitions with debt, capital raised by issuing equity and cash flow from operations. In order to continue the acquisition portion of our three part growth strategy we will need to raise more capital, either by incurring additional debt, issuing equity or a combination. Currently, we may be unable to access the public equity markets due to an outstanding amendment to a Current Report on Form 8-K in connection with a previous acquisition. In addition, we may not be eligible to use Form S-3 to effect a registration of our equity. We are in the process of seeking to complete this potentially outstanding filing and anticipate that we will become current with our required filings under Form 8K and will become eligible to register equity in the foreseeable future. However, until this matter is resolved, our ability to raise capital may be limited to private equity transactions and/or additional borrowing and may result in entering into an agreement on less than favorable terms.

Operating Metrics for the years ended December 31, *(in thousands)*

	2003	% of Revenue	2002	% of Revenue	2001	% of Revenue
Total Revenues	$ 87,141		$ 57,380		$ 40,868	
Cost of Product Revenues	43,731	50.2%	28,824	50.2%	20,180	49.4%
Sales and Marketing Expense	15,378	17.6%	8,435	14.7%	4,840	11.8%
Research and Development Expense	6,263	7.2%	4,146	7.2%	3,179	7.8%
General & Administrative Expense	10,882	12.5%	9,187	16.0%	7,001	17.1%

Revenues. We generate revenues by selling instruments, devices and consumables through our catalog, our direct sales force, our distributors and our website.

For products primarily priced under $10,000, every one to three years, we intend to distribute a new, comprehensive catalog initially in a series of bulk mailings, first to our existing customers, followed by mailings to targeted markets of potential customers. Over the life of the catalog, distribution will also be made periodically to potential and existing customers through direct mail and trade shows and in response to e-mail and telephone inquiries. From time to time, we also intend to distribute catalog supplements that promote selected areas of our catalog or new products to targeted subsets of our customer base. Future distributions of our comprehensive catalog and our catalog supplements will be determined primarily by the incidence of new product introductions, which cannot be predicted. Our end user customers are research scientists at pharmaceutical and biotechnology companies, universities and government laboratories. Revenue from catalog sales in any period is a function of time elapsed since the last mailing of the catalog, the number of catalogs mailed and the number of new items included in the catalog. We launched our latest comprehensive catalog in March 2004, with approximately 1,100 pages and approximately 70,000 copies printed. Revenues direct to end users, derived through our catalog and the electronic version of our catalog on our website, represented approximately 25% of our revenues for the year ended December 31, 2003. We do not currently have the capability to accept purchase orders through our website.

Products typically in the $5,000 -$15,000 price range are primarily sold under brand names of distributors including Amersham Biosciences. They are mainly scientific instruments like spectrophotometers and plate readers that analyze light to detect and quantify a very wide range of molecular and cellular processes or apparatus like gel electrophoresis units. We also use distributors for both our catalog products and our higher priced products, for sales in locations where we do not have subsidiaries or where we have distributors in place for acquired businesses. For the year ended December 31, 2003 approximately 45% of our revenues were derived from sales to distributors.

For our higher priced products, generally those priced over $25,000, we have direct sales organizations which consist of sales and marketing personnel, customer support, technical support and field application service support. These organizations have been structured to attend to the specific needs associated with the promotion and support of higher priced capital equipment customers. The combined expertise of both our sales and technical support staff provide a balanced skill set when promoting the relevant products at seminars, on-site demonstrations and exhibitions which are done routinely. The expertise of our field service personnel provides complete post-sale customer support for both instrument specific service, repair and maintenance, and applications support. For the year ended December 31, 2003, approximately 30% of our revenues were derived from sales by our direct sales force.

For the year ended December 31, 2003, approximately 91% of our revenues were derived from products we manufacture or from collaboration and research grant projects. The remaining 9% of our revenues were derived from complementary products we distribute in order to provide the researcher with a single source for all equipment needed to conduct a particular experiment. For the year ended December 31, 2003, approximately 50% of our revenues were derived from sales made by our non-U.S. operations. A large portion of our international sales during this period consisted of sales to Amersham Biosciences, the distributor for our spectrophotometers, plate readers and 1-D gel electrophoresis products. Amersham Biosciences distributes these products to customers around the world, including to many customers in the United States, from its distribution center in Upsalla, Sweden. As a result, we believe our international sales would have been a lower percentage of our revenues for the year ended December 31, 2003 if we had shipped our products directly to our end users.

Cost of product revenues. Cost of product revenues includes material, labor and manufacturing overhead costs, obsolescence charges, packaging costs, warranty costs, shipping costs and royalties. Our costs of product revenues may vary over time based on the mix of products sold. We sell products that we manufacture and products that we purchase from third parties. The products that we purchase from third parties have higher cost of goods sold because the profit is effectively shared with the original manufacturer. We anticipate that our manufactured products will continue to have a lower cost of goods sold as a percentage of revenues as compared with the cost of non-manufactured products for the foreseeable future. Additionally our cost of product revenues as a percent of product revenues will vary based on mix of direct end user sales and distributor sales.

General and administrative expense. General and administrative expense consists primarily of salaries and other related costs for personnel in executive, finance, accounting, information technology and human relations functions. Other costs include facility costs, professional fees for legal and accounting services, investor relations, insurances and provision for doubtful accounts.

Sales and marketing expense. Sales and marketing expense consists primarily of salaries and related expenses for personnel in sales, marketing and customer support functions. We also incur costs for travel, trade shows, demonstration equipment, public relations and marketing materials, consisting primarily of the printing and distribution of our approximately 1,100 page catalog, supplements and various other specialty catalogs, and the maintenance of our websites. We may from time to time expand our marketing efforts by employing additional technical marketing specialists in an effort to increase sales of selected categories of products in our catalog. We may also from time to time expand our direct sales organizations in an effort to increase and/or support sales of our higher priced capital equipment instruments or to concentrate on key accounts or promote certain product lines.

Research and development expense. Research and development expense consists primarily of salaries and related expenses for personnel and capital resources used to develop and enhance our products and to support collaboration agreements. Other research and development expense includes fees paid to consultants and outside service providers, and material costs for prototype and test units. We expense research and development costs as incurred. We believe that significant investment in product development is a competitive necessity and plan to continue to make these investments in order to realize the potential of new technologies that we develop, license or acquire.

Stock compensation expense. Stock compensation expense resulting from stock option grants to our employees represents the difference between the fair market value and the exercise price of the stock options on the grant date for those options considered fixed awards. Stock compensation is amortized as a charge to operations over the vesting period of the options.

Critical Accounting Policies

We believe that our critical accounting policies are as follows:

- valuation of identifiable intangible assets and in-process research and development in business combinations;
- valuation of long-lived and intangible assets and goodwill;
- accounting for income taxes;
- revenue recognition; and
- inventory.

Valuation of identifiable intangible assets in business combinations. Identifiable intangible assets consist primarily of trademarks and acquired technology. Such intangible assets arise from the allocation of the purchase price of businesses acquired to identifiable intangible assets based on their respective fair market values. Amounts assigned to such identifiable intangible assets are primarily based on independent appraisals using established valuation techniques and management estimates. The value assigned to trademarks was determined by estimating the royalty income that would be negotiated at an arm's-length transaction if the asset were licensed from a third party. A discount factor, ranging from 25% to 31.5%, which represents both the business and financial risks of such investments, was used to determine the present value of the future streams of income attributable to trademarks. The specific approach used to value trademarks was the Relief from Royalty ("RFR") method. The RFR method assumes that an intangible asset is valuable because the owner of the asset avoids the cost of licensing that asset. The royalty savings are then calculated by multiplying a royalty rate times a determined royalty base, i.e., the applicable level of future revenues. In determining an appropriate royalty rate, a sample of guideline, arm's length royalty and licensing agreements are analyzed. In determining the royalty base, forecasts are used based on management's judgments of expected conditions and expected courses of actions. The value assigned to acquired technology was determined by using a discounted cash flow model which measures what a buyer would be willing to pay currently for the future cash stream potential of existing technology. The specific method used to value the technologies involved estimating future cash flows to be derived as a direct result of those technologies, and discounting those future streams to their present value. The discount factors used, ranging from 25% to 36%, reflects the business and financial risks of an investment in technologies. Forecasts of future cash flows are based on managements' judgment of expected conditions and expected courses of action.

Valuation of in-process research and development in business combinations. Purchase price allocation to in-process research and development represents the estimated fair value of research and development projects that are reasonably believed to have no alternative future use. The value assigned to in-process research and development was determined by independent appraisals by estimating the cost to develop the purchased in-process research and development into commercially feasible products, estimating the percentage of completion at the acquisition date, estimating the resulting net risk-adjusted cash flows from the projects and discounting the net cash flows to their present value. The discount rates used in determining the in-process research and development expenditures reflects a higher risk of investment because of the higher level of uncertainty due in part to the nature of the Company and the industry to constantly develop new technology for future product releases and ranged from 25% to 43.5%. The forecasts used by the Company in valuing in-process research and development were based on assumptions the Company believed at the time to be reasonable, but which are inherently uncertain and unpredictable. Given the uncertainties of the development process, no assurance can be given that deviations from the Company's estimates will occur and no assurance can be given that the in-process research and development projects identified will ever reach either technological or commercial success.

Valuation of long-lived and intangible assets and goodwill. In accordance with the provisions of SFAS No. 144, Accounting for the Impairment or Disposal of Long-Lived Assets, we assess the impairment of identifiable intangibles with finite lives and long-lived assets whenever events or changes in circumstances indicate that the carrying value may not be recoverable. Factors we consider important which could trigger an impairment review include the following: significant underperformance relative to expected historical or projected future operating results; significant changes in the manner of our use of the acquired assets or the strategy for our overall business; significant negative industry or economic trends; significant changes in who our competitors are and what they do; significant changes in our relationship with Amersham Biosciences; significant decline in our stock price for a sustained period; and our market capitalization relative to net book value.

If we were to determine that the value of long-lived assets and identifiable intangible assets with finite lives was not recoverable based on the existence of one or more of the aforementioned factors, then the recoverability of those assets to be held and used would be measured by a comparison of the carrying amount of those assets to undiscounted future net cash flows expected to be generated by those assets. If such assets are considered to be impaired, the impairment to be recognized would be measured by the amount by which the carrying value of the assets exceeds the fair value of the assets. Assets to be disposed of are reported at the lower of the carrying amount or fair value less costs to dispose.

In June 2001, SFAS No. 142, Goodwill and Other Intangible Assets was issued. SFAS No. 142 addresses financial accounting and reporting for acquired goodwill and other intangible assets. Among other things, SFAS No. 142 requires that goodwill and intangible assets with indefinite useful lives no longer be amortized, but rather tested annually for impairment or more frequently if events or circumstances indicate that there may be an impairment. The impairment test consists of a comparison of the fair value of the Company's reporting units with their carrying amount. If the carrying amount exceeds its fair value, the Company is required to perform the second step of the impairment test, as this is an indication that goodwill may be impaired. The impairment loss is measured by comparing the implied fair value of the reporting unit's goodwill with its carrying amount. If the carrying amount exceeds the implied fair value, an impairment loss shall be recognized in an amount equal to the excess. After an impairment loss is recognized, the adjusted carrying amount of the intangible asset shall be its new accounting basis. Subsequent reversal of a previously recognized impairment loss is prohibited. In accordance with SFAS No. 142, the Company performed its annual impairment test on December 31, 2003, which did not indicate any impairment.

Accounting for income taxes. We are required to determine our annual income tax provision in each of the jurisdictions in which we operate. This involves determining our current and deferred income tax expense as well as accounting for differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. The future tax consequences attributable to these differences result in deferred tax assets and liabilities, which are included in our consolidated balance sheets. We must assess the recoverability of the deferred tax assets by considering whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. To the extent we believe that recovery does not meet this "more likely than not" standard as required in SFAS No. 109, Accounting for Income Taxes, we must establish a valuation allowance. If a valuation allowance is established or increased in a period, we must allocate the related income tax expense to income from continuing operations in the consolidated statement of operations to the extent those deferred tax assets originated from continuing operations. To the extent income tax benefits are allocated to stockholders' equity, the related valuation allowance also must be allocated to stockholders' equity.

Management judgment and estimates are required in determining our income tax provision, deferred tax assets and liabilities and any valuation allowance recorded against net deferred tax assets. At December 31, 2003, we have established a valuation allowance attributable to certain acquisition-related temporary differences as we believe that a portion of the deferred tax assets at December 31, 2003 will not meet the "more likely than not" standard for realization in the carryback and carryforward periods based on the criteria set forth in SFAS No. 109. We review the recoverability of deferred tax assets during each reporting period.

Revenue recognition. The Company generally recognizes revenue upon shipment of product and/or performance of a service, such as installation or training. Revenue is recognized if persuasive evidence of an arrangement exists, the sales price is fixed or determinable, customer acceptance has occurred, collectability is reasonably assured and title and risk of loss have passed to the customer. The Company has no obligations to customers after the date products are shipped or installed, if applicable, other than pursuant to warranty obligations and service or maintenance contracts. The Company provides for the estimated costs to fulfill customer warranty obligations upon the recognition of the related revenue. The Company provides for the estimated amount of future returns upon shipment of products or installation, if applicable, based on historical experience. While product returns and warranty costs have historically not been significant, they have been within our expectations and the provisions established, however, there is no assurance that we will continue to experience the same return rates and warranty repair costs that we have in the past. Any significant increase in product return rates or a significant increase in the cost to repair our products could have a material adverse impact on our operating results for the period or periods in which such returns or increased costs materialize. The Company makes estimates evaluating its allowance for doubtful accounts. On an ongoing basis, the Company monitors collections and payments from its customers and maintains a provision for estimated credit losses based upon our historical experience and any specific customer collection issues that we have identified. While such credit losses have historically not been significant, they have been within our expectations and the provisions established, however, there is no assurance that we will continue to experience the same credit loss rates that we have in the past. A significant change in the liquidity or financial position of our customers could have a material adverse impact on the collectability of our accounts receivable and our future operating results.

Inventory. The Company values its inventory at the lower of the actual cost to purchase (first-in, first-out method) and/or manufacture the inventory or the current estimated market value of the inventory. The Company regularly reviews inventory quantities on hand and records a provision to write down excess and obsolete inventory to its estimated net realizable value if less than cost, based primarily on its estimated forecast of product demand. Since forecasted product demand quite often is a function of previous and current demand, a significant decrease in demand could result in an increase in the charges for excess inventory quantities on hand. In addition, the Company's industry is subject to technological change and new product development, and technological advances could result in an increase in the amount of obsolete inventory quantities on hand. Therefore, any significant unanticipated changes in demand or technological developments could have a significant adverse impact on the value of the Company's inventory and its reported operating results.

Results of Operations

Year Ended December 31, 2003 Compared to Year Ended December 31, 2002

Revenues. Revenues increased $29.8 million, or 52%, to $87.1 million in 2003 from $57.4 million in 2002. This increase is primarily due to the effects of our 2003 acquisitions and the full year effect of acquisitions made in 2002, compared to a partial year impact in 2002. Revenues for 2003 would have been approximately $84.6 million if our sales denominated in foreign currencies were translated into U.S. dollars using 2002 exchange rates, an increase of 47% over 2002. The favorable foreign exchange effects for the year is due primarily to the strengthening of the British pound sterling and the Euro against the US dollar.

Cost of product revenues. Cost of product revenues increased $14.9 million or 52%, to $43.7 million in 2003 from $28.8 million in 2002. As a percentage of product revenues, cost of product revenues for 2003 and 2002 was 50%. For 2003, approximately $841,000 of the cost of product sales was related to fair value adjustments of inventory and backlog acquired from Genomic Solutions, BTX, GeneMachines, BioRobotics and Hoefer for products which were shipped in 2003. For 2002, approximately $514,000 of the cost of product sales was related to fair value adjustments of inventory and backlog acquired from Genomic Solutions for products which were shipped in 2002. For 2003 and 2002, excluding fair value adjustments related to acquisitions of $841,000 and $514,000, respectively, in cost of product sales, gross margin as a percent of total revenues was 51%. Approximately $402,000 of estimated fair value adjustments related to the acquisitions of BioRobotics and Hoefer remain on the balance sheet as of December 31, 2003.

General and administrative expense. General and administrative expense increased $1.7 million, or 18%, to $10.9 million in 2003 from $9.2 million in 2002 due primarily to acquisitions. A portion of the increase is due to the effects of our 2003 acquisitions and our 2002 acquisitions having a full year impact on 2003 spending compared to a partial year impact in 2002. The balance of the increase in spending over 2002 was due primarily to increased costs for insurance partially offset by a decrease in bonus earned under the 2003 bonus plan compared to the 2002 bonus plan and legal expense related to arbitration proceedings.

Restructuring and severance related expenses. For the year ended December 31, 2002, we incurred a total charge of $784,000 for restructuring at both our Union Biometrica and Bio chrom subsidiaries. The restructuring at our Union Biometrica subsidiary consolidated most general and administrative activity into our Holliston facility and refocused research and development efforts. The restructuring charges at Biochrom was related to the movement of the operation of Walden Precision Apparatus into the Biochrom facility. This consolidation of operations, which was planned at the time of the acquisition of Walden Precision Apparatus in July 2002, eliminated duplicative positions in both our Biochrom and Walden Precision Apparatus operations, and reduced facility costs. Of the $784,000 charge for restructuring, approximately $618,000 was for severance and related costs, with the balance of $166,000 consisting of excess unused lease space.

Sales and marketing expense. Sales and marketing expense increased $6.9 million, or 82%, to $15.4 million in 2003 from $8.4 million in 2002 due primarily to acquisitions made during 2002 and 2003. As a percentage of revenues, sales and marketing expense was 18% in 2003 compared to 15% in 2002. This increase as a percentage of revenue is primarily attributable to the higher costs associated with the direct sales force at our Genomic Solutions subsidiary, which we acquired in October 2002, compared to the traditional spending rate for sales through a catalog or through distributors that we have historically experienced.

Research and development expense. Research and development spending, which includes expenses related to research revenues, was $6.3 million in 2003 compared to $4.1 million for the same period in 2002. This net increase is primarily due to acquisitions made during 2002 and 2003 partially offset by a reduction in expenses as a result of the restructuring at Union Biometrica in the fourth quarter of 2002. As a percentage of revenues, research and development was 7.2% for both 2003 and 2002.

In-process research and development expense. As of the date of the acquisition of Genomic Solutions in 2002, we recorded $1.6 million of in-process research and development expense representing the estimated fair value of acquired research and development projects with no alternative future use.

Stock compensation expense. In 2003 we recorded $519,000 compared to $1.3 million for 2002 of stock compensation expense. This expense is related to options granted prior to our initial public offering and to options issued in exchange for the outstanding options of Union Biometrica in connection with the acquisition of Union Biometrica. Stock compensation expense has decreased as the Company uses the graded method, which results in decreasing compensation expense from the date of the stock option grant until the vesting dates. We will recognize $28,304 of stock compensation expense over the remaining vesting life of the options.

Amortization of goodwill and other intangibles. Amortization of intangibles, including amortization of acquired technologies, was $2.7 million in 2003 compared to $1.5 million in 2002. This increase is directly attributed to acquisitions made in 2002 and 2003.

