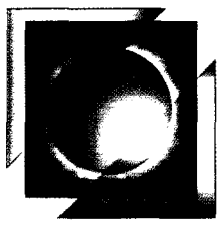
Life. Changing.

Xenogen Corporation

2004 Annual Report

Financial Highlights

Year Ended December 31, (in thousands, except per share data)	**2004**	2003	2002	2001	2000
Revenue	**$ 30,883**	$ 20,063	$ 16,014	$ 13,244	$ 4,137
Cost of revenue and operating expenses	**52,750**	40,058	47,209	48,310	22,623
Loss from operations	**(21,867)**	(19,995)	(31,195)	(35,066)	(18,486)
Other income (expense), net	**90**	(552)	(451)	369	870
Net loss	**(21,777)**	(20,547)	(62,552)	(34,697)	(17,616)
Share data (basic and diluted)					
Net loss attributable to common stockholders excluding cumulative effect of an accounting charge per share—impairment of goodwill	**$ (2.99)**	$ (33.89)	$ (63.86)	$ (72.51)	—
Cumulative effect of an accounting change—impairment of goodwill	—	—	(56.52)	—	—
Net loss attributable to common stockholders	**$ (2.99)**	$ (33.89)	$ (120.38)	$ (72.51)	$ —
Cash, cash equivalents and short-term investments	**$ 21,916**	$ 13,546	$ 6,670	$ 28,119	$ 28,855
Working capital	**14,071**	6,314	(2,498)	20,636	21,805
Total assets	**39,938**	31,559	24,305	82,450	81,460
Total stockholders' equity (deficit)	**15,947**	8,190	(109,544)	(45,467)	(14,014)



XENOGEN

Discovery in the Living Organism®

Xenogen is a leading biotechnology company and developer of a powerful new in vivo biophotonic technology, which allows real-time exploration of genes, proteins, pathogens, and tumor cells in living animals designed to improve success rates in drug development. Xenogen's full complement of products and services includes imaging technologies, as well as transgenic animal model programs for pharmaceutical and biotechnology research and development.

www.xenogen.com

To Our Stockholders:

2004 was a pivotal year for Xenogen Corporation. Our initial public offering of common stock closed in July 2004, and I am pleased to address you, our stockholders, for the first time as the Chief Executive Officer of Xenogen, the publicly-traded company. Our initial public offering was a critical step in Xenogen's transformation from a company focused on building a technology platform to a company with the commercial mission of delivering our imaging systems and biological solutions to participants in the pharmaceutical, biotechnology and academic markets.

Our IVIS® Imaging Systems are the foundation of our product offerings. These integrated imaging systems contain patented and proprietary components, including highly-sensitive image capturing cameras and software that can measure and analyze light emitted by living cells. Our biological reagents, cell lines and specialized in vivo animal models genetically tagged with certain light-emitting reporters complement the IVIS Imaging Systems and – along with our intellectual property that protects the methods for biophotonic imaging in mammals – offer a complete imaging solution for academic, pharmaceutical and biotechnology laboratories. We believe our imaging systems and biological solutions enable researchers to better understand the molecular effects of experimental drugs, validate disease targets, and make more accurate predictions of how drugs will behave in human trials, resulting in our customers' ability to make more timely and cost-effective decisions at every step in the drug development process.

We are proud of our 2004 financial performance. We generated $31 million in revenue, an increase of more than 50% over 2003. We installed 83 systems in academic and commercial laboratories, and established 16 commercial licenses. We also invested in people, research and development, and infrastructure to position Xenogen for the next stage of growth.

A Look Back...

Before I talk about 2004 and beyond, I want to look back at the history behind our accomplishments and pay tribute to our founder.

Xenogen was founded in 1995 by Dr. Pamela R. Contag, who pioneered visible light in living tissue as a research tool. Her vision, hard work and sacrifice underlie the success we have seen as a company so far, and set the stage for our future. Dr. Contag has decided not to stand for re-election to our Board of Directors at the 2005 annual meeting of stockholders. Dr. Contag will continue to serve as our President and will continue her scientific work and interactions with our customers and the investment community. We thank Pam for her years of service as a member of our Board and look forward to her continued leadership and contributions.

2004 Report

With that background, Xenogen has set its sights on playing an increasingly important role in helping scientists create life-saving therapies by supplying imaging systems and biological solutions that meet the experimental needs of our customers.

In 2004, we increased our focus on placing imaging systems with pharmaceutical and biotechnology companies along with our continued placement efforts with top-tier academic institutions. For example, we expanded our relationship with Merck & Co., Inc., entering into an agreement with Merck to provide their oncology laboratories with multiple IVIS Imaging Systems and licenses to use our software and methods. Other imaging system customers include Aventis Pharmaceuticals, Inc. and Aventis-Pharma Recherche-Developpement, along with other major pharmaceutical and biotechnology companies in the United States, Europe and Asia.

We expanded our U.S. and international sales and marketing efforts. In 2004, we hired a total of seven employees in sales, sales support and marketing who are building relationships with customers across the United States and several European countries. We also expanded our network of international independent distributors. We now have independent distributors in Australia/New Zealand, China, Germany/Austria/Switzerland, India, Israel, Japan, South Korea and Taiwan. In Japan, our exclusive distributor capitalized on its success placing imaging systems with Japanese academic institutions to place our first imaging system with a major Japanese pharmaceutical company.

A very important achievement in 2004 was the market acceptance of our IVIS Imaging System 200 Series, which was introduced to the market in the fourth quarter of 2003. In 2004, we sold twenty five 200 Series imaging systems. We believe the momentum of the 200 Series carried forward into 2005. We continue to refine this new imaging system and upgrade its functionality, including work now underway on innovations in processing capability.

The increasing placement of our imaging systems creates an opportunity for our other strategic enterprise, Xenogen Biosciences ("XenBio"), our wholly-owned subsidiary. XenBio performs custom genetic target validation and compound evaluation studies for clients from commercial, government and academic institutions. XenBio offers more than 15 years of experience in the transgenic field, providing reliable genetically modified mouse models in short timelines. XenBio has completed nearly 2,500 projects to create genetically engineered animals and cell lines, with a greater than 96 percent success rate. In Cranbury, New Jersey, our XenBio scientists design and develop customized, genetically engineered animal models to meet customer specifications. These animals also can be designed for use in our biophotonic imaging systems. Our customers work together with our XenBio scientific staff to design a genetic profile in animals that matches the research area targeted by the customer. XenBio customers include Pfizer Inc. and Wyeth Laboratories. Our expertise in genetically modified animal creation and phenotypic characterization creates a vital synergy with our powerful biophotonic imaging systems.

During the year, we invested in infrastructure, and will continue to do so, to position Xenogen for further growth in the years ahead. We expect these investments will continue until we are satisfied that manufacturing capacity is optimized to meet our customers' demand.

We also strengthened our management team with several additions, including Bill Albright as Chief Financial Officer. Bill's public company and financial markets experience is invaluable as we move forward. Most recently in 2005, Jason Brady and Stan Tanka joined our management team. Mr. Brady is our General Counsel and Vice President and Stan Tanka is our Vice President, Finance.

Looking Ahead

Molecular imaging is an increasingly popular research tool for pharmaceutical, biotechnology and academic laboratories. To date, academic research laboratories have been our strongest customers, and we intend to increase our placements within pharmaceutical and biotechnology laboratories. Researchers in top academic institutions are increasingly using optical imaging to provide real-time data on molecular functions within intact experimental animals in research and development. As these researchers steadily move into the commercial marketplace, we hope they will share their experience with Xenogen solutions – IVIS Imaging Systems and biological solutions – with their new colleagues, and encourage further commercial adoption. A few years ago, we did not hear very much about in vivo imaging outside our own walls. Now, it is a major topic among academic conclaves, there are several professional societies focused on molecular imaging and data and images from our imaging systems are showing up in papers published around the world. Please visit the "Technology/Publications" section of our website, www.Xenogen.com, to read from some of the research papers citing our solutions used in laboratories around the world.

In 2005, we plan to introduce our next generation imaging system, the IVIS 3-D™ Imaging System. We believe this system will push the field of biophotonic imaging forward, creating three-dimensional images, over time, and generating specific information about where molecules are active within the whole body of the animal. Physiological pathways are not linear, and it is invaluable to know if a drug candidate is impacting anatomical areas not targeted in the research.

We will work with our customers to develop reagents, and we will continue to develop animal models to advance the study of infectious diseases, inflammation, metabolic disorders and cardiovascular disease. It is our strategy to work closely with our customers to share with them the advantages of using our biological solutions with our imaging systems. It is our goal to provide best-in-class imaging systems and biological solutions to researchers for their use as they develop life-saving therapeutics.

While we have made substantial progress, we have just begun on the path forward. Supported by the foundation we have built, we are deploying to drug developers our products, solutions and knowledge that are designed to facilitate reduced costs for drug development failures and improved time to market for drug development successes. We thank you for your support, and look forward to continuing the conversation started with you during 2004.

Sincerely,

David W. Carter
Chairman & CEO

Board of Directors

David W. Carter
Chairman of the Board and Chief Executive Officer
Xenogen Corporation

Pamela R. Contag, Ph.D. (1)
President
Xenogen Corporation

Michael F. Bigham (2) (3)
Director
Abingworth Management, Inc.

Robert W. Breckon (3) (4)
Executive Vice-President, Strategy and Corporate Development
MDS Inc.

Christine Cordaro (1)
General Partner, CMEA Life Sciences
Founder and General Partner, Milepost Ventures, L.P.

Michael R. Eisenson (5)
Managing Director and Chief Executive Officer
Charlesbank Capital Partners, LLC

William A. Halter (6)
Management Consultant
Former Deputy Commissioner and Former Acting Commissioner,
United States Social Security Administration

E. Kevin Hrusovsky (7)
President and Chief Executive Officer
Caliper Life Sciences Inc.

Chris Jones (3) (8)
Operating Partner, Electra Private Equity Partners
Former CEO, J. Walter Thompson

Greg Schiffman (8) (9)
Senior Vice President and Chief Financial Officer
Affymetrix, Inc.

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(1) Not standing for re-election at the 2005 Annual Meeting of Stockholders
(2) Member of the Audit Committee
(3) Member of the Compensation Committee.
(4) Will become a member of the Audit Committee after the 2005 Annual Meeting of Stockholders.
(5) Chairman of the Compensation Committee.
(6) Chairman of the Nominating and Governance Committee
(7) Will become a member of the Nominating and Governance Committee after the 2005 Annual Meeting of Stockholders
(8) Member of the Nominating and Governance Committee
(9) Chairman of the Audit Committee.

Executive Officers

David W. Carter
Chairman of the Board and Chief Executive Officer

Pamela Reilly Contag, Ph.D.
President

William A. Albright, Jr.
Chief Financial Officer and Senior Vice President,
Finance and Operations

David R. Boyko
Vice President, Licensing and Legal Services

Jason M. Brady
General Counsel and Vice President

Anthony F. Purchio, Ph.D.
Chief Scientific Officer and Vice President

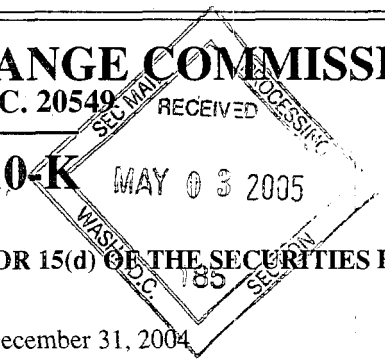
Bradley W. Rice, Ph.D.
Chief Technology Officer and Vice President

Michael J. Sterns, D.V.M.
Chief Business Officer and Vice President

Stan Tanka
Vice President, Finance

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549



FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2004

OR

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

For the transition period from to

Commission file number: 000-32239

XENOGEN CORPORATION

(Exact name of registrant as specified in its charter)

Delaware	**77-0412269**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification Number)**
860 Atlantic Avenue, Alameda, California	**94501**
(Address of principal executive offices)	**(Zip Code))**

Registrant's telephone number, including area code: (510) 291-6100

Securities registered pursuant to Section 12(b) of the Act: None

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

Common Stock, $.001 par value

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

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐

Indicate by check mark whether the registrant is an accelerated filer (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

As of June 30, 2004, the last business day of the registrant's most recently completed second quarter, there was no established trading market for the registrant's common stock.

At March 4, 2005, 14,832,220 shares of the registrant's common stock, $.001 par value, were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of Part III of this Form 10-K incorporate by reference information from the registrant's Proxy Statement to be filed with the Securities and Exchange Commission in connection with the solicitation of proxies for the registrant's 2005 Annual Meeting of Stockholders.

TABLE OF CONTENTS

Forward-Looking Statements

This Form 10-K, including "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Item 7, contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). These statements are not guarantees of future performance and are subject to certain risks, uncertainties and assumptions that are difficult to predict. Actual results could differ materially from those expressed or forecasted in any such forward-looking statements as a result of certain factors, including those set forth in "Risk Factors that May Affect Our Results," "Management's Discussion and Analysis of Financial Condition and Results of Operations," "Business" and elsewhere in this Form 10-K. Such forward-looking statements include any projections of revenues, operating expenses, or other financial items; any statements of the plans, strategies, and objectives of management for future operations; factors affecting our 2005 operating results; any statements concerning proposed new products, services, developments, or anticipated performance of products or services; any statements regarding future economic conditions or performance; statements of belief; and any statement of assumptions underlying any of the foregoing. You can identify these statements by the fact that they do not relate strictly to historical or current facts and use words such as "anticipate," "expect," "intend," "plan," "believe," "seek," "estimate," and other words and terms of similar meaning. From time to time, we also may provide oral or written forward-looking statements in other materials that we release to the public.

The risks, uncertainties and assumptions referred to above include, but are not limited to, those discussed in this Form 10-K and the risks discussed from time to time in our other public filings. Although we believe that expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements. All forward-looking statements included in this document are based on information available to us as of the date of this report. We expressly disclaim any obligation or undertaking to release publicly any updates or revisions to any forward-looking statements contained herein to reflect any change in our expectations with regard thereto or any change in events, conditions, or circumstances on which any such statement is based. You are advised, however, to consult any further disclosures that we make on related subjects in our Forms 10-Q and 8-K filed with the Securities and Exchange Commission (the "SEC"). You also should read the section titled "Use of Estimates" included in Note 1 of Notes to Consolidated Financial Statements included pursuant to Item 8 of this report.

PART I

Item 1. Business.