Other income (expense), net. Other expense, net for 2003 of $428,000 included approximately $790,000 in charges related to an arbitration award in favor of the former stockholders of Union Biometrica. Other expense, net for 2003 also included net interest expense of approximately $151,000 compared to net interest income of $342,000 for 2002. This shift from interest income to interest expense is due to cash and interest-bearing debt being increasingly used to fund acquisitions since 2002. Other expense, net for 2003 also included a $484,000 foreign exchange gain compared to a $402,000 gain for the same period last year. Other than debt that is treated as a long-term investment, these exchange gains and losses are primarily related to debt between our subsidiaries.

Income taxes. The Company's effective income tax rates were 34% for 2003 and 35% for 2002 notwithstanding the effects of the nondeductible charges related to an arbitration award in 2003, in-process research and development charges for 2002 and certain stock compensation expense for 2003 and 2002.

Year Ended December 31, 2002 Compared to Year Ended December 31, 2001

Revenues. Revenues increased $16.5 million, or 40%, to $57.4 million in 2002 from $40.9 million in 2001. The majority of this increase is due to the impact of acquisitions made in 2002 and the full year impact of acquisitions made in 2001. The balance of the increase was primarily from the leveraged growth in acquisitions and from existing businesses that introduced new products. Revenues for 2002 would have been approximately $56.2 million if our sales denominated in foreign currencies were translated into U.S. dollars using 2001 exchange rates, an increase of 37% over 2001.

Cost of product revenues. Cost of product revenues increased $8.6 million, or 43%, to $28.8 million in 2002 from $20.2 million in 2001. As a percentage of product revenues, cost of product revenues for 2002 was higher by 0.7 % compared to 2001 due to the additional cost of product revenues for fair value adjustments made to inventory and backlog acquired in connection with the acquisition of Genomic Solutions and sold prior to December 31, 2002. Without this additional expense of $514,000, the cost of product revenues as a percent of product revenues would have been the same as it was for 2001. A significant portion of the expenses associated with collaboration revenue is included in research and development expense.

General and administrative expense. General and administrative expense increased $2.2 million, or 31%, to $9.2 million in 2002 from $7.0 million in 2001 due primarily to acquisitions. A portion of the increase, $1.8 million or 82%, is due to the effects of our 2002 acquisitions and our 2001 acquisitions having a full year impact on 2002 spending compared to a partial year impact in 2001. The balance of the increase in spending over 2001 of approximately $400,000 was due primarily to increases in expenses such as insurance, professional legal and audit services, and salaries and related costs. As a percentage of revenues, general and administrative expense decreased from 17% in 2001 to 16% in 2002.

Restructuring and severance related expenses. During 2002 we incurred a charge of $784,000 related to restructurings at our Union Biometrica ("UBI") and Biochrom subsidiaries. The restructuring at UBI was due to the lack of strong revenue growth to support its infrastructure. The restructuring charges associated with UBI in 2002 totaled approximately $310,000 and consisted of $166,000 in lease buyout costs for excess and unused space, and $144,000 in personnel severance and related costs. As planned when we completed the acquisition of Walden Precision Apparatus ("WPA") in July 2002, the operations of WPA were moved into the Biochrom facility in the third quarter of 2002. As part of this consolidation, we eliminated duplicative positions in our Biochrom and WPA operations and reduced facility costs. This resulted in a $474,000 restructuring charge in 2002, which consisted entirely of severance and related costs related to existing Biochrom employees. During 2001, severance packages totaling $298,000 including related costs, were negotiated for the President of UBI and for the Chief Scientific Officer of UBI. Both the President and Chief Scientific Officer were executives of UBI prior to our acquisition of UBI, and the President was the majority shareholder prior to the acquisition. The termination of their employment resulted in an additional expense of $162,000 related to the intangible asset recorded at the date of acquisition for in place work force.

Sales and marketing expense. Sales and marketing expense increased $3.6 million, or 74%, to $8.4 million in 2002 from $4.8 million in 2001 due primarily to acquisitions. Excluding the effect of acquisitions made during 2001 and 2002 of $3.2 million, sales and marketing expense grew $397,000, or 8%, due primarily to the addition of sales, customer and technical support personnel to support the direct distribution of certain of our Biochrom products. As a percentage of revenues, sales and marketing expense was 15% in 2002 compared to 12% in 2001.

Research and development expense. Research and development spending was $4.1 million in 2002, $1.7 million of which was related to businesses acquired in 2001 and 2002. Excluding this $1.7 million, spending in 2002 was approximately $2.4 million, a decrease of approximately $770,000 from spending in 2001. This decrease was due to several factors including the timing of project spending, the amount of spending related to collaboration revenues, and the restructuring of our Union Biometrica subsidiary during the year. As a percentage of revenues, research and development was 7% in 2002 compared to 8% in 2001.

In-process research and development expense. As of the date of the acquisitions in 2002 of Genomic Solutions and in 2001 of Warner Instruments and Union Biometrica, we recorded $1.6 million, $159,000 and $5.3 million respectively of in-process research and development expense representing the estimated fair value of acquired research and development projects with no alternative future use.

Stock compensation expense. We recorded $1.3 million of stock compensation expense in the twelve months ended December 31, 2002. We will recognize approximately $550,000 of additional expense over the remaining vesting life of the options. In 2001, we recorded stock compensation expense of approximately $2.7 million in connection with the grant of stock options to employees.

Amortization of goodwill and other intangibles. Amortization of goodwill and other intangibles, including amortization of acquired technology, was $1.5 million in 2002 and $1.7 million in 2001. As a result of fully adopting SFAS No. 142, we did not record any amortization of goodwill or other indefinite lived intangibles in 2002. For acquisitions subsequent to June 30, 2001, no amortization expense for goodwill or indefinite lived intangibles was recorded during 2001. If this adoption had been made at the beginning of 2001, amortization expense would have been approximately $654,000 for 2001 compared to the $1.5 million recorded in 2002. This increase of approximately $850,000 was the result of amortizing definite lived intangible assets related to our acquisitions in 2002 and the full year effect of amortization of definite lived intangible assets associated with our 2001 acquisitions.

Other income (expense), net. Other income, net, was $707,000 in 2002 compared to $1.2 million in 2001. Net interest income for 2002 was $341,000 compared to $1.4 million in 2001. Net interest income for 2002 and 2001 was the result of interest earned on the proceeds from our December 2000 initial public offering and the underwriters exercise of the over allotment in January 2001. The decline in net interest income in 2002 compared to 2001 was due to lower interest rates in 2002, and lower available cash balances in 2002. This reduction in cash balances was the result of using cash, both in 2001 and 2002, primarily to fund acquisitions. Other income for 2002 also includes a favorable foreign currency gain of $402,000 compared to an unfavorable currency loss of $100,000 in 2001. Effective January 1, 2002, certain debt between us and our foreign subsidiaries is now treated as a long-term investment rather than as debt with repayment expected in the foreseeable future (as it was previously treated.) Accordingly, in 2002 we did not record a foreign currency gain adjustment in our consolidated statement of operations related to this intercompany debt. Instead, we recorded the effect of the exchange rate fluctuation as a currency translation adjustment in accumulated other comprehensive income (loss) in stockholders' equity (deficit). The currency translation adjustment recorded in other comprehensive income in connection with this intercompany debt in 2002 was a gain of $1,000,000. In 2001, the foreign currency gain reflected in the income statement related to this intercompany debt was approximately $116,000.

Income taxes. The Company's effective income tax rates were 35% for 2002 and 37% for 2001 notwithstanding the effects of the nondeductible in-process research and development charges for 2002 and 2001, certain stock compensation expense for 2002 and 2001 and certain amortization of goodwill and intangibles for 2001. The decrease in the income tax rate was principally due to the adoption of SFAS 142, Goodwill and Other Intangible Assets, which eliminates amortization of goodwill and certain intangibles deemed to have an indefinite life.

Liquidity and Capital Resources

Historically, we have financed our business through cash provided by operating activities, the issuance of common stock, and preferred stock, and bank borrowings. Our liquidity requirements have arisen primarily from investing activities, including funding of acquisitions and capital expenditures. As of December 31, 2003, we had cash and cash equivalents of $8.2 million which represents a decrease of approximately $7.1 million from December 31, 2002. Approximately $6.6 million in cash was used to partially fund the acquisitions of BTX in January 2003 and GeneMachines in March 2003. An additional $6 million in proceeds from a demand bridge note entered into in March 2003 was used to fund the remaining purchase price for the acquisition of GeneMachines. During the second quarter of 2003, $1.3 million in cash was used in settlement of a dispute between our subsidiary Genomic Solutions and Affymetrix. This amount was fully reserved for by Genomic Solutions on the balance sheet prior to our acquisition of Genomic Solutions. During the third quarter of 2003, we received cash in the amount of approximately $1.0 million as payment in full, including accrued interest, of promissory notes issued in September 2000 to our CEO, Chane Graziano. These proceeds and additional cash on hand were used to partially fund the acquisition of BioRobotics in September 2003. In October 2003, we entered into a second demand bridge note for $6.5 million to partially fund the acquisition of BioRobotics. On November 21, 2003, we entered into a $20 million revolving credit facility with Brown Brothers Harriman (the "bank"). The credit facility bears an interest rate equal to the bank's base rate which at December 31, 2003 was equal to the prime rate of 4% and has a three year term. The credit facility also provides for certain restrictive covenants and financial tests, and the breach of such covenants may require repayment of the outstanding debt before the end of the three year term. We are currently in compliance with such covenants. As of December 31, 2003, we have borrowed $12.7 million against the credit facility, in part used to repay the $6.5 million outstanding on bridge notes entered into with Brown Brothers Harriman in 2003 and $5.3 million to fund the acquisition of Hoefer in November 2003. In connection with our March 2004 acquisition of KD Scientific, we borrowed an additional $6.65 million under the credit facility and currently have approximately $19.1 million outstanding thereunder.

Our operating activities generated cash of $ 2.0 million in 2003, $799,000 in 2002 and $4.1 million in 2001. For all periods presented, operating cash flows were primarily due to operating results, including the full-year effect of acquisitions prior to non-cash charges, partially offset by working capital requirements. During 2003, the $2.0 million of cash provided by operating activities was net of a $1.3 million settlement paid to Affymetrix and a $0.8 million settlement paid to the former shareholders of Union Biometrica. Our operating cash flow for 2003 was also negatively impacted by approximately $2.7 million from the build up in accounts receivables of several of the acquisitions we made during the year. During 2002, Genomic Solutions required approximately $3.0 million in cash to fund working capital needs primarily as a result of the liabilities that were assumed as part of the acquisition.

Our investing activities used cash of $22.4 million in 2003, $12.4 million in 2002, and $20.2 million in 2001 primarily for funding acquisitions which are more fully described in Note 3 to our Consolidated Financial Statements.

Our financing activities have historically consisted of borrowings under a revolving credit facility, long-term debt and the issuance of preferred stock and common stock, including the common stock issued in our initial public offering. Financing activities provided cash of $13.1 million in 2003, used cash of $3.1 million in 2002 and provided cash of $9.7 million in 2001. During 2003, we entered into a $20 million revolving credit facility with Brown Brothers Harriman & Co.. As of December 31, 2003, we have borrowed $12.7 million against the credit facility, in part used to repay the $6.5 million outstanding on bridge notes entered into with Brown Brothers Harriman in 2003 and $5.4 million to fund the acquisition of Hoefer in November 2003. In addition, we received $1.0 million from the repayment of a note receivable from an officer. During 2002, we used approximately $3.7 million of cash to repay debt, which originated at the sellers request for the acquisition of SciePlas Ltd. This was partially offset by proceeds from common stock issuances of approximately $1.3 million of which $886,000 was from the repayment of a note receivable from an officer.

Overview of Cash Flows for the years ended December 31,	(in thousands) 2003	2002	2001
Cash flows from operations:			
Net Income	$ 4,260	$ 737	(5,208)
Adjust non cash items	6,738	5,298	11,461
Changes in assets and liabilities	(8,970)	(5,236)	(2,158)
Cash provided by operations	2,028	799	4,095
Investing activities:			
Acquisition of businesses	(21,149)	(10,736)	(17,984)
Other Investing activities	(1,250)	(1,631)	(2,192)
Cash used by investing activities	(22,399)	(12,367)	(20,176)
Financing activities:			
Cash provided by (repayments of) debt	11,782	(3,744)	3,818
Other financing activities	1,272	600	5,880
Cash provided (used) by financing activities	13,054	(3,144)	9,698
Exchange effect on cash	225	640	(49)
Decrease in cash	$ (7,090)	$ (14,072)	$ (6,432)

Our forecast of the period of time through which our financial resources will be adequate to support our operations is a forward-looking statement that involves risks and uncertainties, and actual results could vary as a result of a number of factors. Based on our current operations and current operating plans, we expect that our available cash, cash generated from current operations and debt capacity will be sufficient to finance current operations and capital expenditures, for at least 12 months. However, we may use substantial amounts of capital to accelerate product development or expand our sales and marketing activities. We may need to raise additional capital in order to make significant acquisitions. Additional capital raising activities will dilute the ownership interests of existing stockholders to the extent we raise capital by issuing equity securities. Currently, we may be unable to access the public equity markets due to outstanding amendment to a Current Report on Form 8-K in connection with a previous acquisition. In addition, we may not be able to use Form S-3 to effect a registration of our equity. We are in the process of seeking to complete this filing and anticipate that we will become current with our required filings under Form 8-K in the foreseeable future. However, until this matter is resolved, our ability to raise capital may be limited to private equity transactions and/or additional borrowings and may result in entering into an agreement on less than favorable terms. In addition, our credit facility with Brown Brothers Harriman contains limitations on our ability to incur additional indebtedness and requires creditor approval for acquisitions funded with cash in excess of $6 million and for those which may be funded with equity in excess of $10 million. Accordingly, there can be no assurance that we will be successful in raising additional capital on favorable terms or at all.

Off-Balance Sheet Arrangements

We do not use special purpose entities or other off-balance sheet financing arrangements.

Contractual Obligations

The following schedule represents our contractual obligations as of December 31, 2003.

		Payments Due by Period					
Contractual Obligation	Total	2004	2005	2006	2007	2008	2009 & beyond
Notes payable	$13,088,026	$ 343,082	$ —	$12,744,944	$ —	$ —	$ —
Capital leases, including imputed interest	113,852	69,109	23,704	21,039	—	—	—
Operating leases	4,924,196	2,094,427	1,149,381	693,600	513,353	388,210	85,225
Total	$18,126,074	$ 2,506,618	$ 1,173,085	$13,459,583	$ 513,353	$ 388,210	$ 85,225

Impact of Foreign Currencies

We sell our products in many countries and a substantial portion of our sales, costs and expenses are denominated in foreign currencies, especially the United Kingdom pound sterling and the Euro. During 2003 and 2002 the U.S. dollar weakened against these currencies resulting in increased consolidated revenue and earnings growth. The gain associated with the translation of foreign equity into U.S. dollars was approximately $4.0 million for 2003 and, for 2002, approximately $2.5 million. In addition, the currency fluctuations resulted in approximately $484,000 and $400,000 in foreign currency gains in 2003 and 2002, respectively.

Historically, we have not hedged our foreign currency position. Currently, we attempt to manage foreign currency risk through the matching of assets and liabilities. However, as our sales expand internationally, we plan to evaluate our currency risks and we may enter into foreign exchange contracts from time to time to mitigate foreign currency exposure.

Backlog

Our order backlog was approximately $6.0 million as of December 31, 2003 and $5.6 million as of December 31, 2002. We include in backlog only those orders for which we have received valid purchase orders. Most purchase orders may be cancelled at any time prior to shipment. Our backlog as of any particular date may not be representative of actual sales for any succeeding period. We typically ship our backlog at any given time within 90 days.

Recently Issued Accounting Pronouncements

In June 2001, SFAS No. 143, Accounting for Asset Retirement Obligations was issued. SFAS No. 143 applies to legal obligations associated with the retirement of certain tangible long-lived assets. This Statement is effective for fiscal years beginning after June 15, 2002. The Company adopted SFAS No. 143 on January 1, 2003. The adoption of this Statement did not have a material impact on the Company's consolidated results of operations or financial position.

In May 2002, SFAS No. 145, Rescission of FASB Statements No. 4, 44, and 64, Amendment of FASB Statement No. 13, and Technical Corrections, was issued. SFAS No. 145 which is effective for fiscal years beginning after May 15, 2002 rescinds SFAS No. 4, Reporting Gains and Losses from Extinguishment of Debt, SFAS No. 64, Extinguishments of Debt Made to Satisfy Sinking-Fund Requirements, and SFAS No. 44, Accounting for Intangible Assets of Motor Carriers. This Statement also amends SFAS No. 13, Accounting for Leases, to eliminate an inconsistency between the required accounting for sale-leaseback transactions. This Statement also amends other existing authoritative pronouncements to make various technical corrections, clarify meanings, or describe their applicability under changed conditions. The Company adopted SFAS No. 145 on January 1, 2003. The adoption of SFAS No. 145 did not have a material impact on the Company's consolidated results of operations or financial position.

In July 2002, SFAS No. 146, Accounting for Costs Associated with Exit or Disposal Activities, was issued. SFAS No. 146 is based on the fundamental principle that a liability for a cost associated with an exit or disposal activity should be recorded when it (1) is incurred, and (2) can be measured at fair value. SFAS No. 146 is effective for exit and disposal activities initiated after December 31, 2002. The Company adopted SFAS No. 146 on January 1, 2003. The adoption of this Statement did not have a material impact on the Company's consolidated results of operations or financial position.

In November 2002, FASB issued Interpretation No. 45, Guarantor's Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness to Others, an interpretation of FASB Statements No. 5, 57 and 107 and a rescission of FASB Interpretation No. 34. This Interpretation elaborates on the disclosures to be made by a guarantor in its interim and annual financial statements about its obligations under guarantees issued. The Interpretation also clarifies that a guarantor is required to recognize, at inception of a guarantee, a liability for the fair value of the obligation undertaken. The initial recognition and measurement provisions of the Interpretation are applicable to guarantees issued or modified after December 31, 2002. The disclosure requirements are effective for financial statements of interim and annual periods ending after December 31, 2002. The Company adopted this Interpretation on January 1, 2003 and there was no material impact on the Company's consolidated results of operations or financial position.

In December 2002, the FASB issued SFAS No. 148, Accounting for Stock-Based Compensation - Transition and Disclosure, an amendment of FASB Statement No. 123. This Statement amends SFAS No. 123, Accounting for Stock-Based Compensation, to provide alternative methods of transition for a voluntary change to the fair value method of accounting for stock-based employee compensation. In addition, this Statement amends the disclosure requirements of SFAS No. 123 to require prominent disclosures in both annual and interim financial statements.

In December 2003, the FASB issued FASB Interpretation No 46 (revised December 2003) ("FIN 46R"), Consolidation of Variable Interest Entities, which addresses how a business enterprise should evaluate whether it has a controlling financial interest in an entity through means other than voting rights and accordingly should consolidate the entity. FIN 46R replaces FASB Interpretation No. 46, Consolidation of Variable Interest Entities, which was issued in January 2003. The Company will be required to apply FIN 46R to variable interests in VIEs created after December 31, 2003. For variable interests in VIEs created before January 1, 2004, the Interpretation will be applied beginning on January 1, 2005. For any VIEs that must be consolidated under FIN 46R that were created before January 1, 2004, the assets, liabilities and noncontrolling interests of the VIE initially would be measured at their carrying amounts with any difference between the net amount added to the balance sheet and any previously recognized interest being recognized as the cumulative effect on an accounting change. If determining the carrying amounts is not practicable, fair value at the date FIN 46R first applies may be used to measure the assets, liabilities and noncontrolling interest of the VIE.

In November, 2002, the Emerging Issues Task Force ("EITF") reached a consensus on Issue No. 00-21, Revenue Arrangements with Multiple Deliverables. EITF Issue No. 00-21 addresses the accounting, by a vendor, for contractual arrangements in which multiple revenue-generating activities will be performed by the vendor. The Issue addresses when and, if so, how an arrangement involving multiple deliverables should be divided into separate units of accounting. The Issue also addresses how the arrangement consideration should be measured and allocated to the separate units of accounting in the arrangement. This Issue otherwise does not change applicable revenue recognition criteria. Companies are required to adopt this consensus for fiscal periods beginning after June 15, 2003. Companies may apply this consensus prospectively to new arrangements initiated after the date of adoption or as a cumulative catch adjustment. The Company prospectively adopted the provisions of the EITF's consensus on this Issue on July 1, 2003 and has determined that the application did not have a material impact on the Company's consolidated results of operations or financial position as of and for the six months ended December 31, 2003.

In May 2003, FASB issued Statement No. 150, " Accounting for Certain Financial Instruments with Characteristics of Both Liabilities and Equity." This Statement requires that certain instruments that were previously classified as equity on a company's statement of financial position now be classified as liabilities. The Statement is effective for financial instruments entered into or modified after May 31, 2003, and otherwise is effective at the beginning of the first interim period beginning after June 15, 2003. The Company has determined that application of this Statement did not have a material impact on the Company's consolidated results of operations or financial position.

In December 2003, FASB Statement No. 132 (revised), Employers' Disclosures about Pensions and Other Postretirement Benefits, was issued. SFAS 132 (revised) prescribes employers' disclosures about pension plans and other postretirement benefit plans; it does not change the measurement or recognition of those plans. The Statement retains and revises the disclosure requirements contained in the original SFAS 132. It also requires additional disclosures about the assets, obligations, cash flows, and net periodic benefit cost of defined benefit pension plans and other postretirement benefit plans. The Statement generally is effective for fiscal years ending after December 15, 2003, however all of the Company's pension plans covered by this Statement are outside of the United States. Therefore, the Company will be required to adopt the disclosure requirements of the Statement as of December 31, 2004.

Impact of Inflation

We believe that our revenues and results of operations have not been significantly impacted by inflation during the past three years.

Important Factors That May Affect Future Operating Results

Our operating results may vary significantly from quarter to quarter and year to year depending on a number of factors, including:

If we engage in any acquisition, we will incur a variety of costs, and may never realize the anticipated benefits of the acquisition.

Our business strategy includes the future acquisition of businesses, technologies, services or products that we believe are a strategic fit with our business. If we undertake any acquisition, the process of integrating an acquired business, technology, service or product may result in unforeseen operating difficulties and expenditures and may absorb significant management attention that would otherwise be available for ongoing development of our business. Moreover, we may fail to realize the anticipated benefits of any acquisition as rapidly as expected or at all. Future acquisitions could reduce stockholders' ownership, cause us to incur debt, expose us to future liabilities and result in amortization expenses related to intangible assets with definite lives.

Current uncertain economic trends may adversely impact our business.

We have experienced and may continue to experience reduced demand for our products as a result of the recent downturn and increased uncertainty in the general economic environment in which we and our customers operate. We cannot project the extent of the impact of the recent economic downturn. If economic conditions worsen or if a wider economic slowdown occurs, we may experience a material adverse effect on our business, operating results, and financial condition.

Our quarterly revenues will likely be affected by various factors, including the timing of capital equipment purchases by customers and the seasonal nature of purchasing in Europe.

Our quarterly revenues will likely be affected by various factors, including the seasonal timing of capital equipment purchases by customers and the seasonal nature of purchasing in Europe. Our revenues may vary from quarter to quarter due to a number of factors, including the seasonal nature of the capital equipment market, the timing of catalog mailings and new product introductions, future acquisitions and our substantial sales to European customers, who in summer months often defer purchases. With the acquisitions of Union Biometrica in May 2001, Genomic Solutions in October 2002, GeneMachines in March 2003 and BioRobotics in September 2003, an increasing portion of our revenues are the result of sales of relatively high-priced products, considered to be capital equipment. The capital equipment market is very seasonal and as such, we will experience substantial fluctuations in our quarterly revenues. Additionally, delays in purchase orders, receipt, manufacture, shipment or receivables collection of these relatively high-priced products could lead to substantial variability in revenues, operating results and working capital requirements from quarter-to-quarter, which could adversely affect our stock price. In particular, delays or reduction in purchase orders from the pharmaceutical and biotechnology industries could have a material adverse effect on us.

We may misinterpret trends of our capital equipment product lines due to the cyclical nature of the capital equipment purchasing market.

The cyclical buying pattern of the capital equipment purchasing market could mask or exaggerate the economic trends underlying the market for our capital equipment product lines. Specifically, a decline in any quarter that is typically a quarter that we would expect to contribute less than one-quarter projected revenue for the year, could be misinterpreted if the decline was due instead to a negative trend in the market or in the demand for our products. Conversely, an increase in any quarter that is typically a quarter that we would expect to contribute less than one-quarter of projected revenue for the year, could be misinterpreted as a favorable trend in the market and in the demand for our products. This could have a material adverse effect on our operations.

We may not realize the expected benefits of our recent acquisitions of BTX, GeneMachines, BioRobotics, Hoefer and KD Scientific due to difficulties integrating the businesses, operations and product lines.

Our ability to achieve the benefits of our recent acquisitions of BTX, GeneMachines, BioRobotics, Hoefer and KD Scientific will depend in part on the integration and leveraging of technology, operations, sales and marketing channels and personnel. The integration process is a complex, time-consuming and expensive process and may disrupt our business if not completed in a timely and efficient manner. The challenges involved in this integration include the following:

- demonstrating to customers and suppliers that the acquisitions will not result in adverse changes in client service standards or business focus and
- addressing any perceived adverse changes in business focus.

We may have difficulty successfully integrating the acquired businesses, the domestic and foreign operations or the product lines, and as a result, we may not realize any of the anticipated benefits of the acquisitions. Additionally, we cannot assure that our growth rate will equal the growth rates that have been experienced by us and the acquired companies, respectively, operating as separate companies in the past.

Genomic Solutions, our recently acquired subsidiary, has a history of losses and may not be able to sustain profitability.

Genomic Solutions incurred net losses of $4.0 million for the six months ended June 30, 2002, $26.1 million for the year ended December 31, 2001, $8.9 million for the year ended December 31, 2000 and $11.1 million for the year ended December 31, 1999. As of June 30, 2002, Genomic Solutions had an accumulated deficit of $72.0 million. In September 2001, Genomic Solutions instituted a restructuring plan designed to reduce its operating expenses. In July 2002, Genomic Solutions announced a further restructuring of its operations. However, even with these restructurings, Genomic Solutions needs to generate significant revenues to achieve and maintain profitability. Genomic Solutions' continued revenue growth depends on many factors, many of which are beyond its control, including factors discussed in this risk factors section. Genomic Solutions may not sustain revenue growth. Even if Genomic Solutions does achieve profitability, it may not sustain or increase profitability on a quarterly or annual basis.

As an acquisitive company, we may be the subject of lawsuits from either an acquired company's previous stockholders or our current stockholders.

As an acquisitive company, we may be the subject of lawsuits from either an acquired company's previous stockholders or our current stockholders. These lawsuits could result from the actions of the acquisition target prior to the date of the acquisition, from the acquisition transaction itself or from actions after the acquisition. Defending potential lawsuits could cost us significant expense and detract management's attention from the operation of the business. Additionally, these lawsuits could result in the cancellation of or the inability to renew, certain insurance coverage that would be necessary to protect our assets.

Our business is subject to economic, political and other risks associated with international revenues and operations.

Since we manufacture and sell our products worldwide, our business is subject to risks associated with doing business internationally. Our revenues from our non-U.S. operations represented approximately 50% of total revenues for the year ended December 31, 2003. We anticipate that revenue from international operations will continue to represent a substantial portion of total revenues. In addition, a number of our manufacturing facilities and suppliers are located outside the United States. Accordingly, our future results could be harmed by a variety of factors, including:

- changes in foreign currency exchange rates, which resulted in a foreign currency gain of approximately $484,000 for the year ended December 31, 2003 and an increase of foreign equity of approximately $4,030,260 for the year ended December 31, 2003,
- changes in a specific country's or region's political or economic conditions, including western Europe and Japan, in particular,
- potentially negative consequences from changes in tax laws affecting the ability to expatriate profits,
- difficulty in staffing and managing widespread operations, and
- unfavorable labor regulations applicable to European operations, such as severance and the unenforceability of non-competition agreements in the European Union.

We may lose money when we exchange foreign currency received from international revenues into U.S. dollars.

For the year ended December 31, 2003, approximately 46% of our business was conducted in functional currencies other than the U.S. dollar, which is our reporting currency. As a result, currency fluctuations among the U.S. dollar and the currencies in which we do business have caused and will continue to cause foreign currency transaction gains and losses. Currently, we attempt to manage foreign currency risk through the matching of assets and liabilities. In the future, we may undertake to manage foreign currency risk through additional hedging methods. We recognize foreign currency gains or losses arising from our operations in the period incurred. We cannot guarantee that we will be successful in managing foreign currency risk or in predicting the effects of exchange rate fluctuations upon our future operating results because of the number of currencies involved, the variability of currency exposure and the potential volatility of currency exchange rates.

Additional costs for complying with recent changes in Securities and Exchange Commission, Nasdaq Stock Market and accounting rules could adversely affect our profits.

Recent changes in the Securities and Exchange Commission and Nasdaq rules, as well as changes in accounting rules, will cause us to incur significant additional costs including professional fees, as well as additional personnel costs, in order to keep informed of the changes and operate in a compliant manner. These additional costs may be significant enough to cause our growth targets to be reduced, and consequently, our financial position and results of operations may be negatively impacted.

With new rules, including the Sarbanes-Oxley Act of 2002,we may have difficulty in retaining or attracting officers, directors for the board and various sub-committees thereof.

The recent changes in SEC and Nasdaq rules, including those resulting from the Sarbanes-Oxley Act of 2002, may result in us being unable to attract and retain the necessary officers, board directors and members of sub-committees thereof, to effectively manage. The perceived increased personal risk associated with these recent changes, may deter qualified individuals from wanting to participate in these roles.

We may have difficulty obtaining adequate directors and officers insurance and the cost for coverage may significantly increase.

As an acquisitive company, we may have difficulty in obtaining adequate directors' and officers' insurance to protect us and our directors and officers from claims made against them. Additionally, even if adequate coverage is available, the costs for such coverage may be significantly greater than current costs. This additional cost may have a significant effect on our profits and as a result our results of operations may be adversely affected.

We plan significant growth, and there is a risk that we will not be able to manage this growth.

Our success will depend on the expansion of our operations both through organic growth and acquisitions. Effective growth management will place increased demands on management, operational and financial resources and expertise. To manage growth, we must expand our facilities, augment our operational, financial and management systems, and hire and train additional qualified personnel. Failure to manage this growth effectively could impair our ability to generate revenue or could cause our expenses to increase more rapidly than revenue, resulting in operating losses or reduced profitability.

If we fail to retain key personnel and hire, train and retain qualified employees, we may not be able to compete effectively, which could result in reduced revenue or increased costs.

Our success is highly dependent on the continued services of key management, technical and scientific personnel. Our management and other employees may voluntarily terminate their employment at any time upon short notice. The loss of the services of any member of the senior management team, including the Chief Executive Officer, Chane Graziano, the President, David Green, the Chief Financial Officer, Susan Luscinski, or any of the managerial, technical or scientific staff may significantly delay or prevent the achievement of product development and other business objectives. We maintain key person life insurance on Messrs. Graziano and Green. Our future success will also depend on our ability to identify, recruit and retain additional qualified scientific, technical and managerial personnel. Competition for qualified personnel in the technology area is intense, and we operate in several geographic locations where labor markets are particularly competitive, including Boston, Massachusetts and London and Cambridge, England, and where demand for personnel with these skills is extremely high and is likely to remain high. As a result, competition for qualified personnel is intense, particularly in the areas of general management, finance, information technology, engineering and science, and the process of hiring suitably qualified personnel is often lengthy and expensive, and may become more expensive in the future. If we are unable to hire and retain a sufficient number of qualified employees, our ability to conduct and expand our business could be seriously reduced.

Our competitors and potential competitors may develop products and technologies that are more effective or commercially attractive than our products.

We expect to encounter increased competition from both established and development-stage companies that continually enter the market. We anticipate that these competitors will include:

- companies developing and marketing life sciences research tools,
- health care companies that manufacture laboratory-based tests and analyzers,
- diagnostic and pharmaceutical companies,
- analytical instrument companies and
- companies developing drug discovery technologies.

Currently, our principal competition comes from established companies that provide products that perform many of the same functions for which we market our products. Our competitors may develop or market products that are more effective or commercially attractive than our current or future products. Many of our competitors have substantially greater financial, operational, marketing and technical resources than we do. Moreover, these competitors may offer broader product lines and tactical discounts, and may have greater name recognition. In addition, we may face competition from new entrants into the field. We may not have the financial resources, technical expertise or marketing, distribution or support capabilities to compete successfully in the future.

Our products compete in markets that are subject to rapid technological change, and therefore one or more of our products could be made obsolete by new technologies.

Because the market for drug discovery tools is characterized by rapid technological change and frequent new product introductions, our product lines may be made obsolete unless we are able to continually improve existing products and develop new products. To meet the evolving needs of its customers, we must continually enhance our current and planned products and develop and introduce new products. However, we may experience difficulties that may delay or prevent the successful development, introduction and marketing of new products or product enhancements. In addition, our product lines are based on complex technologies that are subject to rapid change as new technologies are developed and introduced in the marketplace. We may have difficulty in keeping abreast of the rapid changes affecting each of the different markets we serve or intend to serve. Our failure to develop and introduce products in a timely manner in response to changing technology, market demands or the requirements of our customers could cause our product sales to decline, and we could experience significant losses.

We offer and plan to offer a broad product line and have incurred and expect to continue to incur substantial expenses for development of new products and enhanced versions of our existing products. The speed of technological change in our market may prevent us from being able to successfully market some or all of our products for the length of time required to recover development costs. Failure to recover the development costs of one or more products or product lines could decrease our profitability or cause us to experience significant losses.

We entered into a $20 million credit facility in November 2003 which contains certain financial and negative covenants the breach of which may adversely affect our financial condition.

We anticipate that our operations will support the covenants required as part of the $20 million revolving credit facility with Brown Brothers Harriman. However, if we are not in compliance with certain of these covenants, in addition to other actions the creditor may require, the amounts drawn on the $20 million facility may become immediately due and payable. This immediate payment may negatively impact our financial condition and we may be forced by our creditor into actions which may not be in our best interests.

Failure to raise additional capital or generate the significant capital necessary to implement our acquisition strategy, expand our operations and invest in new products could reduce our ability to compete and result in lower revenue.

We anticipate that our financial resources which include available cash, cash generated from operations, and debt and equity capacity, will be sufficient to finance operations and capital expenditures for at least twelve months. However, this expectation is premised on the current operating plan, which may change as a result of many factors, including market acceptance of new products and future opportunities with collaborators. Consequently, we may need additional funding sooner than anticipated. Our inability to raise capital could seriously harm our business and product development and acquisition efforts.

If we raise additional funds through the sale of equity or convertible debt or equity-linked securities, existing percentages of ownership in our common stock will be reduced. In addition, these transactions may dilute the value of our outstanding common stock. We may issue securities that have rights, preferences and privileges senior to our common stock. If we raise additional funds through collaborations or licensing arrangements, we may relinquish rights to certain of our technologies or products, or grant licenses to third parties on terms that are unfavorable. We may be unable to raise additional funds on acceptable terms or at all. In addition, our credit facility with Brown Brothers Harriman contains limitations on our ability to incur additional indebtedness and requires creditor approval for acquisitions funded with cash in excess of $6 million and for those which may be funded with equity in excess of $10 million. Currently, we may be unable to access the public equity markets due to an outstanding amendment to a Current Report of Form 8-K in connection with a previous acquisition. In addition, we may not be eligible to use Form S-3 to effect a registration of our equity. We are in the process of seeking to complete this potentially outstanding filing. If future financing is not available or is not available on acceptable terms, we may have to curtail operations or change our business strategy.

If we are unable to effectively protect our intellectual property, third parties may use our technology, which would impair our ability to compete in our markets.

Our continued success will depend in significant part on our ability to obtain and maintain meaningful patent protection for certain of our products throughout the world. Patent law relating to the scope of claims in the technology fields in which we operate is still evolving. The degree of future protection for our proprietary rights is uncertain. We own 27 U.S. patents and have 26 patent applications pending in the U.S. We also own numerous U.S. registered trademarks and trade names and have applications for the registration of trademarks and trade names pending. We rely on patents to protect a significant part of our intellectual property and to enhance our competitive position. However, our presently pending or future patent applications may not issue as patents, and any patent previously issued to us may be challenged, invalidated, held unenforceable or circumvented. Furthermore, the claims in patents which have been issued or which may be issued to us in the future may not be sufficiently broad to prevent third parties from producing competing products similar to our products. In addition, the laws of various foreign countries in which we compete may not protect our intellectual property to the same extent as do the laws of the United States. If we fail to obtain adequate patent protection for our proprietary technology, our ability to be commercially competitive will be materially impaired.

In addition to patent protection, we also rely on protection of trade secrets, know-how and confidential and proprietary information. To maintain the confidentiality of trade-secrets and proprietary information, we generally seek to enter into confidentiality agreements with our employees, consultants and strategic partners upon the commencement of a relationship. However, we may not obtain these agreements in all circumstances. In the event of unauthorized use or disclosure of this information, these agreements, even if obtained, may not provide meaningful protection for our trade-secrets or other confidential information. In addition, adequate remedies may not exist in the event of unauthorized use or disclosure of this information. The loss or exposure of our trade secrets and other proprietary information would impair our competitive advantages and could have a material adverse effect on our operating results, financial condition and future growth prospects.

We may be involved in lawsuits to protect or enforce our patents that would be expensive and time-consuming.

In order to protect or enforce our patent rights, we may initiate patent litigation against third parties. We may also become subject to interference proceedings conducted in the patent and trademark offices of various countries to determine the priority of inventions. Several of our products are based on patents that are closely surrounded by patents held by competitors or potential competitors. As a result, we believe there is a greater likelihood of a patent dispute than would be expected if our patents were not closely surrounded by other patents. The defense and prosecution, if necessary, of intellectual property suits, interference proceedings and related legal and administrative proceedings would be costly and divert our technical and management personnel from their normal responsibilities. We may not prevail in any of these suits. An adverse determination of any litigation or defense proceedings could put our patents at risk of being invalidated or interpreted narrowly and could put our patent applications at risk of not issuing.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. For example, during the course of this kind of litigation, there could be public announcements of the results of hearings, motions or other interim proceedings or developments in the litigation. Securities analysts or investors may perceive these announcements to be negative, which could cause the market price of our stock to decline.