Overview

We sell integrated systems of instruments and equipment, software and reagents to biomedical and biopharmaceutical researchers that we believe improve the productivity and efficiency of the drug discovery and development process. Using the detection and measurement of photons emitted from cells and animals that we genetically engineer to emit light, which we term "biophotonic imaging", our patented and proprietary biophotonic IVIS Imaging Systems, living animal models and research services collectively expedite *in vivo* data collection and analysis, a critical bottleneck in drug discovery and development. Our customers use in vivo biophotonic imaging to visually display and quantify a chosen tumor, disease, pathogen, organ or biochemical reaction. Our products are also used to generate predictive animal models, primarily rats and mice, for preclinical drug discovery and development. We believe our products enable our pharmaceutical and biotechnology customers to generate higher-quality safety and efficacy data for drug candidates, to accelerate preclinical development and to reduce the development risk of product candidates that enter human clinical development. The sources of our revenue are:

- *Instruments and related imaging accessories*: sales of IVIS Imaging Systems and accessories;

- *Recurring license fees*: multi-year fees for our biophotonic imaging licenses and access to reagents such as animals and cell lines; and
- *Long-term service contracts*: custom animal production, animal phenotyping and IVIS service contracts.

We manufacture, market and sell our IVIS Imaging Systems, as well as the reagents—pathogens and tumor cells, or "Bioware", and light-producing transgenic animals, or "LPTA animal models"—that allow our customers performing biopharmaceutical and biomedical research, discovery and development to collect safety, efficacy and other relevant data on therapeutic product candidates. Our reagent sales are comprised of genetically modified animals (mice and rats), microorganisms and cell lines that are used to characterize the role of genes in the disease process as well as to measure the efficacy of drugs against certain sets of disease indications. We also provide a wide range of contract research services relating to the production of transgenic animals (in which foreign genes are incorporated) and knockout animals (in which specific genes are functionally disabled). In addition, we provide custom animal production and phenotyping services to our customers for the purpose of target validation and compound screening. Our product offerings allow our customers to gather data about biochemical pathways in living animals, the mechanism of action of drug candidates and how well these drug candidates work in living organisms.

We were incorporated in California in August 1995 and reincorporated in Delaware in September 2000. Our shares began trading on the Nasdaq National Market in July 2004. Our principal executive offices are located at 860 Atlantic Avenue, Alameda, California 94501, and our telephone number is (510) 291-6100. Our company website address is http://www.xenogen.com. Information contained in our website is not a part of this annual report on Form 10-K.

Market Opportunity

Our market consists of pharmaceutical, biotechnology and other entities engaged in biopharmaceutical research, and not-for-profit institutions engaged in biomedical research around the world. In the United States alone, there are over one thousand biotechnology companies, along with a much smaller number of pharmaceutical companies (although fewer in number, typically much larger in terms of resources, size and capitalization) conducting various aspects of biopharmaceutical research. In addition, the United States alone has over 600 academic and not-for-profit institutions engaged in biomedical research.

Biopharmaceutical Research

In order to identify optimal targets for drug development and to better assess the efficacy and safety of potential drug candidates, biopharmaceutical researchers need to understand the underlying biological processes that contribute to disease pathologies in the context of animal physiology and, ultimately, in humans. In addition, the U.S. Food and Drug Administration (the "FDA") will not approve human clinical trials of a potential drug candidate without the submission of animal clinical data demonstrating an acceptable efficacy and/or safety profile of that candidate.

Although there have been many advances in high-throughput *in vitro* (referring to tests or reactions taking place outside a living organism) technologies, such as biochemical, gene, protein and cellular assays, these assays are not performed in the context of the whole organism and often have less predictive value for determining the activity of a drug in a human. These types of technologies generally assess only one biological parameter and do so only at a single point in time. Consequently, they do not represent the complex biological systems comprising living organisms and do not reflect or capture any dynamic or interactive changes occurring over time in an individual living organism.

In contrast, *in vivo* (referring to tests or reactions taking place inside a living organism) technologies involve the use of intact animal models to test the effects of a drug on, or the role of a gene or protein in, a biological system. To validate a hypothesis concerning the effects of a drug on, or the role of a gene or protein in, a

biological system, researchers must test the hypothesis in animal models. *In vivo* technologies have evolved over time from conventional animal models, to genetically or chemically mutated animals in which specific genes are altered, and more recently to transgenic animals in which a foreign gene of interest has been inserted.

Although traditionally *in vivo* technologies are slower and more expensive than *in vitro* technologies, they often yield more relevant information, because testing of potential drugs in living systems provides information that is more predictive of the biological effect in humans. To assess biological activity in vivo, researchers must collect, process and analyze tissues from different animals at multiple points in time. Tissue analysis alone can often take months to complete. These snapshots in time are combined to generate a model of drug response, but do not allow the researcher to observe real-time dynamic or cascading effects of the drug or disease over time in one animal. The use of different animals to compile these snapshots creates statistical variation in the data generated due to the inherent variability in each animal. In addition, flaws in the data collection process, such as human error, error inherent in the model, inaccurate measurement technology, or manipulation of the test subject, as well as the time consuming nature of this process, limit the predictiveness of *in vivo* animal models. The *in vivo* animal models used to test drug targets have remained the same over many decades.

Biomedical Research

Biomedical researchers in academic and not-for-profit institutions are investing in a diverse range of technologies that facilitate and accelerate their understanding of genes, proteins and pathways in both normal and diseased states. Although a variety of technologies enable researchers to analyze a large number of genes and proteins in parallel, such technologies provide minimal information on the dynamic role that these genes and proteins serve in the living body. Biomedical researchers are seeking complementary *in vivo* technologies to facilitate a deeper understanding of the potentially complex role that these genes serve in physiology and metabolism. The breadth of the applications for animal imaging is particularly attractive in academia. In addition, academia tends to lead the biopharmaceutical industry in terms of adopting and validating new technology.

In both biopharmaceutical and biomedical research, the existing *in vivo* animal models are viewed as a rate-limiting step due to the time involved, the inconsistency of results, and the limited predictive value of the results. Mice and rats have different immune and physiological systems than humans, hence these models often fail to predict human response to therapeutic targets. Consequently, removing the bottleneck requires enabling researchers to follow all stages of disease progression and the subsequent host response that are similar to (and, therefore, predictive of) human biology in a high-throughput manner. The limitations in conventional animal models can be alleviated by collecting higher quality data, specifically quantitative data, spatial information (where in the animal), and temporal analysis (data collected in real-time from the same animal over minutes, days or months).

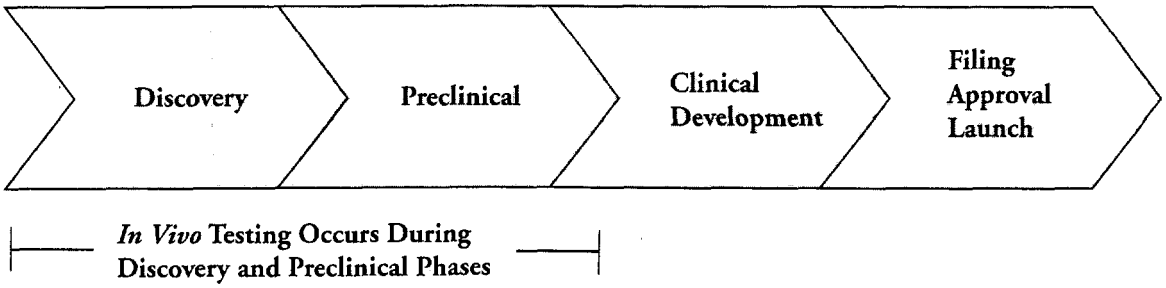
Because of the limitations of current *in vivo* and *in vitro* assays, researchers have been seeking new technologies that provide physiologically relevant data. Imaging technologies currently under investigation for use in the clinical setting and in drug discovery and development—magnetic resonance imaging(or MRI), positron emission tomography, or PET, X-ray computed tomography, or CT, single photon emission computed tomography, or SPECT, and other optical imaging technologies—generally do not provide high quality functional data, and are not low in cost compared to *in vitro* assays and conventional animal model assessment mainly due to the cost of equipment and the requirement of sizable teams of technicians with greater skill level to collect and analyze data.

Our Business

We offer products and services that allow researchers to observe in real-time the disease and molecular mechanisms in living intact organisms in a non-invasive manner (generally referred to as "molecular imaging"). Our products and services allow researchers to focus on those stages of disease progression within animal models that are most predictive of human response. With this information, researchers can follow the spread of a disease,

or the effects of a drug, throughout the same animal over time. Our integrated system of products and services enables biopharmaceutical companies to reduce costs and standardize analytical techniques across four key areas of the drug discovery and development chain: biological screening; pharmacokinetics and absorption, distribution metabolism and excretion, or ADME; safety and toxicological testing; and drug dosage and formulation. These areas accounted for approximately 21% of the $33 billion in research and development that the pharmaceutical industry spent in 2003 as reported by the Pharmaceutical Research and Manufacturers of America. The graphic below depicts the four stages in the drug development process, the stages where *in vivo* testing occurs and the portion of total research and development spending related to *in vivo* testing.

The Role of *In Vivo* Analysis in the Biopharma Path to Drug Approval

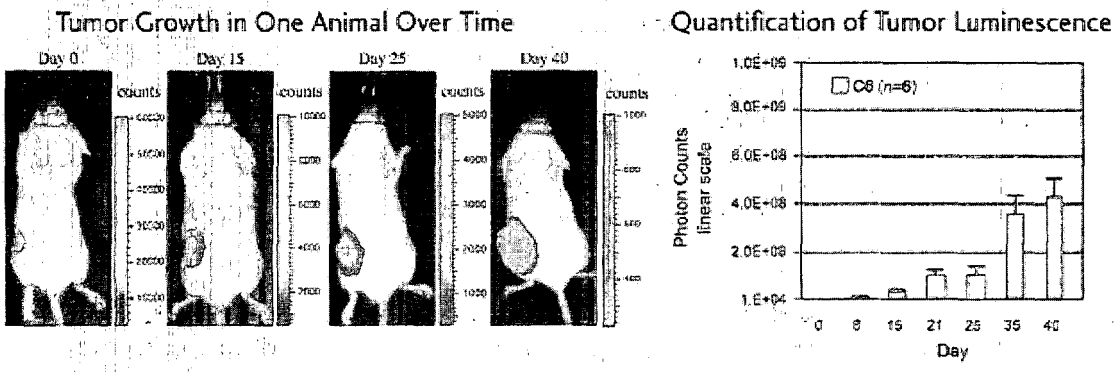


Source: Data based on FDA report, March 2004, "Challenge and Opportunity on the Critical Path to New Medical Products" and from Pharmaceutical Research and Manufacturers of America.

Real-time capabilities of biophotonic imaging enable visual observation of mechanisms of action or cascading events within the animal that would not otherwise be detected using conventional animal models. This capability is particularly important in studies where genes are altered by environmental determinants and in studies in which drugs are delivered and effect biological pathways of whole tissues in a manner that cellular systems or other *in vitro* systems do not. We believe the combination of genetically modified animals and biophotonic imaging has created more reliable animal models. Transgenic animal models developed for biophotonic imaging are disease-specific and enable analysis of gene expression, protein activity and disease progression. In our genetically modified animals, known as "LPTA animal models," the gene for luciferase, which produces a light-emitting enzyme, is present in every cell in the body of the animal but only produces light when that gene is turned on in a specific cell type. In addition to genetically modified animals, we have modified cells and microorganisms alone to express the luciferase gene, known as "Bioware," for tracking and monitoring such cells within an unmodified laboratory animal.

Increasing the throughput of *in vivo* animal testing and utilizing it earlier in the drug development cycle may substantially reduce the costs of drug development failures and improve the time to market of successes. For instance, we believe that implementation of our technology will allow consolidation and acceleration of the target validation, lead optimization and preclinical stages of the drug development process. Likewise, efficacy and toxicity tests can be performed earlier in the drug development cycle to avoid late-stage failures.

For example, the pictures below demonstrate (at left) the biophotonic image of a tumor growing in a live animal over time and (at right) the quantitative measurement of the relative tumor size as time progresses. This example uses one of our tumor cell lines that has been genetically modified to express the luciferase gene (and ultimately, light) known as "Bioware" in an ordinary mouse and imaged using our specially designed camera system, known as the "IVIS Imaging System."



Additionally, through our Xenogen Biosciences Corporation subsidiary, we offer biopharmaceutical companies and biomedical researchers with animal production and phenotyping services to create both traditional and bioluminescent animal models to test the effects of a drug on, or the role of a gene or protein in, a biological system. Whereas previously biopharmaceutical companies essentially tended to perform all research and development (R&D) in-house, there is a trend in recent years to concentrate the in-house R&D on core competencies and to outsource specific technologies and products to specialized service providers and vendors. As a consequence of this, a large industry segment has formed in recent years to deliver various specialized technologies and services to biopharmaceutical companies. Over the past 15 years, Xenogen Biosciences has offered many of these specialized technologies for creation and characterization of animal models.

Although, as mentioned above, traditional in vivo animal models are viewed as a rate-limited step, they nonetheless remain a critical element in life sciences research and of the drug discovery and development process. The biopharmaceutical industry currently relies on a limited number of platform technologies for validating the expanding number of drug targets that have emerged from the sequencing of the human genome. The most relied upon technology for target validation within the pharmaceutical industry today is gene knockout technology in concert with comprehensive phenotypic analysis. Genetically engineered mice can be highly informative in the discovery of gene function and pharmaceutical utility of a potential drug target, as well as in the determination of the potential on-target side effects associated with a given target. Aside from whether a gene is a good drug target, genetically engineered animals also provide invaluable models to assess the pharmacology, and increasingly the toxicology, of drug candidates, making them well accepted validation models. Xenogen Biosciences not only has more than a decade's worth of experience in creating and characterizing these types of animal models, but also more than 13 years of experience in creating transgenic animal models, and a history of having produced thousands of unique mutant model lines for customers.

Products and Services

We offer an integrated system of products and services for biopharmaceutical and biomedical researchers that addresses the current limitations of the drug discovery and development process. Our products include IVIS Imaging Systems, Bioware and LPTA animal models. The IVIS Imaging Systems work in conjunction with our Living Image software to allow researchers to collect, manipulate and display data from our light-producing cells, microorganisms and transgenic animals. We also provide research and development services for compound screening and profiling in our animal models and for target validation.