Our success will depend partly on our ability to operate without infringing on or misappropriating the intellectual property rights of others.

We may be sued for infringing on the intellectual property rights of others, including the patent rights, trademarks and trade names of third parties. Intellectual property litigation is costly and the outcome is uncertain. If we do not prevail in any intellectual property litigation, in addition to any damages we might have to pay, we could be required to stop the infringing activity, or obtain a license to or design around the intellectual property in question. If we are unable to obtain a required license on acceptable terms, or is unable to design around any third party patent, we may be unable to sell some of our products and services, which could result in reduced revenue.

We are dependent upon our licensed technologies and may need to obtain additional licenses in the future to offer our products and remain competitive.

We have licensed key components of our technologies from third parties. While we do not currently derive a material portion of our revenue from products that depend on these licensed technologies, we may in the future. If our license agreements were to terminate prematurely or if we breach the terms of any licenses or otherwise fail to maintain our rights to these technologies, we may lose the right to manufacture or sell our products that use these licensed technologies. In addition, we may need to obtain licenses to additional technologies in the future in order to keep our products competitive. If we fail to license or otherwise acquire necessary technologies, we may not be able to develop new products that we need to remain competitive.

Many of our current and potential customers are from the pharmaceutical and biotechnology industries and are subject to risks faced by those industries.

We derive a substantial portion of our revenues from pharmaceutical and biotechnology companies. We expect that pharmaceutical and biotechnology companies will continue to be our major source of revenues for the foreseeable future. As a result, we are subject to risks and uncertainties that affect the pharmaceutical and biotechnology industries, such as pricing pressures as third-party payers continue challenging the pricing of medical products and services, government regulation, ongoing consolidation and uncertainty of technological change, and to reductions and delays in research and development expenditures by companies in these industries. In particular, several proposals are being contemplated by lawmakers in the United States to extend the Federal Medicare program to include reimbursement for prescription drugs. Many of these proposals involve negotiating decreases in prescription drug prices or imposing price controls on prescription drugs. If appropriate reimbursement cannot be obtained, it could result in customers purchasing fewer products from us as they reduce their research and development expenditures.

In particular, the biotechnology industry has been faced with declining market capitalization and a difficult capital-raising and financing environment. If biotechnology companies are unable to obtain the financing necessary to purchase our products, our business and results of operations could be materially adversely affected. As it relates to the pharmaceutical industry, several companies have significant patents that have expired or are about to expire, which could result in reduced revenues for those companies. If pharmaceutical companies suffer reduced revenues as a result of these patent expirations, they may be unable to purchase our products, and our business and results of operations could be materially adversely affected.

In addition, we are dependent, both directly and indirectly, upon general health care spending patterns, particularly in the research and development budgets of the pharmaceutical and biotechnology industries, as well as upon the financial condition and purchasing patterns of various governments and government agencies. Many of our customers, including universities, government research laboratories, private foundations and other institutions, obtain funding for the purchase of products from grants by governments or government agencies. There exists the risk of a potential decrease in the level of governmental spending allocated to scientific and medical research which could substantially reduce or even eliminate these grants. If government funding necessary to purchase our products were to decrease, our business and results of operations could be materially adversely affected.

If we are unable to achieve and sustain market acceptance of our target validation, high-throughput screening, assay development and ADMET screening products across their broad intended range of applications, we will not generate expected revenue growth and could adversely affect profits.

Our business strategy depends, in part, on successfully developing and commercializing our ADMET screening, molecular biology, high-throughput/high-content screening, and genomics, proteomics and high-throughput screening to meet customers' expanding needs and demands, an example of which is the COPAS™ technology obtained from the 2001 acquisition of Union Biometrica. Market acceptance of this and other new products will depend on many factors, including the extent of our marketing efforts and our ability to demonstrate to existing and potential customers that our technologies are superior to other technologies or techniques and products that are available now or may become available in the future. If our new products do not gain market acceptance, or if market acceptance occurs at a slower rate than anticipated, it could materially adversely affect our business and future growth prospects and could result in a goodwill and/or intangible impairment loss.

If Amersham Biosciences terminates its distribution agreements with us or fails to perform its obligations under the distribution agreements, it could impair the marketing and distribution efforts for some of our products and result in lost revenues.

For the year ended December 31, 2003, approximately 13% of our revenues were generated through two distribution agreements with Amersham Biosciences. The first distribution agreement was renegotiated in August 2001. Under this agreement, Amersham Biosciences acts as the primary marketing and distribution channel for the products of our Biochrom subsidiary and, as a result, we are restricted from allowing another person or entity to distribute, market and sell the majority of the products of our Biochrom subsidiary. We are also restricted from making or promoting sales of the majority of the products of our Biochrom subsidiary to any person or entity other than Amersham Biosciences or its authorized sub-distributors. We have little or no control over Amersham Biosciences' marketing and sales activities or the use of its resources. Amersham Biosciences may fail to purchase sufficient quantities of products from us or perform appropriate marketing and sales activities. The failure by Amersham Biosciences to perform these activities could materially adversely affect our business and growth prospects during the term of this agreement. In addition, our inability to maintain our arrangement with Amersham Biosciences for product distribution could materially impede the growth of our business and our ability to generate sufficient revenue. Our agreement with Amersham Biosciences may be terminated with 30 days notice under certain circumstances. This agreement has an initial term of three years, commencing August 1, 2001, after which it will automatically renew for an additional two years, unless terminated earlier by either party. In addition, the agreement may be terminated in accordance with its terms by either party upon 18 months prior written notice.

The second distribution agreement, between Hoefer, Inc., our subsidiary, and Amersham Biosciences was entered into in November 2003 in connection with our acquisition of certain assets of Amersham Biosciences, including the Hoefer name. The agreement provides that Hoefer will be the exclusive supplier of 1-D gel electrophoresis products to Amersham Biosciences. Hoefer also has the right to develop, manufacture and market 2-D gel electrophoresis products, which would be offered to Amersham Biosciences for sale under the Amersham Biosciences brand name. Hoefer has the right to sell any of its products, under the Hoefer brand name or any other non-Amersham Biosciences brand name, through other distribution channels, both direct and indirect. The initial term of the agreement is five years with an automatic five year renewal period. Amersham Biosciences may terminate the agreement during the renewal period if they decide to cease all activities in 1-D gel electrophoresis or if Hoefer fails to deliver new 1-D gel electrophoresis products.

General Electric recently announced its intention to acquire Amersham plc, the parent of Amersham Biosciences. While General Electric has indicated its intention to continue Amersham's presence in the life science market, and we believe our relationship with Amersham Biosciences is good, we cannot guarantee that the distribution agreements will be renewed, that Amersham Biosciences will aggressively market our products in the future or that General Electric will continue the partnership.

Accounting for goodwill may have a material adverse effect on us.

We have historically amortized goodwill purchased in our acquisitions on a straight-line basis ranging from five to 15 years. Upon the adoption of SFAS No. 142, goodwill and intangible assets with indefinite lives from acquisitions after June 30, 2001 and existing goodwill and intangible assets with indefinite lives from acquisitions prior to July 1, 2001 that remain as of December 31, 2001 are no longer amortized, but instead are evaluated annually to determine whether any portion of the remaining balance of goodwill and indefinite lived intangibles may not be recoverable, or more frequently, if events or circumstances indicate there may be an impairment. If it is determined in the future that a portion of our goodwill and intangible assets with indefinite lives is impaired, we will be required to write off that portion of the asset which could have an adverse effect on net income for the period in which the write off occurs. At December 31, 2003, we had goodwill and intangible assets with indefinite lives of $36.3 million, or 28% of our total assets.

If our accounting estimates are not correct, our financial results could be adversely affected.

Management judgment and estimates are necessarily required in the application of our Critical Accounting Policies. We discuss these estimates in the subsection entitled Critical Accounting Policies beginning on page 14. If our estimates are incorrect, our future financial operating results and financial condition could be adversely affected.

We may be adversely affected by litigation or arbitration involving Paul D. Grindle.

On February 4, 2002, Paul D. Grindle, the former owner of Harvard Apparatus, Inc., initiated an arbitration proceeding against us and certain directors before JAMS in Boston, Massachusetts. Mr. Grindle's claims arise out of post-closing purchase price adjustments related to our purchase of the assets and business of Harvard Apparatus by virtue of an Asset Purchase Agreement dated March 15, 1996 and certain related agreements. In the arbitration demand, Mr. Grindle sought the return of 1,563,851 shares of our common stock , or the disgorgement of the profits of our sale of the stock, as well as compensatory damages and multiple damages and attorney's fees under Mass. Gen. Laws, chapter 93A. In a demand letter that was attached to the arbitration demand, Mr. Grindle asserted losses in the amount of $15 million, representing the value of the 1,563,851 shares of our common stock as of January 2, 2002. On October 30, 2002, we received a decision from the arbitrator that we had prevailed on all claims asserted against us and certain of our directors in the arbitration action. Specifically, we received a written decision from the arbitrator granting our motion for summary disposition with respect to all claims brought against all parties in the action. We filed a complaint in the Massachusetts Superior Court seeking to confirm the arbitrator's decision. Mr. Grindle filed a complaint in the Massachusetts Superior Court seeking to vacate the arbitrator's decision. These two matters were consolidated. On or about July 30, 2003, the Massachusetts Superior Court granted our motion to confirm the arbitrator's decision and to deny Mr. Grindle's motion to vacate. Mr. Grindle has filed a notice of appeal with the Massachusetts Appeals Court and an application for a direct appellate review with the Massachusetts Supreme Judicial Court, both of which are pending.

Customer, vendor and employee uncertainty about the effects of the acquisitions of Genomic Solutions, BTX, GeneMachines, BioRobotics, Hoefer and KD Scientific could harm us.

We and the acquired companies' customers may, in response to the consummation of the acquisitions, delay or defer purchasing decisions. Any delay or deferral in purchasing decisions by customers could adversely affect our business. Similarly, employees of acquired companies may experience uncertainty about their future role until or after we execute our strategies with regard to employees of acquired companies. This may adversely affect our ability to attract and retain key management, sales, marketing and technical personnel following an acquisition.

A significant portion of the sales cycle for ours products is lengthy and we may spend significant time on sales opportunities with no assurance of success.

Our ability to obtain customers for our products, specifically for products made by Union Biometrica and Genomic Solutions, depends in significant part upon the perception that our products can help accelerate drug discovery and development efforts. The sales cycle for these systems is typically between three and six months due to the education effort that is required. Our sales efforts often require sales presentations to various departments within a single customer, including research and development personnel and key management. In addition, we may be required to negotiate agreements containing terms unique to each customer. We may expend substantial funds and management effort with no assurance that we will successfully sell our systems or products to the customer.

Ethical concerns surrounding the use of our products and misunderstanding of the nature of our business could adversely affect our ability to develop and sell our existing products and new products.

Genetic screening of humans is used to determine individual predisposition to medical conditions. Genetic screening has raised ethical issues regarding the confidentiality and appropriate uses of the resulting information. Government authorities may regulate or prohibit the use of genetic screening to determine genetic predispositions to medical conditions. Additionally, the public may disfavor and reject the use of genetic screening.

Genomic and proteomic research is used to determine the role of genes and proteins in living organisms. Our products are designed and used for genomic and proteomic research and drug discovery and cannot be used for genetic screening without significant modification. However, it is possible that government authorities and the public may fail to distinguish between the genetic screening of humans and genomic and proteomic research. If this occurs, our products and the processes for which our products are used may be subjected to government regulations intended to affect genetic screening. Further, if the public fails to distinguish between the two fields, it may pressure our customers to discontinue the research and development initiatives for which our products are used.

Additionally, some of our products may be used in areas of research involving cloning, stem cell use, organ transplants and other techniques presently being explored in the drug discovery industry. These techniques have drawn much negative attention recently in the public forum and could face similar risks to those identified above surrounding products for genomic and proteomic research.

Our stock price has fluctuated in the past and could experience substantial declines in the future and, as a result, management's attention may be diverted from more productive tasks.

The market price of our common stock has experienced significant fluctuations since its initial public offering in December 2000 and may become volatile and could decline in the future, perhaps substantially, in response to various factors, many of which are beyond our control, including:

- technological innovations by competitors or in competing technologies,
- revenues and operating results fluctuating or failing to meet the expectations of securities analysts or investors in any quarter,
- termination or suspension of equity research coverage by securities' analysts,
- comments of securities analysts and mistakes by or misinterpretation of comments from analysts,
- downward revisions in securities analysts' estimates or management guidance,
- investment banks and securities analysts may themselves be subject to suits that may adversely affect the perception of the market,
- conditions or trends in the biotechnology and pharmaceutical industries,
- announcements of significant acquisitions or financings or changes in strategic partnerships, and
- a decrease in the demand for our common stock.

In addition, the stock market and the Nasdaq National Market in general, and the biotechnology industry and small cap markets in particular, have experienced significant price and volume fluctuations that at times may have been unrelated or disproportionate to the operating performance of those companies. These broad market and industry factors may seriously harm the market price of our common stock, regardless of our operating performance. In the past, securities class action litigation has often been instituted following periods of volatility in the market price of a company's securities. A securities class action suit against us could result in substantial costs, potential liabilities and the diversion of management's attention and resources.

Provisions of Delaware law and of our charter and bylaws may make a takeover more difficult which could cause our stock price to decline.

Provisions in our certificate of incorporation and bylaws and in the Delaware corporate law may make it difficult and expensive for a third party to pursue a tender offer, change in control or takeover attempt which is opposed by management and the board of directors. Public stockholders who might desire to participate in such a transaction may not have an opportunity to do so. We also have a staggered board of directors that makes it difficult for stockholders to change the composition of the board of directors in any one year. These anti-takeover provisions could substantially impede the ability of public stockholders to change our management and board of directors. Such provisions may also limit the price that investors might be willing to pay for shares of our common stock in the future.

An active trading market for our common stock may not be sustained.

Although our common stock is quoted on the Nasdaq National Market, an active trading market for the shares may not be sustained.

Future issuance of preferred stock may dilute the rights of our common stockholders.

Our board of directors has the authority to issue up to 5,000,000 shares of preferred stock and to determine the price, privileges and other terms of these shares. The board of directors may exercise this authority without any further approval of stockholders. The rights of the holders of common stock may be adversely affected by the rights of future holders of preferred stock.

Cash dividends will not be paid on our common stock.

We intend to retain all of our earnings to finance the expansion and development of our business and do not anticipate paying any cash dividends in the foreseeable future. As a result, capital appreciation, if any, of our common stock will be a stockholder's sole source of gain for the foreseeable future.

The merger with Genomic Solutions may fail to qualify as a reorganization for federal income tax purposes, resulting in the recognition of taxable gain or loss in respect of our treatment of the merger as a taxable sale.

Both us and Genomic Solutions intended the merger to qualify as a reorganization within the meaning of Section 368(a) of the Internal Revenue Code of 1986, as amended. Although the Internal Revenue Service, or IRS, will not provide a ruling on the matter, Genomic Solutions obtained a legal opinion from its tax counsel that the merger constitutes a reorganization for federal income tax purposes. This opinion does not bind the IRS or prevent the IRS from adopting a contrary position. If the merger fails to qualify as a reorganization, the merger would be treated as a deemed taxable sale of assets by Genomic Solutions for an amount equal to the merger consideration received by Genomic Solutions' stockholders plus any liabilities assumed by us. As successor to Genomic Solutions, we would be liable for any tax incurred by Genomic Solutions as a result of this deemed asset sale.

Quantitative and Qualitative Disclosures about Market Risk

We manufacture and test the majority of products in research centers in the United States, the United Kingdom, Germany, Belgium and Austria. We sell our products globally through our direct catalog sales, direct sales force and indirect distributor channels. As a result, our financial results are affected by factors such as changes in foreign currency exchange rates and weak economic conditions in foreign markets.

We collect amounts representing a substantial portion of our revenues and pay amounts representing a substantial portion of our operating expenses in foreign currencies. As a result, changes in currency exchange rates from time to time may affect our operating results. Historically, we have not hedged our foreign currency position. Currently, we attempt to manage foreign currency risk through the matching of assets and liabilities. However, as our sales expand internationally, we plan to evaluate currency risks and we may enter into foreign exchange contracts from time to time to mitigate foreign currency exposure.

Controls and Procedures.

As required by Rules 13a-15 and 15d-15 under the Securities Exchange Act of 1934 we have evaluated, with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, the effectiveness of our disclosure controls and procedures as of the end of the period covered by this report. In designing and evaluating our disclosure controls and procedures, we and our management recognize that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and our management necessarily was required to apply its judgment in evaluating and implementing possible controls and procedures. Based upon that evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that they believe that our disclosure controls and procedures are reasonably effective to ensure that information required to be disclosed by us in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Securities and Exchange Commission's rules and forms. We intend to continue to review and document our disclosure controls and procedures, and our internal control over financial reporting, on an ongoing basis, and may from time to time make changes aimed at enhancing their effectiveness and to ensure that our systems evolve with our business. There were no changes in our internal control over financial reporting that occurred during the quarter ended December 31, 2003 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

INDEPENDENT AUDITORS' REPORT

The Board of Directors and Stockholders

Harvard Bioscience, Inc. and subsidiaries:

We have audited the accompanying consolidated balance sheets of Harvard Bioscience, Inc. and subsidiaries as of December 31, 2003 and 2002, and the related consolidated statements of operations, stockholders' equity and comprehensive income (loss), and cash flows for each of the years in the three-year period ended December 31, 2003. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of Harvard Bioscience, Inc. and subsidiaries as of December 31, 2003 and 2002, and the results of their operations and their cash flows for each of the years in the three-year period ended December 31, 2003 in conformity with accounting principles generally accepted in the United States of America.

As discussed in Note 4 to the consolidated financial statements, effective January 1, 2002, the Company adopted Statement of Financial Accounting Standards No. 142, "Goodwill and Other Intangible Assets".

/s/ KPMG LLP

February 13, 2004, except as to Note 19,

which is as of March 3, 2004

Boston, Massachusetts

HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

Consolidated Balance Sheets

	December 31, 2003	2002
Assets		
Current assets:		
Cash and cash equivalents (note 7)	$ 8,222,797	$ 15,313,280
Trade accounts receivable, net of reserve for uncollectible accounts of $416,734 and $144,058 a December 31, 2003 and 2002, respectively, (note 17)	19,074,634	13,916,563
Other receivables and other assets	1,279,465	478,566
Inventories (note 5)	24,679,131	15,467,268
Catalog costs	—	282,690
Prepaid expenses	2,022,424	1,882,943
Deferred tax asset (note 11)	499,882	1,072,943
Total current assets	55,778,333	48,414,253
Property, plant and equipment, net (notes 6 and 8)	6,745,819	5,918,029
Other assets:		
Deferred tax asset (note 11)	399,546	668,902
Amortizable intangible assets, net of accumulated amortization of $5,102,904 and $2,289,554 at December 31, 2003 and 2002, respectively (notes 3 and 4)	28,212,458	20,292,723
Goodwill and other indefinite lived intangible assets (notes 3 and 4)	36,341,532	31,052,981
Other assets (note 10)	951,710	1,236,613
Total other assets	65,905,246	53,251,219
Total assets	$ 128,429,398	$ 107,583,501
Liabilities		
Current liabilities:		
Current installments of long-term debt (note 7)	$ 398,186	$ 699,005
Trade accounts payable	6,456,768	5,524,688
Deferred revenue	2,079,712	1,458,703
Accrued income taxes payable	1,218,026	1,150,642
Accrued expenses (note 15)	4,984,203	7,362,343
Other liabilities	459,191	403,244
Total current liabilities	15,596,086	16,598,625
Long-term debt, less current installments (note 7)	12,787,259	399,965
Deferred income tax liability (note 11)	207,144	930,251
Other liabilities	960,364	1,273,433
Total long-term liabilities	13,954,767	2,603,649
Total liabilities	29,550,853	19,202,274
Commitments and contingencies (notes 7, 8, 16 and 18)		
Stockholders' equity (notes 10 and 12):		
Common stock, par value $.01 per share, 80,000,000 shares authorized; 34,796,463 and 34,692,050 shares issued and 30,132,685 and 30,031,266 shares outstanding at December 31, 2003 and 2002	347,966	346,921
Additional paid-in-capital - stock options	6,474,535	6,208,515
Additional paid-in-capital - common stock	165,974,484	165,413,193
Accumulated deficit	(78,591,366)	(82,850,958)
Accumulated other comprehensive income	5,340,671	894,431
Notes receivable	—	(963,130)
Treasury stock, 4,660,784 common shares, at cost	(667,745)	(667,745)
Total stockholders' equity	98,878,545	88,381,227
Total liabilities and stockholders' equity	$ 128,429,398	$ 107,583,501

See accompanying notes to consolidated financial statements.

HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

Consolidated Statements of Operations

	Years Ended December 31, 2003	2002	2001
Product revenues	$ 86,196,712	$ 56,343,610	$ 40,005,442
Research revenues	944,193	1,036,772	862,945
Total revenues (notes 13 and 17)	87,140,905	57,380,382	40,868,387
Costs and expenses:			
Cost of product revenues	43,730,823	28,823,765	20,179,762
General and administrative expense	10,882,406	9,187,125	7,000,638
Restructuring and severance related expense	—	783,824	459,925
Sales and marketing expense	15,378,115	8,435,145	4,840,468
Research and development expense	6,262,805	4,145,997	3,178,591
Stock compensation expense (note 12)	519,480	1,269,397	2,678,743
In-process research and development expense (note 3)	—	1,551,400	5,447,000
Amortization of goodwill and other intangibles (note 4)	2,702,260	1,542,759	1,743,821
Operating income (loss)	7,665,016	1,640,970	(4,660,561)
Other income (expense):			
Foreign currency gain (loss)	483,996	402,373	(99,566)
Interest expense	(327,229)	(104,175)	(6,869)
Interest income	175,985	445,674	1,358,554
Amortization of deferred financing costs	(8,934)	—	—
Other (note 18)	(752,105)	(36,497)	(10,023)
Other income (expense), net	(428,287)	707,375	1,242,096
Income (loss) before income taxes	7,236,729	2,348,345	(3,418,465)
Income taxes (note 11)	2,977,137	1,611,018	1,789,953
Net income (loss)	4,259,592	737,327	(5,208,418)
Net income (loss) available to common stockholders	$ 4,259,592	$ 737,327	$ (5,208,418)
Income (loss) per share (note 14):			
Basic	$ 0.14	$ 0.03	$ (0.20)
Diluted	$ 0.14	$ 0.03	$ (0.20)
Weighted average common shares:			
Basic	29,923,709	27,090,054	25,784,852
Diluted	30,711,782	27,597,564	25,784,852

See accompanying notes to consolidated financial statements.

HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

Consolidated Statements of Stockholders' Equity and Comprehensive Income (Loss)
Years Ended December 31, 2003, 2002 and 2001

	Number Of shares Outstanding	Common Stock	Additional Paid-in Capital - Stock Options	Additional Paid-in Capital - Common Stock	Accumulated Deficit	Accumulated Other Comprehensive Income (loss)	Notes Receivable	Treasury Stock	Total Stockholders' Equity (Deficit)
Balance at December 31, 2000	29,442,632	$ 294,426	$ 4,635,949	$ 128,594,672	$ (78,379,867)	$ (554,573)	$ (1,587,939)	$ (667,745)	$ 52,334,923
Issuance of common stock									
Underwriters overallotment	937,500	9,375	—	6,964,735	—	—	—	—	6,974,110
Business acquisitions	659,282	6,593	2,781,222	7,140,024	—	—	—	—	9,927,839
Stock option exercises	288,075	2,881	(4,419,439)	4,653,564	—	—	—	—	237,006
Stock purchase plan	11,884	119	—	102,108	—	—	—	—	102,227
Stock compensation expense	—	—	2,678,743	—	—	—	—	—	2,678,743
Accrued interest shareholder note	—	—	160,999	—	—	—	(160,999)	—	—
Comprehensive loss:									
Net loss	—	—	—	—	(5,208,418)	—	—	—	(5,208,418)
Translation adjustments	—	—	—	—	—	(234,561)	—	—	(234,561)
Total comprehensive loss									(5,442,979)
Balance at December 31, 2001	31,339,373	$ 313,394	$ 5,837,474	$ 147,455,103	$ (83,588,285)	$ (789,134)	$ (1,748,938)	$ (667,745)	$ 66,811,869
Issuance of common stock									
Business acquisitions	3,195,083	31,951	—	16,766,165	—	—	—	—	16,798,116
Stock option exercises	128,355	1,284	(998,857)	1,088,450	—	—	—	—	90,877
Stock purchase plan	29,239	292	—	103,475	—	—	—	—	103,767
Stock compensation expense	—	—	1,269,397	—	—	—	—	—	1,269,397
Shareholder note									
Accrued interest	—	—	100,501	—	—	—	(100,501)	—	—
Note repayment	—	—	—	—	—	—	886,309	—	886,309
Comprehensive income:									
Net income	—	—	—	—	737,327	—	—	—	737,327
Translation adjustments	—	—	—	—	—	2,526,789	—	—	2,526,789
Minimum pension liability adjustment, net of tax	—	—	—	—	—	(843,224)	—	—	(843,224)
Total comprehensive income									2,420,892
Balance at December 31, 2002	34,692,050	$ 346,921	$ 6,208,515	$ 165,413,193	$ (82,850,958)	$ 894,431	$ (963,130)	$ (667,745)	$ 88,381,227
Issuance of common stock									
Stock option exercises	47,089	471	(311,006)	376,003	—	—	—	—	65,468
Stock purchase plan	57,324	574	—	185,288	—	—	—	—	185,862
Stock compensation expense	—	—	519,480	—	—	—	—	—	519,480
Shareholder note									
Accrued interest	—	—	57,546	—	—	—	(57,546)	—	—
Note repayment	—	—	—	—	—	—	1,020,676	—	1,020,676
Comprehensive income:									
Net income	—	—	—	—	4,259,592	—	—	—	4,259,592
Translation adjustments	—	—	—	—	—	4,030,260	—	—	4,030,260
Minimum pension liability adjustment, net of tax	—	—	—	—	—	415,980	—	—	415,980
Total comprehensive income									8,705,832
Balance at December 31, 2003	34,796,463	$ 347,966	$ 6,474,535	$ 165,974,484	$ (78,591,366)	$ 5,340,671	$ —	$ (667,745)	$ 98,878,545

See accompanying notes to consolidated financial statements.

HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

Consolidated Statements of Cash Flows

	Years Ended December 31, 2003	2002	2001
Cash flows from operating activities:			
Net income (loss)	$ 4,259,592	$ 737,327	$ (5,208,418)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:			
Stock compensation expense	519,480	1,269,397	2,678,743
In-process research and development expense	—	1,551,400	5,447,000
Impairment loss on write down of intangible assets	—	—	162,090
Depreciation	2,276,215	1,114,125	622,090
Amortization of catalog costs	302,418	352,659	605,108
Loss (gain) on sale of fixed assets	11,135	—	(36)
Provision for bad debts	190,733	23,411	8,978
Amortization of goodwill and other intangibles	2,702,260	1,542,759	1,743,821
Amortization and write-off of deferred financing costs	8,934	—	—
Deferred income taxes	726,380	(555,462)	193,628
Changes in operating assets and liabilities, net of effects of business acquisitions:			
Increase in accounts receivable	(3,246,277)	(3,739,516)	(691,318)
(Increase) decrease in other receivables	(525,451)	1,106,591	37,433
(Increase) decrease in inventories	(1,075,518)	1,312,088	(637,426)
(Increase) decrease in prepaid expenses and other assets	70,832	(904,888)	11,272
Decrease in other assets	708,654	183,596	396,962
Decrease in trade accounts payable	(176,013)	(628,622)	(47,727)
Increase (decrease) in accrued income taxes payable	(333,479)	(486,034)	631,716
Increase (decrease) in accrued expenses	(3,066,403)	(1,353,735)	234,614
Increase (decrease) in deferred revenue	(910,441)	216,593	(1,204,386)
Decrease in other liabilities	(415,237)	(942,225)	(889,113)
Net cash provided by operating activities	2,027,814	799,464	4,095,032
Cash flows from investing activities:			
Additions to property, plant and equipment	(1,349,165)	(1,306,730)	(1,838,851)
Additions to catalog costs	(17,097)	(324,108)	(358,402)
Proceeds from sales of fixed assets	118,255	113	5,626
Acquisition of businesses, net of cash acquired	(21,149,360)	(10,735,975)	(17,984,128)
Net cash used in investing activities	(22,397,367)	(12,366,700)	(20,175,755)
Cash flows from financing activities:			
Proceeds from short-term debt	6,500,000	—	—
Repayments of short-term debt	(6,500,000)	—	
Net proceeds from long-term debt	12,488,573	—	4,325,519
Repayments of long-term debt	(706,764)	(3,744,850)	(507,395)
Net proceeds from issuance of common stock	1,272,007	600,374	5,880,318
Net cash provided (used) by financing activities	13,053,816	(3,144,476)	9,698,442
Effect of exchange rate changes on cash	225,254	639,537	(49,258)
Decrease in cash and cash equivalents	(7,090,483)	(14,072,175)	(6,431,539)
Cash and cash equivalents at the beginning of year	15,313,280	29,385,455	35,816,994
Cash and cash equivalents at the end of year	$ 8,222,797	$ 15,313,280	$ 29,385,455
Non cash investing and financing activity:			
Common stock and options issued for acquisitions	$ —	$ 17,278,689	$ 9,927,839
Supplemental disclosures of cash flow information:			
Cash paid for interest	$ 281,295	$ 111,812	$ 6,600
Cash paid for income taxes	$ 2,465,888	$ 2,087,454	$ 729,886

See accompanying notes to consolidated financial statements.

(1) Organization

On March 15, 1996, HAI Acquisition Corp. and its subsidiary, Guell Limited, purchased certain assets and assumed certain liabilities of the former Harvard Apparatus, Inc. and its subsidiary in the United Kingdom, Harvard Apparatus, Ltd. (the "Purchase") for cash consideration of approximately $3,342,000 (including $342,000 of acquisition related expenses). After the date of the Purchase, HAI Acquisition Corp. and Guell Limited legally changed their names to Harvard Apparatus, Inc. and Harvard Apparatus, Ltd., respectively. On November 29, 2000, Harvard Apparatus, Inc. changed its name to Harvard Bioscience, Inc.

Harvard Bioscience, Inc. and subsidiaries (the "Company") is a global developer, manufacturer and marketer of a broad range of specialized products, primarily scientific instruments, used to accelerate drug discovery research at pharmaceutical and biotechnology companies, universities and government laboratories worldwide. We sell our products to thousands of researchers in over 100 countries through our direct sales force, our catalog (and various other specialty catalogs), and through distributors, including Amersham Biosciences, Fischer Scientific and Cole-Parmer. We have sales and manufacturing operations in the United States, the United Kingdom, Germany, Austria and Belgium with sales facilities in France and Canada.

(2) Summary of Significant Accounting Policies

(a) Principles of Consolidation

The consolidated financial statements include the accounts of Harvard Bioscience, Inc. and its wholly-owned subsidiaries. All intercompany balances and transactions have been eliminated in consolidation.

(b) Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires the use of management's estimates. Such estimates include the determination and establishment of certain accruals and provisions, including those for inventory obsolescence, catalog cost amortization periods, tax and reserves for bad debts. In addition, certain estimates are required in order to determine the value of assets and in-process research and development associated with acquisitions. Estimates are also required to evaluate the recoverability of existing long lived and intangible assets, including goodwill. Actual results could differ from those estimates.

(c) Cash and Cash Equivalents

For purposes of the consolidated balance sheets and statements of cash flows, the Company considers all highly liquid instruments with original maturities of three months or less to be cash equivalents.

(d) Inventories

Inventories are stated at the lower of cost or market. Cost is determined using the first-in first-out (FIFO) method.

(e) Property, Plant and Equipment

Property, plant and equipment are stated at cost. Equipment under capital leases is stated at the present value of the minimum lease payments at the lease agreement date. Property, plant and equipment is depreciated using the straight-line method over the estimated useful lives of the assets as follows:

Buildings	40 years
Machinery and equipment	3-10 years
Computer equipment	3-7 years
Furniture and fixtures	5-10 years
Automobiles	4-6 years

Property and equipment held under capital leases and leasehold improvements are amortized using the straight line method over the shorter of the lease term or estimated useful life of the asset. Amortization of assets held under capital leases is included with depreciation expense.

(f) Catalog Costs

Significant costs of product catalog design, development and production are capitalized and amortized over the expected useful life of the catalog (usually one to three years).

(g) Income Taxes

Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. Deferred tax assets and liabilities are measured using enacted tax rates expected to be applied to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date.

(h) Foreign Currency Translation

All assets and liabilities of the Company's foreign subsidiaries are translated at exchange rates in effect at year-end. Income and expenses are translated at rates which approximate those in effect on the transaction dates. The resulting translation adjustment is recorded as a separate component of stockholders' equity in accumulated other comprehensive income (loss) in the consolidated balance sheets. Effective January 1, 2002, certain debt between the Company and its foreign subsidiaries is being treated as a long-term investment rather than as debt with repayment expected in the foreseeable future, as previously treated. For the years ended December 31, 2003 and 2002, the Company did not record a foreign currency gain in its consolidated statements of operations related to this intercompany debt. Instead the Company recorded the effect of the exchange rate fluctuation as a currency translation adjustment in accumulated other comprehensive income (loss) in stockholders' equity.

(i) Stock Based Compensation

The Company applies the intrinsic-value-based method of accounting prescribed by Accounting Principles Board (APB) Opinion No. 25, Accounting for Stock Issued to Employees, and related interpretations including Financial Accounting Standards Board ("FASB") Interpretation No. 44, Accounting for Certain Transactions involving Stock Compensation, an interpretation of APB Opinion No. 25, issued in March 2000, to account for its fixed-plan stock options. Under this method, compensation expense is recorded, using the graded method, on the date of grant only if the current market price of the underlying stock exceeded the exercise price. Statement of Financial Accounting Standards ("SFAS") No. 148, Accounting for Stock-Based Compensation Transition and Disclosure, an amendment of FASB Statement No. 123, provides alternative methods of transition for a voluntary change to the fair-value-based method of accounting for stock-based employee compensation plans under SFAS No. 123, Accounting for Stock Based Compensation, and amends the disclosure requirements of SFAS No. 123. As allowed by SFAS No. 148 and 123, the Company has elected to continue to apply the intrinsic-value-based method of accounting described above, and has adopted only the disclosure requirements of SFAS No. 148. The following table illustrates the effect on net income (loss) if the fair-value-based method had been applied to all outstanding awards in each period.

	2003	2002	2001
Net income (loss) available to common stockholders, as reported	$ 4,259,592	$ 737,327	$ (5,208,418)
Add: stock-based employee compensation expense included in reported net income, net of tax	519,480	1,222,076	2,622,726
Deduct: total stock-based employee compensation expense determined under fair-value based method for all rewards, net of tax	3,774,334	4,794,772	3,124,647
Pro forma net income (loss)	$ 1,004,738	$ (2,835,369)	$ (5,710,339)
Basic net income (loss) per share	$ 0.14	$ 0.03	$ (0.20)
Pro forma basic net income (loss) per share	$ 0.03	$ (0.10)	$ (0.22)
Diluted net income (loss) per share	$ 0.14	$ 0.03	$ (0.20)
Pro forma diluted net income (loss) per share	$ 0.03	$ (0.10)	$ (0.22)

(j) Income (Loss) Per Share

Basic income (loss) per share is computed by dividing the net income (loss) available to common stockholders by the weighted average number of shares of common stock outstanding during the periods presented. The computation of diluted income per share is similar to the computation of basic income 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. For 2001, diluted loss per share is the same as basic loss per share as the inclusion of common stock equivalents would be antidilutive.

(k) Comprehensive Income (Loss)

The Company follows SFAS No. 130, Reporting Comprehensive Income (Loss). SFAS No. 130 requires companies to report all changes in equity during a period, resulting from net income (loss) and transactions from non-owner sources, in a financial statement in the period in which they are recognized. The Company has chosen to disclose comprehensive income (loss), which encompasses, net income (loss), foreign currency translation adjustments and pension minimum additional liability adjustments, net of tax, in the consolidated statements of stockholders' equity. As of December 31, 2003, accumulated other comprehensive income consisted of cumulative foreign currency translation adjustments of $5,815,720 and minimum pension liability adjustment of $(475,049), net of tax. As of December 31, 2002, accumulated comprehensive income consisted of cumulative foreign currency translation adjustments of $1,737,655 and a minimum pension liability adjustment of $(843,224), net of tax.

(l) Revenue Recognition

The Company generally recognizes revenue upon shipment of product and/or performance of a service, such as installation or training. Revenue is recognized if persuasive evidence of an arrangement exists, the sales price is fixed or determinable, customer acceptance has occurred, collectability is reasonably assured and title and risk of loss have passed to the customer. The Company has no obligations to customers after the date products are shipped or installed, if applicable, other than pursuant to warranty obligations and service or maintenance contracts. The Company provides for the estimated costs to fulfill customer warranty obligations upon the recognition of the related revenue. The Company provides for the estimated amount of future returns upon shipment of products or installation, if applicable, based on historical experience. For long-term collaboration agreements, revenue is recognized based on the costs incurred, which are included as part of research and development expense, as the related work on the contracts progress.

(m) Goodwill and Other Intangibles

Goodwill represents the excess of costs over fair value of assets of businesses acquired. The Company fully adopted the provisions of SFAS No. 142, Goodwill and Other Intangible Assets, as of January 1, 2002. Goodwill and intangible assets acquired in a purchase business combination and determined to have an indefinite useful life are not amortized, but instead tested for impairment annually, or more frequently if events or changes in circumstances indicate that the asset might be impaired, in accordance with the provisions of SFAS No. 142. An impairment loss is recognized to the extent that the carrying amount exceeds the asset's fair value. SFAS No. 142 also requires that intangible assets with estimable useful lives be amortized over their respective estimated useful lives to their estimated residual values, and reviewed for impairment in accordance with SFAS No. 144, Accounting for Impairment or Disposal of Long-Lived Assets.