IVIS Imaging Systems and Living Image Software

The IVIS 50, 100, 200 Series and 3D Imaging Systems each include a highly sensitive camera, an ultra-dark box that serves as the imaging chamber and a computer equipped with our Living Image Software. The throughput image resolution and analytical capabilities differ by camera to address different end user needs. The original IVIS 100 Series, introduced in 2000, and the IVIS 200 Series, introduced in 2003, each have high-throughput and high-sensitivity, but the IVIS 200 also has integrated fluorescence and bioluminescence capabilities and features, as well as high resolution and topographic analysis. Introduced in 2003, the IVIS 50 Series has lower throughput and less sensitivity than other IVIS models, but is available at a lower price point. The IVIS 3D, presently in development for an expected launch in 2005, is a high-sensitivity camera with single animal multi-view and three-dimensional analytical capabilities. The IVIS Imaging Systems' functional sensitivity is up to 1,000 times greater than PET, for example, has higher throughput than other imaging modalities, and the unique Living Image Software allows one non-technical person to operate the imaging system and examine the data analysis simultaneously. We offer IVIS Imaging Systems on both a sale and lease basis. Various elements of the hardware and software are covered by claims in several of our issued and pending patents.

In addition, we offer several options and accessories to expand our IVIS Imaging System workstations, which are sold separately from the imaging systems. Our standard accessory package includes a calibration unit to ensure the overall performance and accuracy of the light sources used in the system as well as a small animal holding unit. We also offer an anesthesia accessory package, which is designed to work with all of our IVIS Imaging Systems. Our anesthesia package integrates a gas delivery system into the imaging chamber, so that mice or small animals can be anesthetized when placed in the IVIS Imaging System, thus minimizing gas exposure to lab personnel. We have pending patent applications claiming many of these accessories.

We also offer several extended service plans for our IVIS Imaging Systems. These plans vary based on the level of service desired by the customer and are available on an annual and multi-year basis, and are available in the United States, Asia and Europe. Our premium service plan includes routine maintenance, 24 x 7 emergency support, 9 x 5 technical support and a technical support response time of less than 24 hours. Our standard and basic service plans offer maintenance and support, but with longer response times.

Bioware—Light-Producing Cells and Microorganisms

Our Bioware lines of light-producing cells and microorganisms enable researchers to analyze the spread and treatment of cancer and infectious diseases, as well as to study immunology. We currently offer approximately 25 lines of light-producing microorganisms, including *E. coli*, *Pseudomonas*, *Salmonella* and other gram negative bacteria, as well as *Staphylococcus aureus*, *Streptococcus pneumonia* and other gram positive bacteria. We have also developed approximately 15 tumor cell lines for breast, melanoma and prostate cancer. In addition, we are able to create custom light-producing microorganisms and tumor cell lines in accordance with the needs of our customers. All of our Bioware products are optimized to work with our IVIS Imaging Systems.

LPTA Animal Models

Our LPTA animal models are pathway-specific model animals that enable researchers to analyze gene expression, protein activity and disease progression. We currently have over 20 types of commercially available therapeutically-relevant LPTA animal models designed to assist researchers in the areas of metabolic diseases and liver failure, inflammation and drug metabolism. We are developing and in-licensing other types of LPTA animal models designed to assist researchers in the areas of cardiovascular disease, cancer, inflammation and toxicity. In addition, we are able to create customized LPTA animal models in accordance with many customer specifications. All of our LPTA animal models are optimized to work with our IVIS Imaging Systems.

The following table summarizes our products and services portfolio as of December 31, 2004.

Name	Components / Highlights	Number of Placements, as of December 31, 2004
IVIS Imaging Systems		
IVIS 100 Series	CCD camera, imaging chamber, computer with Living Image software, high-resolution monitor, cryogenic refrigeration unit and available with fluorescence option	140
IVIS 50 Series	CCD camera, imaging chamber, computer with Living Image software, high-resolution monitor and thermo-electric cooling unit and available with fluorescence option	20
IVIS 200 Series	CCD camera with five field of view options, integrated fluorescence capabilities, more uniform light collection, patented high-resolution lens.	29
IVIS 3D	3-dimensional images are derived from multiple views of one animal from many angles; improved optics, available with fluorescence option and structured light source	2 prototypes
Accessories	Standard and anesthesia packages	*
Extended Service Plans	Basic, Standard and Premium options	*
Reagents and Animal Models		
Bioware	Lines of light-producing cells and microorganisms: • 25 lines of microorganisms • 15 tumor cells lines	*
LPTA Animal Models	Over 20 types of LPTA animal models for areas including: • Oncology; • Inflammation; • Metabolic disease; and • Neuroinflammatory disease	*

* This item is available with our imaging systems; numbers of placements vary.

Sales and licensing model. Use of our imaging technology requires a license granting the right to practice under our patents. We typically grant such a license concurrently with the purchase of one or more imaging systems from us. We offer three forms of licenses:

- individual imaging system license agreements;
- enterprise-wide imaging licenses; and
- academic licenses.

Our business model is based on one-time sales of our IVIS Imaging Systems and accessories and a recurring revenue stream for a license fee to use our imaging technology. We may also receive recurring revenue based on sales of our LPTA animal models and Bioware. Commercial customers pay up to $250,000 per year per IVIS Imaging System for a license to practice under our patents. A typical commercial license for our biophotonic imaging technology runs for three to five years, although these licenses often are renewable annually and no assurances can be given as to the certainty of those renewals for the entire multi-year term of each license agreement. We also offer enterprise-wide imaging licenses, which are negotiated on a case-by-case basis. We currently have one such license in place, which expires in 2005 but may be renewed for an annual fee of $1.5 million. We base our licensing fees both on the size of the company and the number of imaging systems in use within a company. Since we first began licensing our biophotonic imaging technology in 2000, the majority of

our customers have extended, and even expanded, their relationship with us. Currently, academic customers do not pay a fee for an imaging license used for non-commercial purposes. We also grant the right to use our light-producing cells and microorganisms and LPTA animal models under an annually renewable license agreement.

Contract Research and Transgenic Animal Services

We perform research projects and studies for our customers on a contract basis, including compound profiling and animal model research and development. In addition, we provide professional services relating to the production of transgenic and gene knockout animals. We offer a portfolio of transgenic animals for use by researchers in a wide range of research and drug discovery and development areas.

Most of this work is performed through our wholly-owned subsidiary, Xenogen Biosciences Corporation, and entails contracts for which the performance extends over multiple years. For example, Xenogen Biosciences and Pfizer Inc. entered into two separate collaborative research agreements in 2000 and 2001 under which we received funding from Pfizer to develop a comprehensive mouse phenotyping protocol, to develop and test that protocol on certain genetically engineered mice and to create, house, breed and genotype genetically engineered mice for use in Pfizer's phenotyping program. Both agreements have been extended annually by Pfizer and were recently renewed in December 2004.

Xenogen Biosciences also was awarded a contract in September 2003 from the National Institute of Environmental Health Sciences, or NIEHS, to generate and characterize up to 100 lines of knockout mice over a potential five-year term. The NIEHS will provide Xenogen Biosciences with the list of specific genes that it desires to have "conditionally knocked-out," and Xenogen Biosciences will perform the subsequent work required to generate those mice. Xenogen Biosciences then will initiate the development work on at least twenty-three of those lines prior to the end of September 2005. Thereafter, the NIEHS may renew the contract for three successive one-year terms, with at least thirty mouse lines to be generated in year 2 and at least forty-five lines to be generated in each of years 3 and 4.

Through Xenogen Biosciences, we also offer a comprehensive phenotyping program that includes over 60 standardized and validated bioassays, or challenge assays, designed to profile key physiological pathways associated with various disorders, including allergic diseases, arthritis, cardiovascular diseases, diabetes, immunology/inflammation, obesity, osteoporosis, pain, psychiatric disorders, sexual health, and urological disorders. Most importantly, Xenogen Biosciences' proprietary techniques allow our scientists to perform multiple assays on a group of animals, maximizing the data set per animal without compromising its integrity, resulting in fewer animals used and less time required.

Sales and Marketing

Direct sales. We sell our products and services principally through our direct sales and marketing organization. Our sales force is organized into three groups related to customer focus: large pharmaceutical companies; biotechnology and other pharmaceutical companies; and academia and research. We are expanding our direct sales and marketing efforts to include additional regional sales representatives in the U.S. and Europe and additional technical field representatives. We also have a biology and physics customer service and support team involved in the selling effort. Most of these individuals have Ph.D. degrees in biology, biochemistry or physics, and provide support for the sales and marketing team and provide customer service in the areas of biology and physics. We generate customer leads through presentations, exhibiting at and attending scientific and partnering meetings, trade shows, publications and advertisements in scientific journals. We also receive many qualified leads through our website, targeted promotional efforts to strategic accounts and referrals from current customers. We offer customer support through our internal and field research scientists and business development specialists.

Distributors. While we intend to focus on sales in the United States utilizing our direct sales force, we believe that certain markets outside the United States are best served by working through local distributors. In

January 2003, for example, we entered into a distribution agreement with SC BioSciences Corporation for the Japanese market. Subsequently, we entered into distributor agreements covering Taiwan, Korea, China, India, Israel, Australia, New Zealand, Germany, Austria and Switzerland. Under these agreements, the distributors also will assume responsibility for installation and post-sales support of our imaging systems. To date, sales under these agreements have been limited.

Marketing agreement. In January 2000, we entered into a long-term agreement with Taconic Farms, one of the largest providers of laboratory animals in the world, for joint marketing and distribution of certain transgenic animals with a single luminescence reporter gene compatible with our imaging technology. Taconic may sell those animals only to licensees of our imaging patents and under limited use agreements. We granted to Taconic the right to breed, distribute and sell certain LPTA animal models to its customers and we share in profits received from their sale. This agreement terminates in January 2010 unless terminated earlier due to a material uncured breach of contract or by mutual agreement.

Research and Product Development

Our objective is to continue development of our IVIS Imaging Systems and to increase the number of animal models by leveraging both internal and external research efforts.

Instrumentation and software. Our physics research and development department, in conjunction with our biology product planning group, is responsible for new product and application development. New product concepts for associated hardware are evaluated by our physics research and development department, and those chosen are taken from concept through the pre-production prototype stage. This department also works closely with our instrumentation department to transition the pre-production prototype to full production provides initial user support and any required design modifications and develops and provides initial support for new applications of our instrumentation (e.g., fluorescent imaging, spectral imaging, etc.) until such applications are sufficiently developed for transition to our instrumentation department.

Reagents and bioware. Our biology product planning group is responsible for determining new animal models to be developed that have value to the pharmaceutical industry, for creating these animal models and for testing these animal models in our IVIS Imaging Systems. Our biology product planning group produces these validated new applications (animal models) from three different sources: we in-license and perform quality control on reagents that have already been made by others for conventional methodologies that complement our noninvasive imaging methodology; we build and validate proprietary models in our research laboratories; and we retain rights to animal models made by certain of our customers who use our technology. By using these strategies, we are able to leverage a material amount of research and development expenditures of third parties.

Research and development infrastructure. We have internal legal and scientific expertise for our in-licensing program. We have biological scientists that work together with our physicists and tissue optics experts to create animal models in oncology, inflammation and drug metabolism and toxicology. We also employ a technical applications group to interact at the scientific level with our customers to understand and access technology developed in our customers' laboratories and to help our customers understand new applications that we have acquired or developed.

We spent approximately $14.1 million for research and development in 2002, $11.9 million in 2003 and $12.5 million in 2004.

Instrument Manufacturing, Animal Production and Reagents

Instrument Manufacturing

We currently perform the engineering design, prototyping, assembly, quality assurance, installation and service for all of our IVIS Imaging Systems. We use OEM providers for the various parts of the imaging systems

including the cameras, boxes, certain subassemblies, filters and lenses. Two of these providers, Andor Technology, Ltd. and Spectral Instruments, Inc., provide us with cameras for all of our IVIS Imaging Systems. Under the Andor supply agreement, Andor manufactures and sells to us a CCD camera and related equipment for use with the IVIS Imaging System 50 Series. The two-year, renewable agreement may be terminated upon a breach by either party, bankruptcy or insolvency or if Andor ceases to manufacture these products. Under the Spectral Instruments supply agreement, Spectral manufactures and sells to us a CCD camera for our other imaging systems. That agreement was automatically renewed in October 2004 for an additional 18-month period and will continue to renew for additional 18-month periods unless explicitly terminated by either party six months prior to the expiration date or unless there is an uncured breach, bankruptcy or insolvency of either party. The majority of our quality assurance process has been automated. Our instrumentation employees currently are classified as either prototyping and manufacturing or physics and software product development, including administrative and inventory assistance. We have customary manufacturing design and inventory shipping processes in place to ensure that we can reliably deliver systems to our customers.

We believe our current capacity within manufacturing can produce approximately 130 IVIS Imaging Systems per year. We intend, however, to expand our production capacity in 2005. This growth in imaging systems and accessory production includes increasing our current manufacturing facilities from 8,000 to 22,000 square feet, and also may include an increase in subassembly contractors over the next several years.

Animal Production

We maintain separate animal vivaria to prevent the spread of disease, which could cause a loss of valuable strains of animals. In addition, those animals most widely used by our customers are also housed by two outside vendors, Charles River Laboratories and Taconic. In Cranbury, New Jersey, our leased facility includes a large barrier animal vivarium that is certified by the Association for the Assessment and Accreditation of Laboratory Animal Care, or AALAC. In this facility, we perform animal production and phenotyping. We ship animals and provide animal services to our customers from this facility. We have animal resources personnel specially trained in animal care and handling who provide services to our customers and our internal scientists. Our Alameda, California facility has one vivarium and a separate animal imaging suite. We perform breeding and model validation in this facility and have an animal resources program with personnel specially trained in animal care and handling. Each facility has individual environmental controls, as well as a veterinary consultant to assist us in monitoring the health of our animal population.

Reagents

We maintain laboratory space in our Alameda facility to create and maintain stocks of our microorganism and cell line reagents. We have an exclusive supply agreement with Biosynth International, Inc. for the supply of Luciferin, a chemical compound that is introduced into cells and organisms in order to produce bioluminescence, and which we, and our customers, use with our Bioware and LPTA animal models.

Intellectual Property

We have implemented an international patent strategy intended both to provide us with freedom to operate, and to facilitate commercialization of our current and future products. As of March 1, 2005, we owned eleven issued U.S. patents, have received notices of allowance for three of our U.S. patent applications, and exclusively licensed several other issued and allowed patents. We also have over twenty additional U.S. patent applications pending. We also hold non-exclusive licenses to several patents that apply to our current business or that we may incorporate into future products.