In connection with SFAS No. 142's transitional goodwill impairment evaluation, the Statement required the Company to perform an assessment of whether there was an indication that goodwill is impaired as of the date of adoption. To accomplish this, the Company was required to identify its reporting units and determine the carrying value of each reporting unit by assigning the assets and liabilities, including the existing goodwill and intangible assets, to those reporting units as of January 1, 2002. The Company was required to determine the fair value of each reporting unit and compare it to the carrying amount of the reporting unit within six months of January 1, 2002. To the extent the carrying amount of a reporting unit exceeded the fair value of the reporting unit, the Company would be required to perform the second step of the transitional impairment test, as this is an indication that the reporting unit goodwill may be impaired. The second step was not required as the Company identified one reporting unit, the fair value of which exceeded its carrying value. The Company has chosen the fourth quarter to perform its annual impairment test.

Prior to the adoption of SFAS No. 142, goodwill was amortized on a straight-line basis over the expected periods to be benefited, generally 5 to 15 years, and assessed for recoverability by determining whether the amortization of the goodwill balance over its remaining life could be recovered through undiscounted future operating cash flows of the acquired operation. All other intangible assets were amortized on a straight-line basis generally from 10 to 15 years. The amount of goodwill and other intangible asset impairment, if any, was measured based on projected discounted future operating cash flows using a discount rate reflecting the Company's average cost of funds.

(n) Impairment of Long-Lived Assets and Long-Lived Assets to be Disposed Of

SFAS No. 144 provides a single accounting model for long-lived assets to be disposed of. SFAS No. 144 also changes the criteria for classifying an asset as held for sale; broadens the scope of businesses to be disposed of that qualify for reporting as discontinued operations and changes the timing of recognizing losses on such operations. The Company adopted SFAS No. 144 on January 1, 2002. The adoption of SFAS No. 144 did not affect the Company's consolidated financial statements.

In accordance with SFAS No. 144, long-lived assets, such as property, plant, and equipment, and purchased intangibles subject to amortization, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated future cash flows, an impairment charge is recognized by the amount by which the carrying amount of the asset exceeds the fair value of the asset. Assets to be disposed of would be separately presented in the consolidated balance sheet and reported at the lower of the carrying amount or fair value less costs to sell, and are no longer depreciated. The assets and liabilities of a disposed group classified as held for sale would be presented separately in the appropriate asset and liability sections of the balance sheet.

Prior to the adoption of SFAS No. 144, the Company accounted for the impairment of long-lived assets in accordance with SFAS No. 121, Accounting for Impairment of Long-Lived Assets and for Long-Lived Assets to be Disposed Of.

(o) Fair Value of Financial Instruments

The carrying value of the Company's cash and cash equivalents, trade accounts receivable, trade accounts payable and accrued expenses approximate their fair values because of the short maturities of those instruments. The fair value, which approximates the carrying amount of the Company's long-term debt, is based on the amount of future cash flows associated with the debt discounted using the Company's current borrowing rate for similar debt instruments of comparable maturity.

(p) Recently Issued Accounting Pronouncements

In June 2001, SFAS No. 143, Accounting for Asset Retirement Obligations was issued. SFAS No. 143 applies to legal obligations associated with the retirement of certain tangible long-lived assets. This Statement is effective for fiscal years beginning after June 15, 2002. The Company adopted SFAS No. 143 on January 1, 2003. The adoption of this Statement did not have a material impact on the Company's consolidated results of operations or financial position.

In May 2002, SFAS No. 145, Rescission of FASB Statements No. 4, 44, and 64, Amendment of FASB Statement No. 13, and Technical Corrections, was issued. SFAS No. 145 which is effective for fiscal years beginning after May 15, 2002 rescinds SFAS No. 4, Reporting Gains and Losses from Extinguishment of Debt, SFAS No. 64, Extinguishments of Debt Made to Satisfy Sinking-Fund Requirements, and SFAS No. 44, Accounting for Intangible Assets of Motor Carriers. This Statement also amends SFAS No. 13, Accounting for Leases, to eliminate an inconsistency between the required accounting for sale-leaseback transactions. This Statement also amends other existing authoritative pronouncements to make various technical corrections, clarify meanings, or describe their applicability under changed conditions. The Company adopted SFAS No. 145 on January 1, 2003. The adoption of SFAS No. 145 did not have a material impact on the Company's consolidated results of operations or financial position.

In July 2002, SFAS No. 146, Accounting for Costs Associated with Exit or Disposal Activities, was issued. SFAS No. 146 is based on the fundamental principle that a liability for a cost associated with an exit or disposal activity should be recorded when it (1) is incurred, and (2) can be measured at fair value. SFAS No. 146 is effective for exit and disposal activities initiated after December 31, 2002. The Company adopted SFAS No. 146 on January 1, 2003. The adoption of this Statement did not have a material impact on the Company's consolidated results of operations or financial position.

In November 2002, FASB issued Interpretation No. 45, Guarantor's Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness to Others, an interpretation of FASB Statements No. 5, 57 and 107 and a rescission of FASB Interpretation No. 34. This Interpretation elaborates on the disclosures to be made by a guarantor in its interim and annual financial statements about its obligations under guarantees issued. The Interpretation also clarifies that a guarantor is required to recognize, at inception of a guarantee, a liability for the fair value of the obligation undertaken. The initial recognition and measurement provisions of the Interpretation are applicable to guarantees issued or modified after December 31, 2002. The disclosure requirements are effective for financial statements of interim and annual periods ending after December 31, 2002. The Company adopted this Interpretation on January 1, 2003 and there was no material impact on the Company's consolidated results of operations or financial position.

In December 2002, the FASB issued SFAS No. 148, Accounting for Stock-Based Compensation - Transition and Disclosure, an amendment of FASB Statement No. 123. This Statement amends SFAS No. 123, Accounting for Stock-Based Compensation, to provide alternative methods of transition for a voluntary change to the fair value method of accounting for stock-based employee compensation. In addition, this Statement amends the disclosure requirements of SFAS No. 123 to require prominent disclosures in both annual and interim financial statements.

In December 2003, the FASB issued FASB Interpretation No 46 (revised December 2003) ("FIN 46R"), Consolidation of Variable Interest Entities, which addresses how a business enterprise should evaluate whether it has a controlling financial interest in an entity through means other than voting rights and accordingly should consolidate the entity. FIN 46R replaces FASB Interpretation No. 46, Consolidation of Variable Interest Entities, which was issued in January 2003. The Company will be required to apply FIN 46R to variable interests in VIEs created after December 31, 2003. For variable interests in VIEs created before January 1, 2004, the Interpretation will be applied beginning on January 1, 2005. For any VIEs that must be consolidated under FIN 46R that were created before January 1, 2004, the assets, liabilities and noncontrolling interests of the VIE initially would be measured at their carrying amounts with any difference between the net amount added to the balance sheet and any previously recognized interest being recognized as the cumulative effect on an accounting change. If determining the carrying amounts is not practicable, fair value at the date FIN 46R first applies may be used to measure the assets, liabilities and noncontrolling interest of the VIE. The Company does not believe the adoption of this Interpretation will have a material impact on its consolidated results of operations or financial position.

In November, 2002, the Emerging Issues Task Force ("EITF") reached a consensus on Issue No. 00-21, Revenue Arrangements with Multiple Deliverables. EITF Issue No. 00-21 addresses the accounting, by a vendor, for contractual arrangements in which multiple revenue-generating activities will be performed by the vendor. The Issue addresses when and, if so, how an arrangement involving multiple deliverables should be divided into separate units of accounting. The Issue also addresses how the arrangement consideration should be measured and allocated to the separate units of accounting in the arrangement. This Issue otherwise does not change applicable revenue recognition criteria. Companies are required to adopt this consensus for fiscal periods beginning after June 15, 2003. Companies may apply this consensus prospectively to new arrangements initiated after the date of adoption or as a cumulative catch adjustment. The Company prospectively adopted the provisions of the EITF's consensus on this Issue on July 1, 2003 and has determined that the application did not have a material impact on the Company's consolidated results of operations or financial position as of and for the six months ended December 31, 2003.

In May 2003, the FASB issued Statement No. 150, Accounting for Certain Financial Instruments with Characteristics of Both Liabilities and Equity. This Statement requires that certain instruments that were previously classified as equity on a company's statement of financial position now be classified as liabilities. The Statement is effective for financial instruments entered into or modified after May 31, 2003, and otherwise is effective at the beginning of the first interim period beginning after June 15, 2003. The Company has determined that application of this Statement did not have a material impact on the Company's consolidated results of operations or financial position.

In December 2003, FASB Statement No. 132 (revised), Employers' Disclosures about Pensions and Other Postretirement Benefits, was issued. SFAS No. 132 (revised) prescribes employers' disclosures about pension plans and other postretirement benefit plans; it does not change the measurement or recognition of those plans. The Statement retains and revises the disclosure requirements contained in the original SFAS No. 132. It also requires additional disclosures about the assets, obligations, cash flows, and net periodic benefit cost of defined benefit pension plans and other postretirement benefit plans. The Statement generally is effective for fiscal years ending after December 15, 2003, however all of the Company's pension plans covered by this Statement are outside of the United States. Therefore, the Company will be required to adopt the disclosure requirements of the Statement as of December 31, 2004.

(3) Acquisition of Businesses

On May 1, 2001, the Company acquired substantially all the assets and certain liabilities of Warner Instruments Corporation ("Warner Instruments"), a developer, manufacturer and marketer of cell and tissue electro-physiology products. Cash consideration of $2,700,000 (including approximately $69,000 of acquisition related expenses) was paid for the assets. The purchase price which has been allocated on the basis of fair market value of assets acquired using the purchase method of accounting resulted in the following allocation: current assets of $951,000, property, plant and equipment of $34,000, purchased intangibles of $1.9 million which included: trade name of $320,000, workforce in place of $380,000, acquired technologies of $1.0 million, patents of $9,000, in-process research and development of $159,000, goodwill of $136,000 and liabilities assumed of $234,000.

On May 31, 2001, the Company acquired all of the outstanding common and preferred shares of Union Biometrica, Inc. ("Union Biometrica") for $17.5 million. Union Biometrica develops, manufactures and markets instruments that enable high throughput analysis and sorting of model organisms used in drug discovery research. The transaction was accounted for using the purchase method of accounting. The aggregate purchase price of $17.5 million, net of cash acquired of $562,000, included 659,282 common shares and 263,202 common stock options that had an estimated fair value of $10 million. The purchase price which has been allocated on the basis of fair market value of assets acquired and liabilities assumed resulted in the following allocation: current assets of $0.5 million, property, plant and equipment of $0.2 million, other assets of $1.6 million, purchased intangibles of $10.1 million, which included work force in place of $1.4 million, acquired technologies of $8 million and trademarks of $0.8 million, in-process research and development of $5.3 million, goodwill of $6.2 million and liabilities assumed of $6.5 million.

On June 29, 2001, the Company acquired all the stock of International Market Supply, Ltd ("IMS"), a company engaged in developing, manufacturing and marketing respiration products. Cash consideration of approximately $1,600,000 (including approximately $114,000 of acquisition related expenses) was paid for the stock. The purchase price has been allocated on the basis of fair market value of assets acquired using the purchase method of accounting resulted in an allocation of approximately $1,402,000 to goodwill, $462,000 to current assets, $39,000 to property, plant and equipment and $277,000 in liabilities assumed.

On November 1, 2001, the Company acquired all the stock of Scie-Plas, Ltd., a designer, manufacturer and marketer of electrophoresis tools for molecular biology. Cash consideration of $4,151,000 (including approximately $99,000 of acquisition related expenses) was paid for the stock. The purchase price was allocated as follows: $3,926,000 to goodwill and other intangibles, $327,000 to property, plant and equipment, current assets of $804,000, other assets of $23,000 and liabilities assumed of $929,000.

On December 6, 2001, the Company acquired all of the stock of Asys Hitech GmbH, a designer, manufacturer and marketer of low volume, high throughput, liquid dispensers used for high throughput screening in drug discovery research. Cash consideration of $2,043,000 (including approximately $143,000 of acquisition related expenses) was paid for the stock. The purchase price has been allocated as follows: $1,983,000 to goodwill and other intangibles, $23,000 to property, plant and equipment, current assets of $512,000, other assets of $39,000 and liabilities assumed of $514,000.

On July 1, 2002, the Company acquired all of the stock of Walden Precision Apparatus ("WPA"), a designer, manufacturer and marketer of low cost diode-array spectrophotometers for cash consideration of $1,466,000 (including approximately $101,000 of acquisition related expenses). As of December 31, 2003, cash consideration of approximately $343,000 has not been paid (see Note 7). The allocation of the purchase price is as follows: $1,671,000 to goodwill and other intangibles, $110,000 to property, plant and equipment, current assets of $599,000 and liabilities assumed of $914,000.

On October 25, 2002, the Company acquired all of the outstanding common stock of Genomic Solutions, Inc. for approximately $27.0 million, including $0.7 million in related acquisition costs. The results of operations have been included in the consolidated financial statements since the date of acquisition. Genomic Solutions develops, manufactures and sells products in the fields of proteomics, high-throughput screening and DNA microarray systems including products for protein sample preparation and analysis in conjunction with mass spectrometry; high-speed, noncontact assay preparation for high-throughput screening and high-fidelity microarray processing and analysis. As a result of the acquisition, the Company is expected to further its strategy of providing a broad range of specialized products in niche markets focused on the bottlenecks in drug discovery.

The aggregate purchase price of $27.0 million included 3,195,083 common shares that had an estimated fair value of $17.3 million. The fair value of the stock was estimated using the weighted average market value of the shares for the two days prior and three days subsequent to the announcement of the acquisition on July 17, 2002. The amount recorded in the consolidated statement of stockholders equity and used in the purchase price allocation below is net of approximately $481,000 of costs associated with registering and issuing these shares. As of December 31, 2002, the Company had not finalized the allocation of the purchase price. The final purchase price which has been allocated on the basis of fair market value of assets acquired and liabilities assumed at the date of acquisition resulted in the following allocation which is net of cash acquired of $156,700 and in-process research and development of $1,551,400:

	(in thousands)
Current assets	$ 12,783
Property, plant and equipment	1,949
Long-term assets	525
Deferred tax asset, net	2,057
Goodwill and other indefinite lived intangibles	10,494
Intangible assets	5,367
Total assets acquired	$ 33,175
Current liabilities	(7,848)
Long-term debt	(70)
Total liabilities assumed	(7,918)
Net assets acquired	$ 25,257

The $5.4 million of acquired intangible assets was allocated to existing products and technology. In the fourth quarter of 2002, $1.6 million of in-process research and development was expensed and $0.5 million of fair value adjustments related to backlog and inventory was expensed through cost of goods sold for orders that were on backlog at the date of acquisition but had been sold prior to December 31, 2002. The remaining $0.2 million of fair value adjustments related to backlog and inventory was expensed through cost of goods sold during 2003 for orders that were on backlog at the date of acquisition and sold in 2003.

On January 31, 2003, the Company acquired substantially all of the assets of the BTX division of Genetronics Biomedical Corporation for $4.0 million in cash (including $0.3 million in acquisition related costs) and the assumption of $0.2 million of liabilities. The results of operations have been included in the consolidated financial statements since the date of acquisition. BTX designs, develops, manufactures and distributes electroporation products During the third quarter of 2003, the Company completed the valuation of assets and liabilities acquired and a final purchase price allocation was prepared and is included as part of these consolidated financial statements. The purchase price which has been allocated on the basis of fair market value of assets acquired and liabilities assumed at the date of acquisition resulted in the following allocation: $1.7 million to existing technology, current assets of $1.4 million, $1.1 million to goodwill and other indefinite lived intangibles and liabilities assumed of $0.2 million. During 2003, $268,000 of fair value adjustments related to BTX's backlog and inventory was expensed through cost of product revenues for orders that were sold since the date of the acquisition.

On March 12, 2003, the Company, through its Genomic Solutions subsidiary, acquired substantially all of the assets of Genomic Instrumentation Services, d/b/a/ GeneMachines for $8.6 million in cash (including $0.3 million in acquisition related expenses) and the assumption of $2.0 million of liabilities. The acquisition was partially funded by a $6.0 million bridge loan entered into on March 12, 2003, with Brown Brothers Harriman and Co. In November, 2003, the bridge loan was paid in full with funds available from the $20 million credit facility established with Brown, Brothers Harriman and Co (see Note 7). The results of operations have been included in the consolidated financial statements since the date of acquisition. GeneMachines designs, develops, manufactures and distributes high throughput instrumentation for DNA and protein microarray production, nucleic acid sample preparation and DNA synthesis. The acquisition of GeneMachines strengthens the Company's genomic product offering, and when coupled with genomic product line of the Company's Genomic Solutions subsidiary, provides a complementary set of products in the DNA microarray systems and instrumentation market.

During the third quarter of 2003, the Company completed the valuation of GeneMachines' assets and liabilities acquired and a final purchase price allocation was prepared and is included as part of these consolidated financial statements. The purchase price which has been allocated on the basis of fair market value of assets acquired and liabilities assumed at the date of acquisition resulted in the following allocation:

	(in thousands)
Current assets	$ 2,942
Property, plant and equipment	721
Long-term assets	45
Goodwill and other indefinite lived intangibles	3,087
Amortizable intangible assets	3,736
Total assets acquired	$ 10,531
Current liabilities	$ (1,980)
Total liabilities assumed	(1,980)
Net assets acquired	$ 8,551

The $3.7 million of acquired amortizable intangible assets was allocated to existing products and technology. During 2003, $217,800 of fair value adjustments related to GeneMachines' backlog and inventory was expensed through cost of product revenues for orders that were sold since the date of the acquisition.

On September 19, 2003, the Company, through its Genomic Solutions subsidiary, acquired substantially all the assets of BioRobotics, Ltd., a subsidiary of Apogent Technologies Inc. for approximately $3.6 million payable partly in cash and partly in the assumption of certain limited liabilities (including $0.4 million in acquisition related expenses). The results of operations have been included in the consolidated financial statements since the date of acquisition. BioRobotics designs, develops, manufactures and distributes life science instrumentation for DNA microarray manufacturing and colony picking. As of December 31, 2003, the Company has not finalized the purchase price allocation. A preliminary estimate of the allocation was prepared and included as part of these consolidated financial statements as the final valuation of the assets and liabilities acquired has not yet been completed. The preliminary allocation of the purchase price is as follows: $1.4 million to existing technology, current assets of $2.3 million, $0.3 million to property, plant and equipment, $0.3 million to goodwill and liabilities assumed of $0.7 million. During 2003, $128,154 of fair value adjustments related to BioRobotics' acquired backlog and inventory was expensed through cost of product revenues for orders that were sold since the date of the acquisition. We anticipate that the final valuation of assets and liabilities acquired will be completed during the second quarter of 2004.