We believe our extensive patent portfolio presents a significant barrier to entry for the commercial practice of our biophotonic imaging method and production of light-producing transgenic animals. Our patent portfolio for imaging is built on two foundations: methods, applications and materials relating to the biological aspects of

biophotonic imaging; and methods and apparatus relating to the instrumentation aspects of biophotonic imaging. Our patent portfolio for the production of genetically modified animals is built on a foundation of exclusive and non-exclusive licenses for basic methods of animal production, as well as non-exclusive licenses for additional techniques and approaches that add value and produce specific types of modified animals. We seek to maintain, through internal development or in-licensing, patents that encompass our major technology areas, which are aligned with our products and services: methods and applications of *in vivo* biophotonic imaging (technology licenses), imaging system components and computer-implemented methods for image acquisition and analysis (IVIS Imaging Systems and Living Image software), composition and use of transformed cells and organisms for *in vivo* biophotonic imaging (Bioware and LPTA animal models), and production of genetically engineered laboratory animals (animal production services and LPTA animal models). In addition to our foundational claims for methods of biophotonic imaging, our patent portfolio includes issued and pending patent claims for specific applications of biophotonic imaging and a number of areas that we believe will be valuable to our business, including, by way of example: animal models of disease, transgenic animals useful in drug discovery research, imaging system components and computer-implemented methods for image acquisition and analysis. However, U.S. patents filed since 1995 generally have a term of 20 years from the date of filing. In the life sciences industry, it often takes several years from the date of filing of a patent application to the date of a patent issuance, often resulting in a shortened period of patent protection, which may adversely affect our ability to exclude competitors from our markets.

We license from third parties several patents that are important to our business. Our core imaging patents and related applications are licensed from Stanford University on an exclusive basis. The license is worldwide, royalty-bearing and includes the right to grant sublicenses. The term of this license is for the life of the patents resulting from the applications, which do not begin to expire until 2015. One of the patents that we have licensed from Stanford covering our method of *in vivo* biophotonic imaging was subject to a re-examination proceeding before the U.S. Patent and Trademark Office. The re-examination concluded in 2004, and the Patent and Trademark Office issued a re-examination certificate for that patent with slightly narrowed claims. Such narrowed claims do not affect our current licenses or business.

The right to use the specific luciferase gene in our LPTA animal models and certain of our Bioware is licensed from Promega Corporation and The Regents of the University of California under non-exclusive, royalty-bearing licenses. The Promega agreement runs through the life of the subject patent, which expires in 2014. Promega, however, may terminate the agreement for breach of contract and we may terminate the contract in the event that we no longer use the luciferase gene. The Regents agreement runs through the life of those subject patents, which expire in 2013; however, The Regents may terminate the agreement for breach of contract or failure to sufficiently commercialize luciferase-bearing products, and we may terminate in the event we no longer use luciferase.

Our patent relating to the production of transgenic animals (through pronuclear microinjection techniques) is licensed from Ohio University. This license was granted on an exclusive basis, is royalty-bearing and includes the right to grant sublicenses. The term of the license is for the life of the patent, which is due to expire in late 2006. Our patents relating to the production of genetically-engineered animals by using gene-targeting methods have been licensed from Medarex, Inc. (successor-in-interest to GenPharm International, Inc.) since 1991. This license is non-exclusive, royalty-bearing and worldwide. Other financial terms include a license issue fee, an annual fee (creditable against earned royalties due) and a milestone fee in the event the FDA approves a pharmaceutical product that includes a product produced through practice under the licensed patents. As further consideration, Medarex received a royalty-bearing cross-license to practice under the patent we have licensed from Ohio University. The term of this license is for the life of the licensed patents, which are set to expire in 2014.

We have applied for, and received, registration of several trademarks in the U.S. and in foreign markets where our products are sold, including our logo, IVIS, LIVING IMAGE, LPTA, BIOWARE and XENOGEN.

Competition

Our primary competition is from traditional *in vivo* animal models. While numerous technologies for animal analyses exist, we believe we are the only company to offer an integrated system of equipment, software and reagents for the biophotonic imaging of animals. Although we believe we have significant intellectual property protection to prevent others from developing competing integrated products, there are other manufacturers of similar individual technologies.

Light-producing animal models. There are approximately 300 light-producing animal models currently used in conventional applications, many of which can be used in our IVIS Imaging Systems. Producers of these models, generally biomedical researchers at not-for-profit institutions, would require one or more licenses from Xenogen and third parties to commercialize these models for biophotonic imaging. Consequently, these models comprise a sizable pool of potential in-licensing candidates for us.

Imaging. We compete with conventional molecular imaging technologies including clinical imaging modalities, such as PET, MRI, x-ray CT and SPECT, which utilize the penetrating radiation of positrons, radio waves, x-rays and gamma rays. Most of these technologies require trained teams of technicians to operate and are subject to complications resulting from high signal-to-noise ratios caused by penetrating multiple layers of tissue. In addition, some are limited by the need for radioactivity and concomitant shielding, storage and disposal issues and others image anatomy, rather than gene expression. By comparison, our *in vivo* bioluminescent imaging technique involves an optical imaging approach where light originates internally, greatly enhancing visualization and reducing noise, and does not require the use of specially trained technicians or radioactive substances. Compared to these other imaging technologies in which one animal is imaged over time, we have an imaging methodology that allows for relatively high-throughput protocols and data collection.

Biophotonic cameras. Several companies sell highly sensitive cameras capable of biophotonic imaging, including Eastman Kodak Company, Berthold Detection Systems GmbH, Hamamatsu Photonics, K.K. and Roper Scientific, Inc. While these cameras have similar features and imaging capabilities to our IVIS Imaging Systems, none of those companies have the right to sell their cameras for applications claimed by our patents.

Light-producing reagents. Our competitors who develop light-producing reagents used in animal models include major companies such as GE Healthcare Discovery Systems and Invitrogen Corporation. We have agreements in place with Promega Corporation and The Regents of the University of California, under which we non-exclusively sublicense several patents on a royalty-bearing basis for use of a modified firefly luciferase gene in living organisms, such as our LPTA animal models and certain of our Bioware. Other companies must obtain similar licenses from those two entities in order to use that gene as a tagging reagent in animal models for commercial purposes. Other companies can, however, create animal models using alternative technologies that do not contain luciferase.

In vivo animal analysis. We also compete with companies that conduct *in vivo* animal analysis, including Lexicon Genetics and Exelixis, Inc. Lexicon uses animal models based on knockout mice technology, whereas Exelixis uses other organisms, such as fruit flies, zebra fish, worms and yeast. Both companies, however, primarily focus on developing their own pipeline of therapeutic products, rather than providing *in vivo* animal products and services to third parties. We believe that our animal models in combination with biophotonic imaging technology allow for more predictive data. Additionally and in contrast to Xenogen, neither of these companies offers a complete package of instrumentation and reagents for use in preclinical development.

In silico analysis. In addition to companies that perform *in vivo* animal analysis, we also compete with companies that conduct *in vitro* analysis, including Predix Pharmaceuticals, formerly Physiome Sciences, Scimagix and Entelos. Each of these companies offers *in silico*, or in computer, technology that enables large-scale computer models of human disease. While *in silico* technologies have helped accelerate the drug discovery process, these technologies generally assess only one biological parameter and, consequently, they are not representative of the complex biological systems present in humans. As a result, the information generated has limited predictive value.

Although we believe our integrated system of instruments and equipment, software and reagents improve the productivity and efficiency of drug discovery and development, the up-front costs and licensing fees associated with our products make their use generally more expensive than conventional technologies for *in vivo* testing.

Phenotyping. Although many pharmaceutical companies perform these efforts internally, there are a small number of companies that offer phenotypic analysis of animal models on a fee-for-service basis, including Jackson Laboratories, Charles River Laboratories, and RIKEN Yokahama Institute-Genomic Sciences Center. However, we believe that Xenogen Biosciences offers greater breadth and scope of pharmacologically-validated bioassays and challenge assays. Additionally, we believe that the proprietary nature of Xenogen Biosciences' phenotyping program services presents customers with services that use fewer mice, and therefore are more cost-efficient, than those offered by competitors or those available to large pharmaceutical companies from in-house staffs.

Government Regulation

Our IVIS Imaging Systems and reagents are not regulated by any governmental agency. Our line of business associated with animal production, however, may, in the future, be subject to various laws and regulations regarding the treatment of animals if the federal Animal Welfare Act, or AWA, is amended. The AWA does not currently apply to rats of the genus Rattus or mice of the genus Mus, bred for use in research, and consequently, we are not currently required to be in compliance with the AWA. Where applicable, the AWA imposes a wide variety of specific requirements on producers and users of research animals, including requirements related to personnel, facilities, sanitation, cage size, feeding, watering and shipping conditions. Although the AWA does not currently apply to our animal production business, we have voluntarily sought and received accreditation by the Association for Assessment and Accreditation of Laboratory Animal Care International, or AAALAC, which sets industry standards for care and treatment of animals used in research. In the event that the AWA is amended to include mice or rats within the scope of regulated animals, and consequently, our animal production business, we believe compliance with such regulations would require us to modify our current practices and procedures, which could require significant financial and management resources. We are not currently aware of legislation pending before the U.S. Congress to amend the AWA to cover the mice or rats used by Xenogen. In addition, some states have their own regulations, including general anti-cruelty legislation, which establishes certain standards in handling animals. With respect to the products and services we provide overseas, we also have to comply with foreign laws, such as the European Convention for the Protection of Animals During International Transport and other anti-cruelty laws. The Council of Europe is presently considering proposals to more stringently regulate animal research.

Many of our pharmaceutical and biotechnology licensees employ our technology to develop preclinical animal data on therapeutic products in development that may be submitted to governmental agencies as part of a regulatory application to commence human clinical testing or to commercialize their products. To date, preclinical data collected using our technology has been submitted by one of our clients and accepted by the FDA to support commencement of clinical trials. Currently, none of our clients has obtained regulatory approval for a therapeutic product based, in part, on data collected using our technology. There can be no assurance that the FDA or other regulatory agencies will continue to accept preclinical data collected using our technology and submitted as part of an application to support initiation of clinical trials, or that such data can or will be used to support regulatory approval to commercialize therapeutic products.

Additionally, exports of our IVIS Imaging Systems and biological reagents to foreign customers and distributors are governed by the International Traffic in Arms Regulations, the Export Administration Regulations, the Patriot Act and the Bioterrorism Safety Act. Although these laws and regulations do not restrict our present foreign sales programs, there can be no assurance that future changes to these regulatory regimes will not affect or limit our foreign sales.

Our research and development activities involve the controlled use of hazardous materials and chemicals. We are subject to federal, state and local laws and regulations governing the use, storage, handling and disposal

of such materials and certain waste products. Although we believe that our safety procedures for handling and disposing of such materials comply with state and federal laws and regulations, the risk of accidental contamination or injury from these materials cannot be completely eliminated. In the event of such an accident, we could be held liable for any damages that result and any liability could exceed our resources.

Employees

At December 31, 2004, we had a total of 157 full-time employees. None of our employees are represented by a collective bargaining agreement, and we have never experienced any work stoppage. We believe that our employee relations are good.

Seasonality

In general, our revenue is subject to seasonal variations. Our customers are from the biomedical research community and the biopharmaceutical industry, and our revenue recognition is closely tied to the timing of their budget cycles. In the biomedical research community, grant proposals are due in October, February and June with funds delivered the following June, October and March, respectively. We recognize most of our revenue from sales to biomedical institutions when we install cameras, which, due to the grant cycle, usually occur in the second and fourth quarters. In the biopharmaceutical industry, traditionally, there are two decision-making cycles: one in January or July when budgets are planned, and the second in November or December when appropriated funds must be spent or returned to the general budget. As a result, agreements are commonly entered into in the second and fourth quarters, which follow the beginning of the budget cycle. Therefore, historically our revenue is elevated in the second and fourth quarters as compared to the first and third quarters. We generally also see a decrease in the third quarter due to vacation schedules in the summer, especially with respect to our European and academic customers.

Where You Can Find More Information

We file annual, quarterly and special reports, proxy statements and other information with the SEC under the Exchange Act. You can inspect and copy our reports, proxy statements, and other information filed with the SEC at the offices of the SEC's Public Reference Room located at 450 Fifth St., NW, Room 1024, Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the Public Reference Rooms. The SEC also maintains an Internet website at http://www.sec.gov where you can obtain most of our SEC filings. You also can inspect our reports, proxy materials and other information at the offices of the Nasdaq Stock Market at 1735 K Street NW, Washington, D.C. 20006. In addition, you can obtain copies of these reports by contacting investor relations at (510) 291-6100.

Item 2. Properties.

Our principal administrative and research and development activities are located in Alameda, California. We currently lease and occupy a total of approximately 120,600 square feet in three facilities. Our facilities currently include a 60,900 square foot combined office, wet laboratory, vivarium and light manufacturing space in Alameda, California under a lease expiring in February 2006, a 57,800 square foot facility in Cranbury, New Jersey that includes a combined office, wet laboratory, vivarium and expansion space under a lease that expires in October 2009, and a 25,000 square foot facility of combined office, wet laboratory, vivarium and expansion space in St. Louis, Missouri, which is currently unoccupied and which we intend to sublet. We believe that we have adequate space to accommodate our business plans for our current needs.

On March 2, 2005, we concurrently entered into two amendments to existing real estate operating leases and one new real estate operating lease in Alameda. One amendment extends the term of one lease for an additional term of five years commencing on March 1, 2006 and ending February 28, 2011 and the other amendment provides for and requires the early relocation from one facility to the new lease location. The new real estate

lease is for approximately five years and ten months with two options to extend the term each for an additional five-year period. Under the new lease amendments and agreements our overall facility square footage in Alameda will be approximately 54,900 square feet.

Item 3. Legal Proceedings.

On August 9, 2001, AntiCancer, Inc. filed a lawsuit in the Superior Court of California, County of San Diego, against us and other third parties. The complaint alleges five causes of action, including trade libel, defamation, intentional interference with contract, intentional interference with prospective economic advantage and unfair competition. These claims are based on alleged false statements made by unidentified employees and/or third parties regarding AntiCancer's products. AntiCancer seeks unspecified general and exemplary monetary damages arising from the alleged impact of the alleged false statements, as well as its costs and expenses incurred in connection with the lawsuit. The Court recently denied our motion for summary judgment of the case, and trial is scheduled to begin on September 19, 2005. We believe the complaint is without merit and are mounting a vigorous defense.