On November 24, 2003, the Company acquired certain assets and liabilities of the Hoefer one-dimensional gel electrophoresis business of Amersham Biosciences Corp., including the Hoefer brand name for approximately $5.4 million (including acquisition costs of approximately $0.4 million). The results of operations have been included in the consolidated financial statements since the date of acquisition. As of December 31, 2003, the Company has not finalized the purchase price allocation. A preliminary estimate of the allocation was prepared and included as part of these consolidated financial statements as the final valuation of the assets and liabilities acquired has not yet been completed. The preliminary allocation of the purchase price is as follows: $2.5 million to existing technology, current assets of $1.8 million, $0.5 million to property, plant and equipment and $0.6 million to a distribution agreement. During 2003, $68,074 of fair value adjustments related to Hoefer's backlog and inventory was expensed through cost of product revenues for orders that were sold since the date of the acquisition. We anticipate that the fair value valuation of assets and liabilities acquired will be completed during the second quarter of 2004.

All acquisitions have been accounted for by the purchase method of accounting for business combinations. Accordingly, the accompanying consolidated statements of operations do not include any revenues or expenses related to these acquisitions prior to the respective acquisition dates.

In connection with the acquisition of Warner Instruments, Union Biometrica and Genomic Solutions, certain research and development projects acquired were determined to have no alternative future use. Accordingly, $159,000, $5,288,000 and $1,551,400, respectively, of purchased in-process research and development was expensed in the second quarter of 2001 for Warner and Union Biometrica and the fourth quarter of 2002 for Genomic Solutions. The amount was established by identifying research projects for which technological feasibility had not been established and for which no alternative future uses existed. The value of the projects identified to be in progress were determined by estimating future cash flows from the projects once commercially feasible, discounting net cash flows back to their present value and then applying a percentage of completion to the calculated value. The discount rate used averaged 25% to 44% for the projects identified. Development of the technologies remains a substantial risk to the Company due to factors including the remaining effort to achieve technological feasibility, rapidly changing customer markets and competitive threats from other companies. Additionally, the value of other intangible assets acquired may become impaired.

The following unaudited pro forma results of operations gives effect to the acquisitions of GeneMachines and BioRobotics as if they had occurred as of January 1, 2002. Pro forma information related to the BTX and Hoefer acquisitions is not provided as the acquisitions are not material to the consolidated financial statements. Such pro forma information reflects certain adjustments including amortization of goodwill and income tax effect. The pro forma information does not necessarily reflect the results of operations that would have occurred had the acquisitions taken place as described and is not necessarily indicative of results that may be obtained in the future.

	Years Ended December 31, 2003	2002
	(Unaudited, in 000's except per share data)	
Pro forma revenues	$ 93,030	$ 74,891
Pro forma net income (loss)	$ 3,623	$ (1,153)
Pro forma net income (loss) per share:		
Basic	$ 0.12	$ (0.04)
Diluted	$ 0.12	$ (0.04)
Pro forma weighted average common shares:		
Basic	29,924	27,090
Diluted	30,712	27,090

(4) Goodwill and Other Intangible Assets

On January 1, 2002, the Company fully adopted SFAS No. 142.As a result of the adoption, goodwill and other indefinite-lived intangible assets are no longer being amortized, but are subject to annual impairment reviews, or more frequently, if events or circumstances indicate there may be an impairment. During the second quarter of 2002, the Company completed the implementation impairment review as required. The review concluded there was no impairment of goodwill at the time of implementation. On December 31, 2003 and 2002 the Company completed its annual goodwill impairment tests and concluded there was no impairment.

With the adoption of SFAS No. 142, the Company ceased amortization of goodwill and other indefinite lived intangible assets as of January 1, 2002. The following table presents the annual results of the Company assuming SFAS 142 was adopted on January 1, 2001.

	Years Ended December 31, 2003	2002	2001
Net income (loss) available to common shareholders	$ 4,259,592	$ 737,327	$ (5,208,418)
Add back: goodwill amortization, net of tax	—	—	811,714
Adjusted net income (loss)	$ 4,259,592	$ 737,327	$ (4,396,704)
Basic and diluted earnings per share:			
Net income (loss)	$ 0.14	$ 0.03	$ (0.20)
Goodwill amortization, net of tax	—	—	0.03
Adjusted net income (loss)	$ 0.14	$ 0.03	$ (0.17)

Intangible assets consist of the following:

	December 31, 2003		2002	
	Gross Carrying Value	Accumulated Amortization	Gross Carrying Value	Accumulated Amortization
Amortizable intangible assets:				
Existing technology	$30,980,719	$ 4,709,853	$20,784,949	$ 2,019,453
Tradename	1,704,643	381,101	1,788,328	269,101
Distribution agreement	621,000	10,350	—	—
Patents	9,000	1,600	9,000	1,000
Total Amortizable Intangible Assets	$33,315,362	$ 5,102,904	$22,582,277	$ 2,289,554
Unamortizable intangible assets:				
Goodwill and other indefinite lived intangible assets	$36,341,532	—	$31,052,981	—
Total Intangible Assets	$69,656,894	$ 5,102,904	$53,635,258	$ 2,289,554

On January 31, 2003, the Company acquired intangible assets of approximately $2.8 million in connection with the acquisition of BTX consisting of approximately $1.7 million of amortizable assets and $1.1 million of goodwill and other indefinite lived intangibles. On March 12, 2003, the Company acquired intangible assets of approximately $6.8 million in connection with the acquisition of GeneMachines consisting of approximately $3.7 million of amortizable assets and $3.1 million of goodwill and other indefinite lived intangibles. On September 19, 2003, the Company acquired intangible assets of approximately $1.7 million in connection with the acquisition of BioRobotics consisting of approximately $1.4 million of amortizable assets and $0.3 million of goodwill. On November 24, 2003, the Company acquired amortizable intangible assets of approximately $3.1 million in connection with the acquisition of Hoefer.

Intangible asset amortization expense was approximately $2,702,000 and $1,543,000 for the years ended December 31, 2003 and 2002, respectively. As a result of the Company completing its adoption of SFAS No. 142, there have been no changes to amortizable lives or methods other than goodwill and indefinite lived intangible assets associated with acquisitions consummated prior to June 30, 2001 is no longer amortized. Amortization expense of existing amortizable intangible assets is estimated to be $3.3 million for each of the years ending December 31, 2004, 2005, 2006, 2007 and 2008. The change in goodwill and other intangible assets during 2003 is also the result of foreign currency translation adjustments and adjustments resulting from final purchase price allocations for certain 2002 acquisitions.

(5) Inventories

Inventories consist of the following:

	December 31, 2003	2002
Finished goods	$ 8,159,712	$ 6,057,012
Work in process	4,326,707	1,878,663
Raw materials	12,192,712	7,531,593
	$ 24,679,131	$ 15,467,268

(6) Property, Plant and Equipment

Property, plant and equipment consists of the following:

	December 31, 2003	2002
Land, Building and leasehold improvements	$ 1,306,219	$ 1,104,153
Machinery and equipment	6,392,969	4,459,426
Computer equipment	2,523,352	2,185,125
Furniture and fixtures	1,566,917	1,040,214
Automobiles	241,807	254,606
	12,031,265	9,043,524
Less accumulated depreciation	(5,285,446)	3,125,495
	$ 6,745,819	$ 5,918,029

(7) Long-Term Debt

Long-term debt consists of the following:

	December 31, 2003	December 31, 2002
Notes payable	$ 13,088,026	$ 871,532
Capital lease obligations (note 8)	97,419	227,438
	13,185,445	1,098,970
Less current installments	398,186	699,005
	$ 12,787,259	$ 399,965

On November 21, 2003, we entered into a $20 million revolving credit facility with Brown Brothers Harriman (the "bank"). The credit facility bears an interest rate equal to the bank's base rate which at December 31, 2003 was equal to the prime rate of 4% and has a three year term. The credit facility contains covenants relating to net income, debt service coverage and cash flow coverage. The Company is currently in compliance with such covenants. The credit facility requires the Company to seek approval from the bank prior to any acquisition where the purchase price will exceed $10 million in stock or $6 million in cash and is collateralized by a percentage of the equity interests in the Company's foreign subsidiaries. As of December 31, 2003, we have borrowed $12,744,944 against the credit facility, in part to repay the $6.5 million outstanding on the bridge notes entered into with Brown Brothers Harriman in 2003 in anticipation of closing the revolving credit facility. We are assessed a .25% fee on the unused portion of the credit facility.

On July 1, 2002, in connection with the purchase of the outstanding shares of Walden Precision Apparatus ("WPA"), the Company assumed liabilities of $343,000 related to amounts owed to shareholders of WPA. The entire debt is due to be paid in the first half of 2004.

On December 5, 2001, in connection with the purchase of the outstanding shares of Asys Hitech, GmbH, the Company assumed a liability of $278,000 related to amounts owed to a shareholder of Asys Hitech. Approximately $167,000 of this debt was paid in April, 2002, with the remaining $111,000 paid in December 2002.

In connection with the acquisition of Asys Hitech, payment of approximately $200,000 of the purchase price was deferred until settlement of the final statement of net assets. Final settlement of the statement of net assets occurred in 2002, resulting in a reduction of the purchase price of approximately $43,000. The balance of $157,000 was paid in September, 2003.

On November 1, 2001, at the request of the sellers of Scie-Plas Ltd., the Company entered into a loan agreement with the sellers to defer payment of approximately $3.9 million of the purchase price for the outstanding shares of Scie-Plas Ltd. (see note 3). The loan is secured with cash in an equal amount and accrues interest at the same rate of interest earned by the cash. Approximately $3.5 million of the note was paid in November, 2002, and the remaining $0.4 million was paid in May 2003.

As of December 31, 2003, the debt repayment schedule, excluding capital lease payments, is as follows:

2004	$ 343,082
2005	—
2006	12,744,944
2007 and thereafter	—
	$ 13,088,026

(8) Leases

The Company leases automobiles and equipment under various leases that are classified as capital leases. The carrying value of automobiles and equipment under capital leases at December 31, 2003 and 2002 was $166,359 and $254,711, respectively, which is net of $142,097 and $74,835, respectively, of accumulated depreciation.

The Company has noncancelable operating leases for office and warehouse space expiring at various dates through 2009. Rent expense for the years ended December 31, 2003, 2002 and 2001 was approximately $2,279,280, $2,209,000 and $744,000, respectively.

Future minimum lease payments for both capital and operating leases, with initial or remaining terms in excess of one year at December 31, 2003, are as follows:

	Capital Leases	Operating Leases
2004	$ 69,109	$ 2,094,427
2005	23,704	1,149,381
2006	21,039	693,600
2007	—	513,353
2008	—	388,210
Thereafter	—	85,225
Net minimum lease payments	$ 113,852	$ 4,924,196
Less amount representing interest	16,432	
Present value of net minimum lease payments	$ 97,419	

(9) Related Party Transactions

The Company holds a promissory note in the amount of $51,310 for amounts owed by Jeffrey Williams, the President of the Company's Genomic Solutions subsidiary and a member of the Company's Board of Directors. The note was assumed by the Company in connection with the acquisition of Genomic Solutions. The note has a five year maturity. The note, with an original principal amount of $40,000 and accrued interest of $11,310, is due on the earlier of (i) February 2005 or (ii) the termination of Mr. Williams' employment with the Company.

(10) Employee Benefit Plans

The Company sponsors profit sharing retirement plans for its U.S. employees, which includes an employee savings plan established under Section 401(k) of the U.S. Internal Revenue Code (the "401(k) Plan"). The 401(k) plan covers substantially all full-time employees who meet certain eligibility requirements. Contributions to the profit sharing retirement plan are at the discretion of management. For the years ended December 31, 2003, 2002, and 2001, the Company contributed approximately $289,000, $175,000 and $142,000, respectively, to the plans.

Certain of the Company's subsidiaries in the United Kingdom (UK), Harvard Apparatus Limited, and Biochrom Limited maintain contributory, defined benefit pension plans for substantially all of their employees.

The components of the Company's pension expense follows:

	Years Ended December 31, 2003	2002	2001
Components of net periodic benefit cost:			
Service cost	$ 348,740	$ 399,779	$ 390,223
Interest cost	501,725	458,614	418,178
Expected return on plan assets	(556,010)	(543,096)	(512,564)
Net amortization loss	143,115	39,224	17,581
Net periodic benefit cost	$ 437,570	$ 354,521	$ 313,418

The funded status of the Company's defined benefit pension plans and the amount recognized in the consolidated balance sheets at December 31, 2003 and 2002 follows:

	2003	2002
Change in benefit obligation:		
Balance at beginning of year	$ 8,785,367	$ 7,272,720
Service cost	348,740	399,779
Interest cost	501,725	458,614
Participants' contributions	174,370	90,516
Actuarial loss	353,675	67,887
Benefits paid	(194,110)	(300,211)
Currency translation adjustment	1,084,954	796,062
Balance at end of year	$ 11,054,721	$ 8,785,367
Change in fair value of plan assets:		
Balance at beginning of year	$ 6,825,925	$ 6,442,800
Actual return on plan assets	1,014,965	(316,806)
Participants' contributions	174,370	90,516
Employer contributions	537,915	310,772
Benefits paid	(194,110)	(300,211)
Expenses paid	(101,990)	(48,275)
Currency translation adjustment	886,733	647,129
Balance at end of year	$ 9,143,808	$ 6,825,925

	Years Ended December 31, 2003	2002
Funded status	$ (1,910,913)	$ (1,959,442)
Unrecognized net loss	2,312,741	2,290,299
Net amount recognized	$ 401,828	$ 330,857

The amounts recognized in the consolidated balance sheets consist of:

	2003	2002
Prepaid benefit cost	$ 401,828	$ 330,857
Minimum pension liability	(678,642)	(1,204,575)
Accumulated other comprehensive loss	475,049	843,224
Deferred tax asset	203,593	361,351
Net amount recognized	$ 401,828	$ 330,857

The weighted average assumptions used in determining the net pension cost for the Company's plans follows:

	Years Ended December 31, 2003	2002	2001
Weighted average assumptions:			
Discount rate	5.5%	5.5%	6.0%
Expected return on assets	7.2%	7.7%	8.0%
Rate of compensation increase	3.75%	3.25%	4.0%

(11) Income Taxes

Income tax expense (benefit) attributable to income (loss) from continuing operations for the years ended December 31, 2003, 2002 and 2001 consisted of:

	Years Ended December 31, 2003	2002	2001
Current income tax expense (benefit):			
Federal and state	$ 121,252	$ (21,165)	$ (158,835)
Foreign	2,736,575	2,187,645	1,755,161
	2,857,827	2,166,480	1,596,326
Deferred income tax (benefit) expense:			
Federal and state	(274,626)	(141,450)	396,038
Foreign	393,936	(414,012)	(202,411)
	119,310	(555,462)	193,627
Total income tax expense	$ 2,977,137	$ 1,611,018	$ 1,789,953

The income tax benefits derived from certain stock-based compensation, amounting to $0, $0 and $121,275 for the years ended December 31, 2003, 2002 and 2001, respectively, were allocated to stockholders' equity.

Income tax expense for the periods ended December 31, 2003, 2002 and 2001 differed from the amount computed by applying the U.S. federal income tax rate of 34% to pretax income (loss) as a result of the following:

	Years Ended December 31, 2003	2002	2001
Computed "expected" income tax expense (benefit)	$ 2,460,488	$ 798,437	$ (1,162,278)
Increase in income taxes resulting from:			
Foreign tax rate and regulation differential	118,672	65,151	195,561
State income taxes, net of federal income tax benefit	(53,312)	29,613	(73,834)
Foreign trading gross receipts tax benefit	(51,680)	(76,776)	(30,195)
Foreign Sourced US income	310,098	—	—
Stock compensation expense in excess of allowable tax benefits on exercise of options	167,528	382,840	826,487
Nondeductible acquisition goodwill, trademark and workforce	—	—	127,234
Nondeductible in-process research and development	—	527,476	1,851,980
Nondeductible acquisition related other	354,245	—	—
Federal tax expense differential from prior year tax	83,496	(126,640)	(31,381)
Tax credits	(356,582)	(203,399)	—
Change in valuation allowance allocated to income tax expense	(220,147)	220,147	—
Other	164,331	(5,831)	86,379
Total income tax expense	$ 2,977,137	$ 1,611,018	$ 1,789,953

Income tax expense is based on the following pre-tax income (loss) for the years ended December 31, 2003, 2002 and 2001:

	Years Ended December 31, 2003	2002	2001
Domestic	$ (1,621,622)	$ (2,676,602)	$ (7,408,456)
Foreign	8,858,351	5,024,947	3,989,991
	$ 7,236,729	$ 2,348,345	$ (3,418,465)

The tax effects of temporary differences that give rise to significant components of the deferred tax assets and deferred tax liabilities at December 31, 2003 and 2002 are as follows:

	2003	2002
Deferred tax assets:		
Accounts receivable	$ 285,222	$ 283,466
Inventory	1,248,777	713,333
Operating loss and credit carryforwards	13,872,390	18,209,525
Accrued expenses	63,589	108,463
Goodwill and other intangibles	167,453	893,848
Property, plant and equipment	166,898	166,898
Minimum pension liability	203,593	361,351
Other accrued liabilities	1,457,840	1,316,909
Total gross deferred tax assets	17,465,762	22,053,794
Less: valuation allowance	(9,840,929)	(15,160,201)
Deferred tax assets	7,624,833	6,893,593
Deferred tax liabilities:		
Property, plant and equipment	195,782	174,599
Intangible assets	6,551,011	5,907,400
Other accrued liabilities	185,756	—
Total deferred tax liabilities	6,932,548	6,081,999
Net deferred tax assets	$ 692,284	$ 811,594

The amount recorded as gross deferred tax assets as of December 31, 2003 and December 31, 2002 represents the amount of tax benefits of existing deductible temporary differences or carryforwards that are more likely than not to be realized through the generation of sufficient future taxable income within the carryforward period. The Company believes that a portion of the gross deferred tax asset at December 31, 2003 will more likely than not be realized in the carryforward period. Management reviews the recoverability of deferred tax assets during each reporting period.

At December 31, 2003, the Company had federal and state net operating loss carryforwards available to offset future taxable income of approximately $32,302,000 the federal operating loss carryforwards will begin to expire in 2012. Furthermore, the Company had foreign operating loss carryforwards to offset future taxable income of approximately $1,477,000 which begin to expire in 2006. The Company also had general business and minimum tax credit carryforwards available to reduce future regular income taxes of approximately $995,000 and $65,000, respectively, which begin to expire in 2010. Utilization of the net operating losses and tax credits may be subject to an annual limitation imposed by change in control provisions of Section 382 of the Internal Revenue Code and similar state provisions.

In accordance with SFAS No. 109, Accounting for Income Taxes, the accounting for the tax benefits of acquired deductible temporary differences which are not recognized at the acquisition date because a valuation allowance may be established and recognized subsequent to the acquisitions, will be applied first to reduce to zero, any goodwill and other noncurrent intangible assets related to the acquisitions. Any remaining tax benefits would be recognized as reduction of income tax expense. As of December 31, 2003, approximately $17,998,000 of the Company's gross deferred tax assets and liabilities pertain to acquired companies. If the Company concludes in a subsequent period, that a valuation allowance is required for previously recognized tax benefits from acquisitions, the establishment or reestablishment of that valuation allowance would be recognized as income tax expense attributable to income from continuing operations, not as an increase in goodwill related to the acquisition. The Company's deferred tax liability relates significantly to the financial statement and tax carrying basis amount of certain acquired identifiable intangible assets.