On March 7, 2005, AntiCancer filed a lawsuit against us in the U.S. District Court for the Southern District of California alleging infringement of five patents of AntiCancer. The complaint seeks damages and injunctive relief against the alleged infringement. We intend to vigorously defend ourselves against such infringement claims, including contesting the validity of AntiCancer's patents. Even if we prevail in these lawsuits, the defense of these or similar lawsuits will be expensive and time-consuming and may distract our management from operating our business.

From time to time we are involved in litigation arising out of claims in the normal course of business. Based on the information presently available, management believes that there are no claims or actions pending or threatened against us, the ultimate resolution of which will have a material adverse effect on our financial position, liquidity or results of operations, although the results of litigation are inherently uncertain, and adverse outcomes are possible.

Item 4. Submission of Matters to a Vote of Security Holders.

No matters were submitted to a vote of stockholders during the fourth quarter ended December 31, 2004.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

Our common stock began trading on the Nasdaq National Market under the symbol "XGEN" on July 16, 2004. The following table sets forth the high and low sales prices for our common stock as reported by the Nasdaq National Market for the periods indicated below.

	High	Low
2004		
Third Quarter (July 16, 2004 through September 30, 2004)	$8.15	$6.01
Fourth Quarter	$7.30	$5.05

On March 4, 2005, the last reported sale price of our common stock was $6.58 per share. As of March 4, 2005, there were approximately 135 holders of record of our common stock. Since our incorporation, we have never declared or paid cash dividends on our capital stock and do not expect to do so in the foreseeable future. We currently intend to retain all available funds for use in the operation and expansion of our business. In addition, we are restricted from paying dividends, other than dividends payable solely in stock, under the terms of our credit facility.

Use of Proceeds

On July 21, 2004, we completed our initial public offering of 4.2 million shares of our common stock at a price of $7.00 per share. The offering was made pursuant to our Registration Statement on Form S-1 (File No. 333-114152), which was declared effective by the Securities and Exchange Commission on July 15, 2004, and pursuant to which shares were offered on July 16, 2004. The offering provided net proceeds to us of approximately $24.9 million, which is net of underwriters' discounts and commissions of approximately $2.1 million, and related legal, accounting, printing and other expenses totaling approximately $2.4 million.

We have used and intend to continue to use the proceeds from the offering for use in the operation and expansion of our business.

Equity Compensation Plan Information

Information regarding securities authorized for issuance under equity compensation plans will be included in the proxy statement for our 2005 Annual Meeting of Stockholders under the section titled "Executive Compensation."

Item 6. Selected Consolidated Financial Data.

The following consolidated statement of operations and consolidated balance sheet data have been derived from our consolidated financial statements. The information set forth below is not necessarily indicative of the results of future operations and should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the Consolidated Financial Statements and related Notes included as Items 7 and 8 in this Form 10-K.

	Years Ended December 31,				
	2004	2003	2002	2001	2000
	(in thousands, except per share data)				
Consolidated Statement of Operations Data:					
Revenue	$ 30,883	$ 20,063	$ 16,014	$ 13,244	$ 4,137
Cost of revenue and operating expenses	52,750	40,058	47,209	48,310	22,623
Loss from operations	(21,867)	(19,995)	(31,195)	(35,066)	(18,486)
Other income (expense), net	90	(552)	(451)	369	870
Loss before cumulative effect of an accounting change	(21,777)	(20,547)	(31,646)	(34,697)	(17,616)
Cumulative effect of an accounting change—impairment of goodwill (a)	—	—	(30,906)	—	—
Net loss	(21,777)	(20,547)	(62,552)	(34,697)	(17,616)
Preferred stock dividends	—	(5,629)	(2,230)	(4,429)	—
Accretion of redeemable convertible preferred stock	—	(344)	(1,045)	(475)	—
Net loss attributable to common stockholders	$(21,777)	$(26,520)	$(65,827)	$(39,601)	$(17,616)
Share data (basic and diluted)					
Net loss attributable to common stockholders excluding cumulative effect of an accounting charge per share—impairment of goodwill	$ (2.99)	$ (33.89)	$ (63.86)	$ (72.51)	—
Cumulative effect of an accounting change—impairment of goodwill	—	—	(56.52)	—	—
Net loss attributable to common stockholders	$ (2.99)	$ (33.89)	$(120.38)	$ (72.51)	$ —

(a) Impairment of goodwill resulting from write-offs of goodwill relating to acquisition of Chrysalis DNX Transgenic Services Corp. and adoption of SFAS 142 in 2002.

	As of December 31,				
	2004	2003	2002	2001	2000
Consolidated Balance Sheet Data:					
Cash, cash equivalents and short-term investments	$21,916	$13,546	$ 6,670	$ 28,119	$ 28,855
Working capital (b)	14,071	6,314	(2,498)	20,636	21,805
Total assets	39,938	31,559	24,305	82,450	81,460
Deferred revenue	8,638	9,918	5,095	4,958	5,016
Long-term obligations	1,054	5,182	3,158	4,354	3,340
Redeemable preferred stock	—	—	114,941	110,619	81,693
Convertible preferred stock	—	66	1	1	—
Total stockholders' equity (deficit)	15,947	8,190	(109,544)	(45,467)	(14,014)

(b) Includes short-term portion of long-term obligations

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operation.

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the Consolidated Financial Statements and related Notes included in Item 8 in this Form 10-K.

Overview

We sell integrated systems of instruments and equipment, software and reagents to biomedical and biopharmaceutical researchers that we believe improve the productivity and efficiency of the drug discovery and development process. Using the detection and measurement of photons emitted from cells and animals that we genetically engineer to emit light, which we term "biophotonic imaging", our patented and proprietary biophotonic IVIS Imaging Systems, living animal models and research services collectively expedite *in vivo* data collection and analysis, a critical bottleneck in drug discovery and development. Our customers use *in vivo* biophotonic imaging to visually display and quantify a chosen tumor, disease, pathogen, organ or biochemical reaction. Our products are also used to create predictive animal models, primarily rats and mice, for preclinical drug discovery and development. We believe our products enable our pharmaceutical and biotechnology customers to generate higher-quality safety and efficacy data for drug candidates, to accelerate preclinical development and to reduce the development risk of product candidates that enter human clinical development. The sources of our revenue are:

- *Instruments and related imaging accessories*: sales of IVIS Imaging Systems and accessories;
- *Recurring license fees*: multi-year fees for our biophotonic imaging licenses and access to reagents such as animals and cell lines; and
- *Long-term service contracts*: custom animal production, animal phenotyping and IVIS service contracts.

We manufacture, market and sell our IVIS Imaging Systems, as well as the reagents—pathogens and tumor cells, or "Bioware", and light-producing transgenic animals, or "LPTA animal models"—that allow our customers performing biopharmaceutical and biomedical research, discovery and development to collect safety, efficacy and other relevant data on product candidates. Our reagent sales are comprised of genetically modified animals (mice and rats) and cell lines that are used to characterize the role of genes in the disease process as well as to measure the efficacy of potential drugs against certain sets of disease indications. We also provide a wide range of contract research services relating to the production of transgenic animals (in which foreign genes are incorporated) and knockout animals (in which specific genes are functionally disabled). In addition, we provide custom animal production and phenotyping services to our customers for the purpose of target validation and compound screening. Our product offerings allow our customers to gather data in living animals about biochemical pathways, the mechanism of action of drug candidates and how well these drug candidates work in living organisms.

We commenced sales of our IVIS Imaging Systems in 2000 and our animal models in 2001 and our revenues have grown each year. Our revenues were $30.9 million in 2004, $20.1 million in 2003 and $16.0 million in 2002. We expect our revenues to increase in 2005, although not at the same rate as in prior years. The gross margins for our products and services vary. Gross margins on one-time fees related to sales of our IVIS instruments and accessories averaged over 38% over the last three years, and gross margins on our revenue generated from licensing fees averaged over 86% over the same period. We anticipate that gross margins for our instruments and accessories will improve as we expand our manufacturing capacity and utilization. Gross margins for our custom animal production and phenotyping services vary significantly based on the type of service provided, and we currently have a breakeven gross margin on contract revenue due to underutilization of our production facilities. We sell our products and services directly to our customers and through independent distributors who sell our IVIS Imaging Systems outside the U.S.

Since inception, we have been unprofitable. We incurred net losses of approximately, $21.8 million in 2004, $20.5 million in 2003 and $62.6 million in 2002. As of December 31, 2004, we had an accumulated deficit of

$167.7 million. As a company in the early stage of commercialization, our limited history of operations makes prediction of future operating results difficult. We believe that period to period comparisons of our operating results should not be relied on as predictive of our future results.

In November 2000, in exchange for preferred stock, we acquired all the outstanding shares of Chrysalis DNX Transgenic Sciences Corporation, or DNX, renamed Xenogen Biosciences Corporation, now our wholly owned subsidiary. In 2002, we recorded an impairment of goodwill for this acquisition of $30.9 million. In September 2001, we acquired leasehold improvements and certain other tangible assets relating to a transgenic animal facility located in St. Louis, Missouri, from Incyte Genomics, Inc., or Incyte, for a total consideration of $0.3 million. In addition, we acquired a license to certain patents for a one-time fee of $0.7 million. In 2002, we closed the St. Louis facility and recorded a restructuring charge.

Seasonality. Our revenue is subject to seasonal variations. Our customers are from the biomedical research community and the biopharmaceutical industry, and our business is closely tied to the timing of their budget cycles. In the biomedical research community, grant proposals are due in October, February and June with funds delivered the following June, October and March, respectively. We recognize most of our revenue from sales to biomedical institutions when we install cameras, which, due to the grant cycle, usually occur in the second and fourth quarters. In the biopharmaceutical industry, there are traditionally two decision making cycles: one in January or July when budgets are planned, and the second in November or December when appropriated funds must be spent or returned to the general budget. As a result, agreements are commonly entered into in the second and fourth quarters, which follow the beginning of the budget cycle. Therefore, historically our revenue is higher in the second and fourth quarters as compared to the first and third quarters. We generally also see a decrease in the third quarter due to vacation schedules in the summer, especially with respect to our European and academic customers.

Critical Accounting Policies and Estimates

Our discussion and analysis of our financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the U.S. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses. The following discussion includes explanation of our most critical policies, as well as the estimates and judgments involved.

Revenue recognition. Revenue is recognized when persuasive evidence of an arrangement exists, delivery has occurred or services have been rendered, the price is fixed and determinable and collectibility is reasonably assured. We generate revenue primarily from three sources: (1) sales of our IVIS Imaging Systems and associated accessories, (2) licenses for the use of our *in vivo* biophotonic imaging technology, transgenic animals and associated biological products to customers on a nonexclusive and nontransferable basis for the purposes of its application in the fields of drug discovery and/or preclinical drug development research; and (3) performance of animal creation, customized phenotyping and compound profiling services.

Our IVIS Imaging System is composed of separate hardware and software components. The hardware (non-software) component is primarily an ultra-sensitive CCD camera system affixed to a patented light-tight box. The primary software component (Living Image) enables the user to acquire, organize and view the image data captured by the camera; similar software is also available from other vendors. We allocate revenue on the sale of our IVIS Imaging Systems between software and non-software related deliverables based on fair value, and is recognized upon installation.

Revenue allocated to non-software deliverables is further allocated based on separate deliverables: (1) the camera system, (2) the technology licenses, (3) follow-on technical services, and (4) system accessories. We allocate revenue to these units of accounting based on fair value as determined by reference to the price at which it would be sold separately by us and/or other third parties. Revenue from the sale of accessories is recognized

upon delivery (i.e., transfer of title), as the functionality of add-on accessories is not contingent upon installation due to the "plug and play" nature of the accessories. Revenue associated with follow-on technical services is recognized as the services are performed.

We grant time-based technology licenses to our commercial customers. We recognize revenues from the fees, net of any customer discounts, attributable to these time-based technology licenses as earned on a straight-line basis over the term of the license. We grant royalty-free technology licenses to academic not-for-profit customers in connection with the sale of our IVIS Imaging System. The IVIS Imaging System and related perpetual technology licenses are sold as a combined unit and revenue is recognized upon installation and customer acceptance of the combined unit.

Revenue allocated to the software and related customer support is accounted for separately. The software components are recognized upon installation and acceptance of the system, as the functionality of the system is contingent upon installation due to its complex nature of the system. Post-installation customer support is deferred and amortized over a straight-line basis over the applicable customer support period.

Deferred revenue, primarily related to time-based technology licenses and software maintenance contracts, is recorded when the payments from the customer are received prior to our conclusion of performance obligations related to the payment and recognized upon completion of those performance criteria.

Revenue relating to research and development agreements is recognized as the contracted-for services are performed. Under these agreements, we are required to perform research and development activities as specified in each respective agreement. The payments received under these agreements are nonrefundable.

Because services are performed ratably over the period, contract revenue attributable to fixed price contracts is recognized on a straight-line basis over the term of the contract provided that the payments are nonrefundable and are based on an agreed upon schedule. Certain agreements may define specific milestones and the payments associated with each milestone. Such payments are recognized as revenue upon achievement of the milestone events, after which we have no future performance obligations to this payment. Any payments received in advance of the completion of the milestone are recorded as deferred revenue.

Accounts receivable allowances. We have experienced few delinquency issues surrounding payment for products and services as our sales to date have been largely to large pharmaceutical companies, academic and research institutions. Consequently, we maintain limited allowances for doubtful accounts. We have not experienced significant credit loss from our accounts receivable, licenses, grants and collaboration agreements, and none are currently expected. We perform a regular review of our customer activity and associated credit risks and do not require collateral from our customers. We are currently fully reserved for Value Added Tax (VAT) for our sales in foreign countries where we are not VAT registered. We are undertaking the proper registration process in order to recover amounts relating to previous sales but may not fully recover our reserve.

Excess and obsolete inventory. We have limited inventory reserves for estimated obsolescence or unmarketable inventory as our product mix is relatively new and our historical inventory turnover has been consistent with our assumptions about future demand and market conditions. We rely on several companies as the sole source of various materials used in our manufacturing process. Any interruption in the supply of these materials could result in the failure to meet customer demand.