The total valuation allowance for deferred tax assets as of December 31, 2003 was $9,840,929 of which $0 was charged against income tax expense while $9,840,929 was charged against acquisition goodwill and intangible assets. The total valuation allowance decreased by $5,319,273 from December 31, 2002, as a result of a decrease in acquired temporary differences, including net operating loss carryforwards, from 2002 and 2001 acquisitions. If the valuation allowance is fully realized, $9,840,929 will reduce goodwill and intangible assets and the balance will reduce income tax expense.

Undistributed earnings of the Company's foreign subsidiaries amounted to approximately $18,453,316, $12,725,476 and $7,736,580 at December 31, 2003, 2002 and 2001, respectively. The Company's policy has been that these earnings are indefinitely reinvested and, accordingly, no related provision for U.S federal and state income taxes has been provided. Upon distribution of those earnings in the form of dividends or otherwise, the Company will be subject to both U.S. income taxes (less foreign tax credits) and withholding taxes in the various foreign countries.

(12) Stock Compensation Plans

In 2000, the Company approved a stock purchase plan allowing employees to purchase the Company's common stock at 85% of the lesser of beginning and ending fair market value at six month intervals. Under this plan, 500,000 shares of common stock are authorized for issuance of which 94,943 shares were issued as of December 31, 2003.

In 1996, the Company adopted the 1996 Stock Option and Grant Plan (the "1996 Plan") and in 2000, the Company adopted the 2000 Stock Option and Incentive Plan (the "2000 Plan" and, together with the 1996 Plan the "Plans") pursuant to which the Company's Board of Directors can grant stock options to employees, directors and consultants. The Plans authorize grants of options to purchase up to 8,759,877 shares of authorized but unissued stock.

As of December 31, 2003 and 2002, 3,972,177 and 2,935,177 "Incentive Stock Options," and 3,283,868 and 3,005,868 "Non-qualified Stock Options," respectively, had been granted to employees. Generally, both the Incentive Stock Options and the Non-qualified Stock Options become fully vested over a four-year period, with one-quarter of the options vesting on each of the first four anniversaries of the grant date.

The Company applies APB Opinion No. 25 in accounting for the Plans. APB No. 25 requires no recognition of compensation expense for stock option awards when on the date of grant the exercise price is equal to the estimated fair market value of the Company's common stock and the number of options granted is fixed. During the years ended December 31, 2003 and 2002, 1,315,000 and 1,323,500 stock options, respectively, were granted to employees at exercise prices equal to or greater than fair market value of the Company's common stock on the date of grant. During the year ended December 31, 2001, 52,621 stock options were granted to employees at an exercise price of $1.87 for 42,766 of the options and $1.05 for 9,855 of the options, which was estimated to be less than the fair market value of the Company's common stock on the date of grant. During the year ended December 31, 2000, 1,140,466 stock options were granted to employees at an exercise price of $1.05, which was estimated to be less than the fair market value of the Company's common stock on the date of grant. Accordingly, for the years ended December 31, 2003, 2002 and 2001, compensation expense of $519,480, $1,269,397 and $2,678,743, respectively, was recognized on these stock option grants. As of December 31, 2003 additional compensation expense of approximately $28,304 will be recognized in future periods.

On September 29, 2000, two officers exercised 563,942 non-vested options that were granted during 2000 for 563,942 shares of restricted common shares for cash consideration of $286 and two promissory notes amounting to $589,652 payable to the Company. The notes had a three-year maturity and a fixed interest rate of 10% per annum, compounded annually. The restricted stock vests over four years with one-quarter of the shares vesting on each of the first four anniversaries of January 1, 2000. The estimated fair market value of the shares awarded on the original option date grant and on the date of exercise was estimated to be $6,177,127 of which $386,089, $900,859 and $1,673,025 has been recognized as stock compensation expense for the years ended December 31, 2003, 2002 and 2001, respectively. There is no remaining stock compensation expense to be recognized on these stock option grants. Also on September 29, 2000, two officers of the Company exercised 916,514 fully vested options for cash of $465 and two promissory notes amounting to $958,298 payable to the Company. The notes had a three-year maturity and a fixed interest rate of 10% per annum, compounded annually. In February 2002, one of the officers satisfied his obligations under these promissory notes by payment in full to the Company of the principal amount of the notes and accrued interest of $886,309. In August, 2003, the remaining obligations under these promissory notes were paid in full to the Company in an amount equal to the principal and accrued interest of $1,040,458.

The following is a summary of stock option activity:

	Employee Stock Options	
	Options Outstanding	**Weighted Average Exercise Price**
Balance at December 31, 2000	629,110	$ 1.33
Options exercised	(288,075)	0.40
Options forfeited	(150,027)	3.20
Options granted	515,057	4.14
Balance at December 31, 2001	706,065	$ 3.37
Options exercised	(128,355)	0.71
Options forfeited	(98,403)	5.54
Options granted	1,323,500	5.75
Balance at December 31, 2002	1,802,807	$ 5.19
Options exercised	(47,089)	1.39
Options forfeited	(156,319)	4.16
Options expired	(8,060)	0.01
Options granted	1,315,000	3.19
Balance at December 31, 2003	2,906,339	$ 4.42

During 2003, 2002 and 2001, no other additional options were exercised, canceled, expired or forfeited, or changes in any option terms, including exercise prices. The weighted average fair value of options granted during 2003, 2002 and 2001 was $2.26, $4.16 and $6.68, respectively.

The following is a summary of information relating to stock options outstanding at December 31, 2003:

	Options Outstanding			Options Exercisable	
Range of Exercise price	Number outstanding at December 31, 2003	Weighted-average remaining contractual life	Weighted-average exercise price	Shares exercisable at December 31, 2003	Weighted-average exercise price
$ 0.01-2.99	593,339	7.55 years	$ 2.01	124,636	$ 2.17
$ 3.00-3.99	1,275,000	9.26 years	$ 3.20	—	$ 0.00
$ 4.00-6.99	90,500	8.62 years	$ 4.56	23,250	$ 4.61
$ 7.00-8.00	907,500	7.51 years	$ 7.48	322,999	$ 7.58
$ 8.01-10.60	40,000	7.80 years	$ 9.29	17,500	$ 9.45
$ 0.01-10.60	2,906,339	8.32 years	$ 4.42	488,384	$ 6.12

Had the Company determined compensation cost based on the fair value of the options at the grant date, as is permitted by SFAS No. 123, the Company's net income (loss) would have been as follows:

	Years Ended December 31, 2003	2002	2001
Net income (loss) available to common stockholders	$ 4,259,592	$ 737,327	$ (5,208,418)
Pro forma net income (loss) available to common stockholders	$ 1,004,738	$ (2,835,369)	$ (5,710,339)
Basic net income (loss) per share	$ 0.14	$ 0.03	$ (0.20)
Pro forma basic net income (loss) per share	$ 0.03	$ (0.10)	$ (0.22)
Diluted net income (loss) per share	$ 0.14	$ 0.03	$ (0.20)
Pro forma diluted net income (loss) per share	$ 0.03	$ (0.10)	$ (0.22)

The fair value of each option grant for the Company's Plans is estimated on the date of the grant using the Black-Scholes pricing model, with the following weighted average assumptions used for grants in 2003, 2002 and 2001.

	Years Ended December 31, 2003	2002	2001
Risk free interest rates	3.5%	4.0%	5.4%
Expected option lives	2 years	3 years	2 years
Expected dividend yields	0%	0%	0%
Expected volatility	106.91%	91.40%	89.12%

(13) Segment and Related Information

The Company operates in one business segment: the development, manufacture and marketing of specialized products used to accelerate drug discovery research at pharmaceutical and biotechnology companies, universities and government laboratories worldwide. The Company provides tools for drug discovery focusing on the areas of target validation, high throughput screening, sample preparation, assay development and ADMET screening. These products all have similar economic characteristics and attributes, including similar nature of the products and services, similar marketing and distribution channels, similar production processes and similar class of customers. As a result, the Company aggregates its product lines into a single segment of tools for drug discovery. The Company operates primarily in three geographic regions: the United States, United Kingdom and the rest of the world.

The following tables summarize selected financial information of the Company's operations by geographic location:

Revenues by geographic area consists of the following:

	Years Ended December 31,		
	2003	2002	2001
United States	$ 43,562,448	$ 23,622,032	$ 16,504,892
United Kingdom	32,763,569	25,034,535	19,098,428
Rest of the world	10,814,888	8,723,815	5,265,067
	$ 87,140,905	$ 57,380,382	$ 40,868,387

Long lived assets by geographic area consists of the following:

	December 31,	
	2003	2002
United States	$ 50,393,572	$ 39,698,739
United Kingdom	17,264,539	14,221,355
Rest of the world	3,622,748	3,343,639
	$ 71,280,860	$ 57,263,733

(14) Income (Loss) Per Share

Basic income (loss) per share is based upon net income (loss) divided by the weighted average common shares outstanding during each year. The calculation of diluted net income (loss) per share assumes conversion of stock options into common stock. Net income (loss) and shares used to compute net income (loss) per share, basic and diluted, are reconciled below:

	Years Ended December 31,		
	2003	2002	2001
Net income (loss) available to common stockholders	$ 4,259,592	$ 737,327	$ (5,208,418)
Weighted average common shares outstanding during the year	29,923,709	27,090,054	25,784,852
Effect of dilutive securities:			
Common stock options	788,073	507,510	—
	30,711,782	27,597,564	25,784,852

Options to purchase 182,000, 1,095,500 and 1,146,495 shares of common stock for the year ended December 31, 2003, 2002 and 2001, respectively, were not included in the computation of diluted earnings per share because to do so would have been antidilutive.

(15) Accrued Expenses

Accrued expenses consist of:

	December 31, 2003	2002
Accrued compensation and payroll	$ 1,128,929	$ 1,862,719
License fees	—	1,446,479
Accrued legal and professional fees	708,968	1,185,389
Warranty costs	993,413	689,231
Other	2,152,893	2,178,525
	$ 4,984,203	$ 7,362,343

(16) Contingencies

The Company is subject to legal proceedings and claims arising out of its normal course of business. Management, after review and consultation with counsel, considers that amounts accrued for in connection therewith are adequate.

(17) Concentrations of Credit Risk

One commercial customer accounted for 13%, 18% and 30% of revenues for the years ended December 31, 2003, 2002 and 2001, respectively. At December 31, 2003 and 2002, one customer accounted for 12% and 11% of net accounts receivable, respectively. Except as noted above, no other individual customer accounted for more than 10% of revenues for the years ended December 31, 2003, 2002 and 2001. In addition, except as noted above, no other individual customer accounted for more than 10% of accounts receivable at December 31, 2003 and 2002.

(18) Asserted Legal Claims

In September, 2002, our Genomic Solutions subsidiary filed suit against Affymetrix, Inc. in the State of Michigan Circuit Court for the County of Washtenaw for breach of contract, negligent/innocent misrepresentation, tortuous interference with prospective economic advantage and declaratory relief. The action arose out of a License Agreement that Genomic Solutions entered into with Affymetrix with respect to certain Affymetrix patent rights. In November 2002, Affymetrix filed a counter-claim against Genomic Solutions alleging breach of contract and requesting approximately $1.45 million in damages for license and other fees and interest allegedly owed. On April 30, 2003, Affymetrix was granted summary disposition and Genomic Solutions' claims were dismissed. In June 2003 the Company settled this claim and paid $1.3 million to Affymetrix

In December, 2002, Oxford Gene Technology Ltd. filed suit against our Genomic Solutions subsidiary, Mergen Ltd., Clontech Laboratories, Inc., PerkinElmer Life Sciences, Inc., Axon Instruments, Inc. and BioDiscovery, Inc. in the United States District Court for the District of Delaware seeking unspecified damages as a result of alleged infringement by each of the defendants of a United States Patent issued to Oxford Gene Technology. On May 12, 2003, the Company and Oxford Gene Technology settled the dispute and the lawsuit was dismissed. Under the settlement, Genomic Solutions will display certain notices in connection with the marketing of certain genomic-related products. In addition, a nominal amount was paid to Oxford Gene Technology.

On February 4, 2002, Paul D. Grindle, the former owner of Harvard Apparatus, Inc., initiated an arbitration proceeding against us and certain directors before JAMS in Boston, Massachusetts. Mr. Grindle's claims arise out of post-closing purchase price adjustments related to our purchase of the assets and business of Harvard Apparatus by virtue of an Asset Purchase Agreement dated March 15, 1996 and certain related agreements. In the arbitration demand, Mr. Grindle sought the return of 1,563,851 shares of common stock in Harvard Bioscience, or the disgorgement of the profits of our sale of the stock, as well as compensatory damages and multiple damages and attorney's fees under Mass. Gen. Laws, chapter 93A. In a demand letter that was attached to the arbitration demand, Mr. Grindle asserted losses in the amount of $15 million, representing the value of the 1,563,851 shares of Harvard Bioscience's common stock as of January 2, 2002. On October 30, 2002, we received a decision from the arbitrator that we have prevailed on all claims asserted against us and certain of our directors in the arbitration action. Specifically, we received a written decision from the arbitrator granting our motion for summary disposition with respect to all claims brought against all parties in the action. The Company filed a complaint in the Massachusetts Superior Court seeking to confirm the arbitrator's decision. Mr. Grindle filed a complaint in the Massachusetts Superior Court seeking to vacate the arbitrator's decision. These two matters were consolidated. On or about July 30, 2003, the Massachusetts Superior Court granted our motion to confirm the arbitrator's decision and to deny Mr. Grindle's motion to vacate. Mr. Grindle has filed a notice of appeal with the Massachusetts Appeals Court and an application for a direct appellate review with the Massachusetts Supreme Judicial Court, both of which are pending.

On May 30, 2002, the Company served a claim notice (the "Claim Notice") on the former shareholders of Union Biometrica (the "Former Shareholders"), seeking indemnification in connection with the May 31, 2001 Merger Agreement that effectuated the Company's acquisition of Union Biometrica. The Claim Notice had the effect of withholding the release of certain Company shares placed in escrow as part of the merger consideration to the Former Shareholders. On September 5, 2002, the Former Shareholders served a Demand for Arbitration on the Company which essentially set forth defenses against the indemnification claims asserted in the Claim Notice, alleged that the Company did not have an adequate basis for its Claim Notice and asserted that the Former Shareholders could be harmed by a decline in value of the escrowed shares as a result of the Company's failure to release the escrowed shares. A hearing was held by an arbitrator in late April and early May, 2003. On July 15, 2003, the Company received the arbitrator's award (the "Award") in favor of the Former Shareholders. The arbitrator ruled that the Company must release 474,420 Company shares held in escrow to the Former Shareholders and also must pay the Former Shareholders approximately $696,000 which represents the difference between the market value of 322,875 Company shares held in escrow as of May 31, 2002, and the market value of those shares as of the date those shares are released, calculated as prescribed by the escrow agreement. Each party sought certain corrections to the ruling. On August 26, 2003, the Award became final and the Former Shareholders were awarded approximately $696,000 plus interest. This charge and certain related costs, totaling approximately $790,000 is reflected in the Company's financial results for the year ended December 31, 2003. After the Award became final, the Company and the Former Shareholders entered into a settlement agreement pursuant to which the Company paid approximately $790,000 to the Former Shareholders and the parties exchanged mutual releases, which, among other things, provide that the Former Shareholders will not seek to confirm or modify the Award and the Company will not seek to vacate or modify the Award.

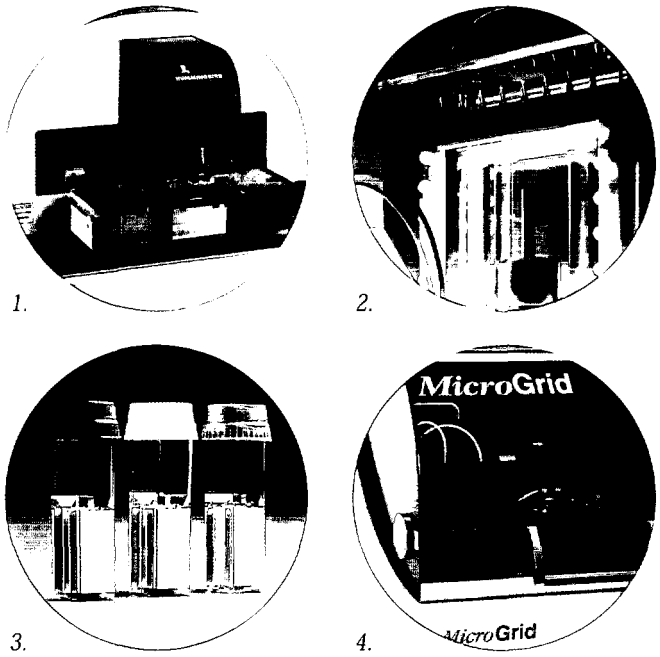
In addition, from time to time, we may be involved in various claims and legal proceedings arising in the ordinary course of business. Except as disclosed above, we are not currently a party to any such claims or proceedings, which, if decided adversely to us, would either individually or in the aggregate have material adverse effect on our business, financial condition or results of operations.

(19) Subsequent Events

On March 3, 2004, the Company acquired all issued and outstanding stock of KD Scientific, Inc. for approximately $6.65 million in cash. The acquisition was funded by proceeds from the $20 million credit facility entered into in November 2003 with Brown Brothers Harriman. There is approximately $950,000 available for use under this credit facility. The transaction will be accounted for using the purchase method of accounting. The results of KD Scientific will be included in the consolidated operating results of the Company from the date of acquisition.

ON THE COVER

1. *Genomic Solutions' Hummingbird™ for Compound Library Management*
2. *Hoefer's Vertical Protein Electrophoresis System*
3. *BTX's Electroporation Cuvettes*
4. *BioRobotics' MicroGrid for Microarraying of DNA*



1. 2. 3. 4.

Forward-Looking Statements

This Annual Report 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. 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 our expected research and development spending, the impact of acquisitions on future earnings, the effect of our technology on the drug development process, our intention to strengthen our market position, management's confidence or expectations, our business strategy, our positioning for revenue and other growth, our ability to reduce the risk of being dependent on a single technology, our ability to avoid competition with major instrument companies, our acquisition strategy (including our ability to accelerate the growth of acquired products through our established brands and distribution channels, our ability to raise capital or borrow funds to consummate acquisitions and the availability of attractive acquisition candidates), our plans and intentions regarding the distribution of our catalog and supplements to our catalog, our expectations regarding future costs of product revenues, the market demand and opportunity for our products, our beliefs regarding our position in comparison to our competitors, our estimates regarding our capital requirements, the timing of future product introductions, or the ability of our patent strategy to protect our current and future products, our expectations in connection with current litigation (including inferences about the finality of the arbitrator's decision in the Grindle matter and potential appeal of or other challenge to that decision), 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," "expects," "plans," "anticipates," "believes," "estimates," "projects," "predicts," "intends," "potential" 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 under the heading "Important Factors That May Affect Future Operating Results" beginning on page 22 of this Annual Report in the section "Management's Discussion and Analysis of Financial Condition and Results of Operations". 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

84 October Hill Road
Holliston, Massachusetts 01746

508-893-8066