Stock-based compensation. We currently use the intrinsic value method to measure compensation expense for stock-based awards to our employees. Under these provisions, when the exercise price of our employee and director stock options equals the market price of the underlying stock on the date of grant, no compensation expense is recognized. Stock-based compensation expense is included in the expense category in which the affected employee, officer or consultant's salary or other compensation is charged. The alternative fair value accounting method, requiring the use of option valuation models, will become mandatory beginning in the third

quarter of 2005. The effect of the alternate fair value option valuation method on our net loss, if it had been used, is disclosed in note 1 to the consolidated financial statements. In calculating such fair value, there are certain assumptions that we use consisting of dividend yield, stock price volatility, risk-free interest rate and weighted average expected life of the option.

Restructuring charges. In September 2002, we implemented a restructuring plan to bring our expenses in line with revised revenue and cash flow projections. The restructuring plan included the closure of our St. Louis facility, which was consolidated with our animal production capabilities in Cranbury, New Jersey. We also implemented a reduction in force of personnel. Through the completion date of the restructuring plan in December 2002, we recorded $3.4 million of restructuring charges. In February 2003, we implemented a further reduction in workforce at our Alameda and New Jersey sites and recorded severance costs of $0.7 million. There were no restructuring charges in 2004.

Purchased goodwill. Goodwill attributable to the acquisition of the Chrysalis DNX Transgenic Sciences Corporation, or DNX, was recorded when the acquisition occurred in 2000. Our growth expectations for DNX based on our initial assessment of the business prior to our integration and the signing of a long-term agreement with Pfizer were such that no impairment of the goodwill had been indicated. In 2002, however, the goodwill attributable to the DNX acquisition was deemed to be impaired as a result of an assessment of the business following our integration process. Accordingly, we recorded an impairment of goodwill of approximately $30.9 million, as cumulative effect of an accounting change in our consolidated statement of operations for the year ended December 31, 2002.

Accounting for income taxes. Significant management judgment is required in determining our provision for income taxes, our deferred tax assets and liabilities and any valuation allowance recorded against our net deferred tax assets. We recorded a full valuation allowance on our net deferred tax assets as of each of December 31, 2004 and 2003, due to uncertainties related to our ability to utilize our deferred tax assets in the foreseeable future. These deferred tax assets primarily consist of certain net operating loss carry forwards and research and development tax credits.

Results of Operations—2004 versus 2003

Revenue. Revenue by source for 2004 and 2003 were as follows:

	2004	2003
Revenue:		
Product	$16,411	$ 7,577
Contract	8,925	7,369
License	5,547	5,117
Total revenue	$30,883	$20,063

Total revenue increased to $30.9 million in 2004 from $20.1 million in 2003, an increase of 54%. The increase resulted primarily from increased IVIS Imaging System unit sales and the associated licensing fees. We sold a total of 83 imaging systems in 2004 compared to 44 imaging systems in 2003. Product revenue, which includes sales of imaging systems and related accessories, increased by $8.8 million in 2004 over 2003, and licensing fees for our imaging systems, increased by $0.4 million from 2003. Lastly, contract revenue, which includes revenue from our custom animal production services, increased by $1.6 million from 2003 primarily due to custom model/gene targeting activity. One customer accounted for 10% or more of our revenue in 2004, while two customers accounted for 10% or more of our revenue in 2003.

Cost of revenue. Cost of revenue increased to $20.5 million in 2004 from $12.7 million in 2003. The increase in cost of revenue primarily resulted from increased product unit sales and associated licensing fees. Our

most recent IVIS Imaging System, the 200 Series, was released for sale in December 2003. Additionally, we released numerous accessories that increased our product sales in 2004. The cost of contract revenue increased in 2004 as a result of increased contract research services. We expensed approximately $0.7 million and $0.4 million of deferred stock-based compensation in 2004 and 2003, respectively.

Gross Margin. Gross margins by revenue source for 2004 and 2003 were as follows:

	2004		2003	
Gross Margin				
Product	$ 5,591	34.1%	$3,192	42.1%
Contract	164	1.8%	(260)	(3.5%)
License	4,638	83.6%	4,388	85.8%
Total	$10,393	33.7%	$7,320	36.5%

Gross margin in 2004 decreased from 2003, primarily as a result of the new IVIS 200 Imaging System launch in 2003, which currently has a lower gross margin than our other IVIS Imaging Systems. With regard to product gross margin, the newly developed, higher cost IVIS 200 Series made up a significantly larger share of imaging systems sales in 2004 serving to increase overall unit production costs in 2004. In addition, while imaging unit sales increased from 44 units to 83 units in 2004, 77% of such systems were sold to academic/non-profit customers where average sales prices are lower than commercial sales, serving to suppress the overall increase in average unit sales price. As such, the increase in average IVIS System unit sales price in 2004 did not keep pace with the increase in unit production costs. Contract gross margin, on the other hand, was essentially flat in 2004 given the continued underutilization of capacity. Lastly, licensing gross margins deteriorated slightly as a result of fee caps with very large accounts and market forces as we penetrate smaller, more price sensitive accounts where license fees are lower.

Research and development. Research and development expense includes the development of new IVIS imaging systems, LPTA models and reagents. Research and development costs increased to $12.5 million in 2004 from $11.9 million in 2003 due to an overall increase in stock based compensation expense. We expensed approximately $1.5 million and $0.9 million of deferred stock-based compensation associated with the issuance of stock options in 2004 and 2003, respectively. In addition, there were costs associated with the development of the IVIS 3-D Imaging System in 2004. The 3-D Imaging System is expected to be released for sale in 2005.

Selling, general and administrative. Selling, general and administrative expense increased to $16.7 million in 2004 from $10.9 million in 2003. Deferred compensation costs contributed to a large part of the increase, where $2.4 million in stock based compensation was recognized in 2004 versus $0.5 million in 2003. Additionally, administrative expenses associated with operating as a public company, beginning in 2004, also contributed to the expense increase. Lastly, expanded marketing efforts associated with promotion of the new IVIS 200 imaging system contributed to the balance of the increase. We expect to see an additional expense increase in 2005 to reflect the litigation costs for the AntiCancer matters and costs for compliance with the Sarbanes Oxley Act of 2002.

Restructuring charge. Unlike 2003, there were no restructuring charges in 2004. The restructuring charge in 2003 was the result of further reduction in workforce, primarily with respect to our research activities. The termination costs associated with the 2003 restructuring amounted to $0.7 million.

Amortization of intangibles. We amortized the acquisition-related intangibles of $0.6 million in both 2004 and 2003. There were no acquisitions or write-offs with regard to intangibles in either 2004 or 2003.

Interest expense. Interest expense was $0.7 million in 2004 and remained essentially unchanged from the amount recognized in 2003. In 2003, we restructured our debt which resulted in an interest expense decrease for

both 2003 and 2004 when compared to 2002. In 2004, the interest expense impact of the Silicon Valley Bank borrowing was offset by the continued benefits of the 2003 debt restructuring and by principal payments made on other debt.

Income tax expense (benefit). We recorded no income tax expense in 2004 or 2003 due to our losses in each of these years. As of December 31, 2004, we had federal and state net operating loss carryforwards of approximately $102.3 million and $25.4 million, respectively. As of December 31, 2004, we had research and development credit carryforwards for federal purposes of $5.8 million which expire in fiscal years ended December 31, 2005 through December 31, 2024. We had research and development credit carryforwards for California purposes of $2.3 million which do not expire. The California Manufacturers' Investment credit carryforwards of $0.1 million will expire beginning December 31, 2007 through December 31, 2008. The annual usage of our net operating loss and research and development credits are subject to Internal Revenue Code Section 382 limitations due to the ownership changes. Ownership changes had occurred limiting both the net operation loss and other tax attributes and a valuation allowance is recorded for the portion that will not be utilized.

Expensing of Stock Awards.

Compensation expense is recorded on stock option grants based on the intrinsic value of the options granted, which is estimated on the date of grant and it is recognized on a graduated, accelerated basis over the vesting period, generally four years from the date of grant. Deferred stock-based compensation expense recorded in 2004 and 2003 was approximately $4.5 million and $1.8 million, respectively. The remaining deferred compensation balance of approximately $2.4 million will be amortized through 2008. We expect to record amortization expense based on the intrinsic value of the options granted for employee deferred stock-based compensation as follows.

	Amount
Deferred Compensation Amortization For the Year	
2005	$1.6 million
2006	$0.6 million
2007	$0.2 million
2008	—

The above amortization does not incorporate the estimated impact of Statement of Financial Accounting Standards No. 123 (revised 2004), *Share-Based Payment* (SFAS 123R), which will be effective for the third quarter of fiscal 2005. We are currently evaluating the impact of the new standard, including the method of implementation. We expect that there will be a material change to the amount of amortization expense recorded for deferred compensation under SFAS 123R; the standard is discussed further below in the "Recently Issued Accounting Pronouncements" section of our discussion and analysis of financial condition and results of operations.

Results of Operations—2003 versus 2002

Revenue. Revenue by source for 2003 and 2002 were as follows:

	2003	2002
Revenue:		
Product	$ 7,577	$ 5,148
Contract	7,369	6,541
License	5,117	4,325
Total revenue	$20,063	$16,014

Total revenue increased to $20.1 million in 2003 from $16.0 million in 2002. This increase resulted primarily from sales of our IVIS Imaging Systems and the associated licensing fees. There was further acceptance of our imaging technology and commercialization of our products with the release of our first generation IVIS Imaging Systems, IVIS accessories, and the IVIS 200 Series release in late 2003. Our product sales increased to 44 IVIS Imaging Systems in 2003 from 32 IVIS units in 2002, resulting in a product revenue increase of $2.4 million from 2002. Licensing fees increased by $0.8 million in 2003 over 2002 which was in line with the increase in product sales over the period. Lastly, contract revenue increased from 2002 to 2003 by $0.8 million primarily due to increases in custom model/gene targeting activity. Two customers each accounted for 10% or more of our revenue in both 2003 and 2002.

Cost of revenue. Cost of revenue increased to $12.7 million in 2003 from $12.4 million in 2002. The increase in cost of revenue from 2002 primarily resulted from increased product sales and associated licensing fees, offset by closure of our St. Louis facility in 2002. The expense related to our St. Louis facility amounted to $2.1 million in 2002. These expenses did not continue past 2002 following the closure of the facility. The sales volume increase of 12 IVIS Systems from 2002, offset most of the restructuring savings. The cost of contract revenue decreased significantly from 2002 due in large part to the elimination of facility related costs associated with the St. Louis operation closure under the 2002 restructuring. We expensed approximately $0.4 million of deferred stock-based compensation associated with the issuance of stock options in both 2003 and 2002.

Gross Margin. Gross margins by revenue source for 2003 and 2002 were as follows:

	2003		2002	
Gross Margin				
Product	$3,192	42.1%	$ 2,374	46.1%
Contract	(260)	(3.5%)	(2,604)	(39.8%)
License	4,388	85.8%	3,867	89.4%
Total	$7,320	36.5%	$ 3,637	22.7%

Gross margin improved overall in 2003 from 2002 mainly due to higher R&D collaboration and animal production contract revenue volume and the effect of the restructuring, which included the closure of the St. Louis facility. The restructuring allowed for better utilization of the Cranbury, New Jersey facility and allowed for staff productivity gains. Product margin performance in 2003, however, offset some of the total margin improvement in 2003. Despite the increase in IVIS Imaging System sales to 44 units in 2003 from 32 in 2002, the mix of units sold included the more sophisticated, higher cost IVIS 200 model launched at the end of 2003. Sales of the new IVIS 200 units were weighted more heavily toward academic/non-profit sector customers where pricing was discounted relative to other sectors. Given the new launch and sales mix, the lower margins on the IVIS 200 reduced overall product margin performance. Lastly, licensing margins offset some of the total gross margin gains in 2003 as well.

Research and development. Research and development expense includes the development of new IVIS imagines systems, LPTA models and reagents. Research and Development costs decreased to $11.9 million in 2003 from $14.1 million in 2002 due to the restructuring in late 2002 and the ramp-down in development costs for the IVIS 200 system, which was released for sale in late 2003. We expensed approximately $0.9 million of deferred stock-based compensation associated with the issuance of stock options in both 2003 and 2002.

Selling, general and administrative. Selling, general and administrative expense decreased to $10.9 million in 2003 from $12.6 million in 2002 due to the closure of our St. Louis facility and the reduction in company-wide general and administrative headcount. The expense related to our St. Louis facility amounted to $0.6 million in 2002 and $0.1 million in 2003. We expensed approximately $0.5 million of deferred stock-based compensation in both 2003 and 2002.

Restructuring charge. We recorded restructuring charges of $0.7 million in 2003 and $3.4 million in 2002, which included a reduction in headcount in both years, closure of our St. Louis facility and a write-off of leasehold and technology in 2002.

Amortization of intangibles. We amortized the acquisition-related intangibles of $0.6 million and $0.9 million in 2003 and 2002, respectively. We ceased amortizing goodwill associated with the DNX acquisition in 2001, and all remaining goodwill related to the acquisition was written-off in 2002. Amortization expense for 2002 included the write-off of licensed intellectual property of $0.1 million.

Interest expense. Interest expense decreased to $0.7 million in 2003 from $0.9 million in 2002. In 2003, we restructured our debt which resulted in an interest expense decrease in 2003.

Income tax expense (benefit). We recorded no income tax expense in 2003 or 2002 due to our losses in each of those years. As of December 31, 2003, we had federal and state net operating loss carryforwards of approximately $90.6 million and $34.6 million, respectively. As of December 31, 2003, we had federal and state tax credit carryforwards of approximately $5.8 million and $2.3 million, respectively, available to offset any future taxable income we may generate. Federal tax credit carryforwards will begin to expire in 2023 unless previously utilized. The Internal Revenue Code of 1986, as amended, places certain limitations on the annual amount of net operating loss and tax credit carryforwards that can be utilized in any particular year if certain changes in our ownership occur. This annual limitation may result in the expiration of net operating loss and tax credit carryforwards before utilization.

Expensing of Stock Awards.

Compensation expense is recorded on stock option grants based on the intrinsic value of the options granted, which is estimated on the date of grant and it is recognized on a graduated, accelerated basis over the vesting period, generally four years from the date of grant. Deferred stock-based compensation expense recorded in 2003 and 2002 was approximately $1.8 million in both years.

On December 1, 2003, we issued options covering 281,332 shares of our common stock pursuant to an option exchange program, initiated in May 2003. Pursuant to the terms of the option exchange program, eligible optionees were offered the opportunity to exchange outstanding options to purchase common stock with an exercise price of $0.70 or more for options to purchase common stock. The new options would be issued at least six months and one day following the cancellation date of the exchanged options with an exercise price equal to the fair market value of such common stock on the date of grant, subject to the optionee continuing to provide services through the grant date of the new options. The vesting provisions of the original options would carry over to the newly issued options. We have evaluated this transaction in the context of guidance and have concluded that the reissued options require variable accounting treatment because they were granted with an exercise price less than the fair market value of the underlying common stock at the date of the grant. The effect of this accounting on the 2003 financial statement compensation expense was $1.6 million.

Liquidity and Capital Resources

As of December 31, 2004, we had cash, cash equivalents and investment balances of $21.9 million. Since our inception, we have incurred significant losses, and as of December 31, 2004 we had an accumulated deficit of $167.7 million. We have not achieved profitability and anticipate that we will continue to incur net losses for the foreseeable future. We expect that our research and development and selling, general and administrative expenses will increase, and as a result, we will need to generate significant revenue to achieve profitability.

Until our initial public offering, our operations were funded through the proceeds from the sale of preferred stock, revenue generation, and to a lesser extent, through equipment lease lines and bank lines of credit. As of December 31, 2004, we had outstanding balances under loan and lease agreements of $7.4 million, $5.0 million

pursuant to a bank loan and $2.4 million for equipment financing. In 2004, we repaid all principal and interest on a $1.0 million bank loan. In March 2004, we entered into an amendment to a 2003 loan and security agreement with our primary lender, increasing our borrowing capacity from $3.0 million to $7.0 million, of which $1.2 million was available as of December 31, 2004. This credit facility is secured by all our assets, excluding our intellectual property and encumbered property, and matures in September 2005. We are currently in discussions to extend or replace this facility.

Operating activities. Net cash used in operating activities was $18.9 million in 2004, $13.6 million in 2003 and $21.1 million in 2002. The primary use of cash was to fund our net loss, adjusted for non cash expenses and changes in operating assets and liabilities. During 2004, net cash used in operating activities resulted primarily from our net loss adjusted for non cash expenses of depreciation, amortization, stock-based compensation and decrease in deferred revenues. Deferred revenue results primarily from invoicing customers for contracts and licenses for which revenue will be recognized over future periods. During 2003, net cash used in operating activities resulted primarily from our net loss adjusted for non cash expenses of depreciation, amortization, stock-based compensation, and increase in accounts receivable, inventory and deferred revenues. The increase in accounts receivable was due to an increase in sales volume resulting from customer contracts executed during the year. Specifically, our accounts receivable increased by 42% from 2003 to 2004 and by 119% from 2002 to 2003. The increases as stated above were due to sizable changes in revenue and deferred revenue over these periods. Revenue increased by 54% while deferred revenue decreased by 13% from 2003. In 2003, revenue and deferred revenue increased by 25% and 95%, respectively, over 2002. Lastly, the increase in inventory of 98% from 2003 to 2004 and 109% from 2002 to 2003 was to fulfill anticipated future demand, which had a relatively smaller impact on accounts payable due to pre-payment and accelerated payment terms for certain components.

Investing activities. In 2004, the net cash used in investing activities was $0.2 million. In 2003, on the other hand, net cash provided by investing activities of $0.4 million resulted from both sales of property and equipment and reduction in overall capital purchase requirements given the 2002 restructuring. In 2002, net cash used in investing activities amounted to $1.8 million associated with the closure of the St. Louis facility and the consolidation of animal production in Cranbury, New Jersey.

Financing activities. In 2004, net cash provided by financing activities amounted to $26.0 million resulting mainly from the public offering of 4.2 million shares of common stock. In 2003, net cash provided by financing activities increased to $20.5 million from $0.4 million in 2002 due to proceeds from the issuance of Series AA preferred stock in 2003.

We believe that our current cash and cash equivalents, short-term investments, cash expected to be generated from operations and our ability to extend our secured revolving line of credit will be sufficient to meet our currently planned operating requirements for at least the next 18 months. However, we may choose to modify our planned operations, due to market conditions, competitive or other factors which could substantially increase our expenses or impact our revenues, in which case our liquidity would be negatively impacted. Our liquidity would also be negatively impacted by a decrease in demand for our products and services. We expect to extend or refinance our $7.0 million credit facility and spend approximately $2.0 million for facility expansion and laboratory equipment over the next 12 months.

If existing cash, short-term securities and cash generated from operations are insufficient to satisfy our liquidity requirements, we may seek to sell additional equity or debt securities or obtain an additional credit facility. The sale of additional equity or convertible debt securities could result in dilution to our stockholders. If additional funds are raised through the issuance of debt securities, these securities could have rights senior to those associated with our common stock and could contain covenants that would restrict our operations. Any additional financing may not be available in amounts or on terms acceptable to us, or at all. If we are unable to obtain this additional financing, we may be required to reduce the scope of our planned product development and marketing efforts.

Risk Factors that May Affect Results

In addition to the forward-looking statements discussed in this report, we also provide the following cautionary discussion of risks, uncertainties and possibly inaccurate assumptions relevant to our business. These items are factors that we believe could cause our actual results to differ materially from expected and historical results. Other factors also could adversely affect us.

We have a history of losses and an accumulated deficit of $167.7 million as of December 31, 2004, and we may never achieve profitability.

We have incurred significant net losses every year since our inception. As of December 31, 2004, we had an accumulated deficit of $167.7 million. To achieve profitability, we will need to generate and sustain substantially higher revenue than we have to date, while achieving reasonable costs and expense levels. We may not be able to generate enough revenue to achieve profitability. Even if we become profitable, we may not be able to sustain or increase profitability on a quarterly or annual basis. If we fail to achieve profitability within the timeframe expected by securities analysts or investors, the market price of our common stock will likely decline.

If our products and services do not become widely used by pharmaceutical, biotechnology, biomedical and chemical researchers, it is unlikely that we will ever become profitable.

Pharmaceutical, biotechnology, biomedical and chemical researchers have historically conducted *in vivo* biological assessment using a variety of technologies, including a variety of animal models. Compared to these technologies, our technology is relatively new, and the number of companies and institutions using our technology is relatively limited. The commercial success of our products will depend upon the widespread adoption of our technology as a preferred method to perform *in vivo* biological assessment. In order to be successful, our products must meet the technical and cost requirements for *in vivo* biological assessment within the life sciences industry. Widespread market acceptance will depend on many factors, including:

- the willingness and ability of customers to adopt new technologies;
- our ability to convince prospective strategic partners and customers that our technology is an attractive alternative to other methods of *in vivo* biological assessment;
- our customers' perception that our products can help accelerate efforts and reduce costs in drug development; and
- our ability to sell and service sufficient quantities of our products.

Because of these and other factors, our products may not gain widespread market acceptance or become the industry standard for *in vivo* analytical tools.

As a company in the early stage of commercialization, our limited history of operations makes evaluation of our business and future growth prospects difficult.

We have had a limited operating history and are at an early stage of commercialization. We began selling our IVIS Imaging Systems and entered into our first commercial license in 2000. Our *in vivo* biophotonic imaging technology is a relatively new technology that has not yet achieved widespread adoption. To date, we have generated annual revenue as follows:

- $30.9 million in 2004;
- $20.1 million in 2003; and
- $16.0 million in 2002;

We do not have enough experience in selling our products at a level consistent with broad market acceptance and do not know whether we can do so and generate a profit. As a result of these factors, it is difficult to evaluate our prospects, and our future success is more uncertain than if we had a longer or more proven history of operations.

The termination or non-renewal of a large contract or the loss of, or a significant reduction in, sales to any of our significant customers could harm our operating results.

We generally sell our products pursuant to agreements that are renewable on an annual basis. Failure to renew or the cancellation of these agreements by any one of our significant customers, which include Pfizer Inc., the National Institute for Environmental Health Sciences and affiliates of Novartis, could result in a significant loss of revenue. We currently derive, and we expect to continue to derive, a large percentage of our total revenue from a relatively small number of customers. If any of these customers terminates or substantially diminishes its relationship with us, our revenue could decline significantly. Revenue concentration among our largest customers is as follows:

- our ten largest customers accounted for approximately 41.4% and 52.7% of our revenue for 2004 and 2003, respectively; and
- our largest and second largest customers in 2004 accounted for approximately 16% and 6.6%, respectively, of our revenue for 2004, and approximately 20.7% and 10.7%, respectively, of our revenue for 2003.

The loss of significant revenue from any of our significant customers could negatively impact our results of operations or limit our ability to execute our strategy.

We depend on a limited number of suppliers, and we will be unable to manufacture or deliver our products if shipments from these suppliers are interrupted or are not supplied on a timely basis.

We use original equipment manufacturers, or OEMs, for various parts of our IVIS Imaging Systems, including the cameras, boxes, certain subassemblies, filters and lenses. We obtain these key components from a small number of sources. For example, the lens for our IVIS 200 system is obtained from a single source on a purchase order basis from Coastal Optical Systems Inc., and the CCD cameras for all of our IVIS Imaging Systems are obtained from two sources, Spectral Instruments, Inc. and Andor Technology Limited. From time to time, we have experienced delays in obtaining components from certain of our suppliers, which have had an impact on our production schedule for imaging systems. We believe that alternative sources for these components in the event of a disruption or discontinuation in supply would not be available on a timely basis, which would disrupt our operations and impair our ability to manufacture and sell our products.

Our dependence upon outside suppliers and OEMs exposes us to risks, including:

- the possibility that one or more of our suppliers could terminate their services at any time;
- the potential inability of our suppliers to obtain required components or products;
- reduced control over pricing, quality and timely delivery, due to the difficulties in switching to alternative suppliers;
- the potential delays and expense of seeking alternative sources of suppliers; and
- increases in prices of raw materials, products and key components.

The use of *in vivo* biophotonic imaging data is not widespread among drug development companies for use in FDA submissions and may never be fully realized.

To our knowledge, only one of our drug development customers has used our imaging technology to submit an investigational new drug application, or IND, to the Food and Drug Administration, or FDA, and no drugs have been approved to date using our imaging technology. As a result, our ability to assist the drug development process in leading to the approval of drugs with commercial potential has yet to be fully proven. If commercial advantages are not realized from the use of *in vivo* biophotonic imaging, our existing customers could stop using our products, and we could have difficulty attracting new customers.

Our contractual payment obligations that were fixed and determinable as of December 31, 2004 were as follows:

Payments Due by Period	2005	2006	2007	2008	2009
			(in thousands)		
Revenue					
Operating Leases (1)	$ 3,734	$2,422	$1,996	$1,983	$1,693
Loans Payable (2)	6,781	1,005	102	—	—
Other Contractual Obligations (3)	1,110	—	—	—	—
Total	$11,625	$3,427	$2,098	$1,983	$1,693

(1) Our operating leases represent rental commitments under real property leases. These amounts will change in future periods as a result of amendments and additions to commitments entered into in March 2005.

(2) Our loans are for financing of capital and lease hold purchases.

(3) Our other contractual obligations represent purchase commitments from our key supplier.

Recently Issued Accounting Pronouncements

In December 2002, the Financial Accounting Standards Board (FASB) issued SFAS No. 148, "Accounting for Stock-Based Compensation-Transition and Disclosure" which amends FASB Statement No. 123, "Accounting for Stock-Based Compensation," to provide alternative methods of transition for a voluntary change to the fair value based method of accounting for stock-based employee compensation. In addition, SFAS No. 148 amends the disclosure requirements of SFAS No. 123 to require prominent disclosures in both annual and interim financial statements of the method of accounting for stock-based employee compensation and the effect of the method used on reported results. We adopted the disclosure provisions of SFAS No. 148 at the beginning of fiscal 2002. In December 2004, the FASB issued Statement No. 123(R) "Share-Based Payment" This statement requires that stock-based compensation be recognized as a cost in the financial statements and that such cost be measured based on the fair value of the stock-based compensation. Our adoption of this statement, which we expect to occur in the third quarter of 2005, will have a material, although non-cash, impact on our financial condition or results of operations.

We are currently evaluating the impact of the new standard, including the method of implementation, and anticipate selecting the modified prospective transition method as allowed under SFAS 123R for compliance with the new standard. Under this transition method for vested awards that are outstanding as of the effective date of July 1, 2005, no change from previously recognized compensation expense would be recorded. For unvested awards as of July 1, 2005, on the other hand, deferred compensation associated with the unvested options would be recomputed as if the new fair value based method had been in place from the date options had been granted. A cumulative effective change would be recorded in the third quarter of 2005 for any difference between the deferred compensation previously recognized under the old intrinsic value method and the new fair value method for unvested options as of July 1, 2005. For the remaining vesting period, deferred compensation expense would be recognized in accordance to the new standard without any changes in measurement. Lastly, for all new awards that are granted or modified on or after July 1, 2005, the new fair value based method would be utilized for expense recognition and settlement provisions.

In March 2004, the EITF reached a final consensus on Issue 03-1, "The Meaning of Other-Than-Temporary Impairment and its Application to Certain Investments," to provide additional guidance in determining whether investment securities have an impairment which should be considered other-than-temporary. On September 15, 2004 the FASB issued proposed FSP EITF Issue 03-1-a to address the application of the EITF Issue 03-1 to debt securities that are affected by interest rate and/or sector-spread changes only. On September 30, 2004, the FASB issued FSP EITF Issue 03-1-1, which delayed the effective date of certain paragraphs of the EITF until EITF 03-1-a is issued. We expect that the adoption of this Issue and the related FSP's will not have a significant effect on our financial condition or results of operations.

In May of 2003, the Financial Accounting Standards Board (FASB) issued SFAS No. 150, Accounting for Certain Financial Instruments with Characteristics of both Liabilities and Equity. SFAS No. 150 requires issuers to classify as liabilities (or assets in some circumstances) certain financial instruments that embody obligations. Financial instruments within the scope of SFAS No. 150 shall be initially measured at fair value and subsequently revalued with changes in value being reflected in interest cost. SFAS No. 150 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. Restatement is not permitted. The adoption of SFAS No. 150 did not have a significant impact on our consolidated financial statements.

In April of 2003, the FASB issued SFAS No. 149, *Amendment of Statement 133 on Derivative Instruments and Hedging Activities*. SFAS No. 149 amends and clarifies financial accounting and reporting for derivative instruments, including certain derivative instruments embedded in other contracts and for hedging activities under FASB Statement No. 133 (SFAS 133), Accounting for Derivative Instruments and Hedging Activities. This statement amends SFAS No. 133 for decisions made as part of the Derivative Implementation Group process that effectively required amendments to SFAS No. 133, in connection with other FASB projects dealing with financial instruments and in connection with implementation issues that have been raised in relation to the application of the definition of a derivative. SFAS No. 149 is effective for contracts entered into or modified after June 30, 2003. Also, the provisions of SFAS No. 149 that relate to SFAS No. 133 implementation issues that have been effective for fiscal years that began prior to June 15, 2003, should continue to be applied in accordance with respective effective dates. In addition, provisions of this statement related to forward purchases or sales of when-issued securities or other securities that do not yet exist, should be applied to both existing and new contracts entered into after June 30, 2003. The adoption of SFAS No. 149 did not have a significant impact on our consolidated financial statements.

In December of 2003, the FASB issued FASB Interpretation No. 46 (Revised), *Consolidation of Variable Interest Entities*, an interpretation of Accounting Research Bulletin No. 51 (FIN No. 46R). FIN No. 46R expands upon and strengthens existing accounting guidance that addresses when a company should include in its financial statements the assets, liabilities and activities of another entity. A variable interest entity is any legal structure used for business purposes that either does not have equity investors with voting rights or has equity investors that do not provide sufficient financial resources for the entity to support its activities. A variable interest entity often holds financial assets, including loans and receivables, real estate or other property. A variable interest entity may be essentially passive or it may engage in research and development or other activities on behalf of another company. Previously, one company generally has included another entity in its consolidated financial statements only if it controlled the entity through voting interests. FIN No. 46R changes that by requiring a variable interest entity to be consolidated by a company if that company is subject to a majority of the risk of loss from the variable interest entity's activities or entitled to receive a majority of the entity's residual returns or both. As of December 17, 2003, the effective date of FIN No. 46R has been deferred until the end of the first interim or annual reporting period ending after March 15, 2004. We do not have any variable interest entities and the adoption had no impact on our consolidated financial statements.

In April 2004, FASB issued FSP FAS No. 129-1, "*Disclosure of Information about Capital Structure, Relating to Contingently Convertible Securities*" to provide disclosure guidance for contingently convertible securities. We adopted the disclosure provisions in the second quarter of 2004 as they applied to the convertible notes issued in March 2003. The adoption of FSP FAS No. 129-1 did not have a material impact on our financial condition or results of operations.

In a recent EITF meeting, EITF Issue No. 04-08, *"Accounting Issues Related to Certain Features of Contingently Convertible Debt and the Effect on Diluted Earnings per Share,"* was discussed. The tentative conclusion was that shares available under contingently convertible debt should be included in diluted earnings per share or EPS, in all periods, except when inclusion is anti-dilutive, regardless of whether the contingency is met and regardless of whether the market price contingency is substantial. Management expects that the adoption of this Issue will not have an effect on our financial condition or results of operations.

If we fail to properly manage our growth, our business could be adversely affected.

We have substantially increased the scale of our operations and expect to continue doing so for the foreseeable future as compared with prior years when we pursued a fiscally conservative growth plan and deliberately limited the growth of our management and operations during the national economic downturn. If we are unable to manage our growth effectively, our losses could increase. The management of our growth will depend, among other things, upon our ability to improve our operational, financial and management controls, reporting systems and procedures. In addition, we will have to invest in additional customer support resources. We are also increasing our manufacturing capacity for our imaging systems to meet continued and growing demand for these products. To provide this additional capacity and services, we will need to expand our facility space dedicated to instrument manufacturing, hire and train additional personnel for manufacturing, installation and field support, and expand our inventory of instrumentation parts and components, which will result in additional burdens on our systems and resources and require additional capital expenditures.

We may not fully realize our revenue under long-term contracts, which could harm our business and result in higher losses than anticipated.

We have long-term contracts for custom animal production and/or phenotyping services with two customers that are renewed annually and are expected to generate future revenues. There can be no assurance that either of the two long-term contracts will be renewed annually and not terminated at any time during their terms or that we will be able to maintain our sublicensed rights under certain patents relating to these contracts.

Contamination in our animal populations could damage our inventory, harm our reputation and result in decreased sales.

We offer a portfolio of transgenic animals and LPTA animal models for use by researchers in a wide range of research and drug discovery programs and also perform breeding and model validation. We maintain animal facilities in Alameda, California and Cranbury, New Jersey. These animals and facilities must be free of contaminants, viruses or bacteria, or pathogens that would compromise the quality of research results. Contamination of our isolated breeding rooms could disrupt our models, delay delivery to customers of data generated from phenotyping and result in decreased sales. Contamination would result in inventory loss, clean up and start-up costs and reduced sales as a result of lost customer orders.

For example, in 2003 one of our animal facilities in Alameda was contaminated by a mouse virus introduced through one of our animal vendors. We closed that facility for decontamination, and transferred our most valuable strains to third party breeders for rederivation so that we could continue to provide animals to our customers. The decontamination process took approximately three months. We have moved all of these operations to a new barrier facility to reduce the contamination risk. Additionally, there is a known list of mouse pathogens that animal facilities such as ours routinely test for in their animal populations. This event did not represent a loss of revenue, but did affect our operational costs by increasing our animal support costs.

Our future revenue is unpredictable and could cause our operating results to fluctuate significantly from quarter to quarter.

Our quarterly and annual operating results have fluctuated in the past and are likely to do so in the future. In particular, our operating results in the first and third quarters have historically been lower than those in the second and fourth quarters due to the decision-making process of our customer base. The sale of many of our products, including our IVIS Imaging Systems and related Bioware, typically involve a significant scientific evaluation and commitment of capital by customers. Accordingly, the initial sales cycles of many of our products are lengthy and subject to a number of significant risks that are beyond our control, including customers' budgetary constraints and internal acceptance reviews. As a result of this lengthy and unpredictable sales cycle, our operating results have historically fluctuated significantly from quarter to quarter, and we expect this trend to

continue. In addition, a large portion of our expenses, including expenses for our Alameda, California and Cranbury, New Jersey facilities, equipment and personnel, are relatively fixed. Accordingly, if our revenue declines or does not increase as we anticipate, we might not be able to correspondingly reduce our operating expenses in a timely enough manner to avoid incurring additional losses. Our failure to achieve our anticipated level of revenue could significantly harm our operating results for a particular fiscal period.

The following are among additional factors that could cause our operating results to fluctuate significantly from period to period:

- changes in the demand for, and pricing of, our products and services;
- the length of our sales cycles and buying patterns of our customers, which may cause a decrease in our operating results for the third quarter;
- the nature, pricing and timing of other products and services provided by us or our competitors;
- changes in our long term custom animal production contracts and other renewable contracts, including licenses;
- our ability to obtain key components for our imaging systems and manufacture and install them on a timely basis to meet demand;
- changes in the research and development budgets of our customers;
- acquisition, licensing and other costs related to the expansion of our operations;
- the timing of milestones, licensing and other payments under the terms of our license agreements, commercial agreements and agreements pursuant to which others license technology to us; and
- expenses related to, and the results of, patent filings and other proceedings relating to intellectual property rights.

Due to the possibility of fluctuations in our revenue and expenses, we believe that quarter to quarter or annual comparisons of our operating results are not a good indication of our future performance.

We are subject to the capital spending patterns of the biomedical and biopharmaceutical industry, which over the past years have been adversely impacted by general economic conditions, industry consolidation and increased competition.

During the past several years, many of our customers and potential customers, particularly in the biopharmaceutical industry, have reduced their capital spending budgets because of generally adverse prevailing economic conditions, consolidation in the industry and increased pressure on the profitability of such companies, due in part to competition from generic drugs. If our customers and potential customers do not increase their capital spending budgets, because of continuing adverse economic conditions or further consolidation in the industry, we could face weak demand for our products. If the demand for our products is weak because of constrained capital spending by our customers, we may not achieve our targets for revenue and cash flow from operations.

We have a limited sales and marketing organization, and although we intend to increase our sales and marketing organization, we may be unable to build an organization to meet demand for our products and services.

We currently have a limited number of people in our sales force engaged in the direct sale of our products, many of whom were added in 2004. Because our products are technical in nature, we believe that our sales and marketing staff must have scientific or technical expertise and experience and require they be trained in the instrumentation and reagents that they sell. Although we expanded our sales and marketing organization in 2004,

the number of employees with these skills is relatively small. Competition is intense and we may not be able to continue to attract and retain sufficient qualified people or grow and maintain an efficient and effective sales and marketing department.

We depend on key employees in a competitive market for skilled personnel, and without additional employees, we cannot grow or achieve profitability.

We are highly dependent on the principal members of our management team, including David W. Carter, chairman of our board and chief executive officer, and Pamela R. Contag, Ph.D., our president. With the exception of Mr. Carter and Dr. Contag, none of the principal members of our management team and scientific staff have entered into employment agreements with us, nor, with the exception of Mr. Carter and Dr. Contag, do we have any key person life insurance on such individuals. Additionally, as a practical matter, any employment agreement we may enter into will not ensure the retention of the employee who is a party to the agreement.

Our future success also will depend in part on the continued service of our key scientific, consulting and management personnel and our ability to identify hire and retain additional personnel. We experience intense competition for qualified personnel. We may be unable to attract and retain personnel necessary for the development of our business. Moreover, a significant portion of our work force is located in the San Francisco Bay Area of California, where demand for personnel with the scientific and technical skills we seek is extremely high and is likely to remain high.

Decreased effectiveness of equity compensation could adversely affect our ability to attract and retain employees, and proposed changes in accounting for equity compensation could adversely affect earnings.

We have historically used stock options and other forms of equity-related compensation as key components of our total employee compensation program in order to align employees' interests with the interests of our stockholders, encourage employee retention, and provide competitive compensation packages. The Financial Accounting Standards Board and other agencies have finalized changes to U.S. generally accepted accounting principles that will require us and other companies to record a charge to earnings for employee stock option grants and other equity incentives. Moreover, applicable stock exchange listing standards relating to obtaining stockholder approval of equity compensation plans could make it more difficult or expensive for us to grant options to employees in the future. As a result, we may incur increased compensation costs, change our equity compensation strategy or find it difficult to attract, retain and motivate employees, any of which could materially adversely affect our business.

Failure to raise additional capital or generate the significant capital necessary to expand our operations and develop new products could reduce our ability to compete.

We anticipate that planned resources will be sufficient to fund our currently planned commitments. However, our expectations are based on our current operating plan, which may change as a result of many factors including:

- our success in ramping up our sales and marketing organization;
- the termination or non-renewal of material contracts or loss of significant customers;
- our inability to obtain products from our suppliers to manufacture our products in sufficient quantities;
- developments or disputes concerning patents, proprietary rights or other commercial disputes; and
- changes in our growth rates.

Consequently, we may need to raise additional funds through public or private financings. Our inability to raise capital would harm our business and product development efforts.

In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities could result in dilution to our then-existing stockholders.

Compliance with governmental regulations could increase our operating costs, which would adversely affect the commercialization of our technology.

The Animal Welfare Act, or AWA, is the federal law that covers the treatment of certain animals used in research. The AWA currently does not cover rats of the genus Rattus or mice of the genus Mus bred for use in research, and consequently, we are not currently required to be in compliance with this law.

Currently, the AWA imposes a wide variety of specific regulations that govern the humane handling, care, treatment and transportation of certain animals by producers and users of research animals, most notably personnel, facilities, sanitation, cage size, feeding, watering and shipping conditions. If in the future the AWA is amended to include mice or rats bred for use in research in the scope of regulated animals, we will become subject to registration, inspections and reporting requirements. We believe compliance with such regulations would require us to modify our current practices and procedures, which could require significant financial and management resources.

Furthermore, some states have their own regulations, including general anti-cruelty legislation, which establish certain standards in handling animals. To the extent that we provide products and services overseas, we also have to comply with foreign laws, such as the European Convention for the Protection of Animals During International Transport and other anti-cruelty laws. In addition, customers of our mice in certain countries may need to comply with requirements of the European Convention for the Protection of Vertebrate Animals Used for Experimental and Other Scientific Purposes. Additional or more stringent regulations in this area could impact our sales of laboratory animals into signatory countries.

Since we develop animals containing changes in their genetic make-up, we may become subject to a variety of laws, guidelines, regulations and treaties specifically directed at genetically modified organisms. The area of environmental releases of genetically modified organisms is rapidly evolving and is currently subject to intense regulatory scrutiny, particularly overseas. If we become subject to these laws, we could incur substantial compliance costs. For example, the Biosafety Protocol, an international treaty adopted in 2000 to which the U.S. is not a party, regulates the transit of living modified organisms, a category that includes our transgenic mice, into countries party to the treaty. As our mice are not intended for release into the environment or for use for food, feed or processing, the treaty imposes only identification, handling, packaging and transport requirements for shipments into signatory countries. However, additional requirements may be imposed on such shipments in the future.

Additionally, exports of our IVIS Imaging Systems and biological reagents to foreign customers and distributors are governed by the International Traffic in Arms Regulations, the Export Administration Regulations, Patriot Act and Bioterrorism Safety Act. Although these laws and regulations do not restrict our present foreign sales programs, there can be no assurance that future changes to these regulatory regimes will not affect or limit our foreign sales.

We use hazardous materials in our business. Any claims relating to improper handling, storage or disposal of these materials could be time consuming and costly.

Our research and development processes, our anesthesia systems used with our IVIS Imaging Systems to anesthetize the animals being imaged and our general biology operations involve the controlled storage, use and disposal of hazardous materials including, but not limited to, biological hazardous materials and radioactive compounds. We are subject to federal, state and local regulations governing the use, manufacture, storage, handling and disposal of these materials and waste products. Although we believe that our safety procedures for

handling and disposing of these hazardous materials comply with the standards prescribed by law and regulation, the risk of accidental contamination or injury from hazardous materials cannot be completely eliminated. In the event of an accident, we could be held liable for any damages that result, and any liability could exceed the limits or fall outside the coverage of our insurance. We currently maintain a limited pollution cleanup insurance policy in the amount of $1.0 million. We may not be able to maintain insurance on acceptable terms, or at all. We could be required to incur significant costs to comply with current or future environmental laws and regulations.

Public perception of ethical and social issues may limit or discourage the use of mice for scientific experimentation, which could reduce our revenues and adversely affect our business.

Governmental authorities could, for social or other purposes, limit the use of genetic modifications or prohibit the practice of our technology. Public attitudes may be influenced by claims that genetically engineered products are unsafe for use in research or pose a danger to the environment. The subject of genetically modified organisms, like genetically altered mice and rats, has received negative publicity and aroused significant public debate. In addition, animal rights activists could protest or make threats against our facilities, which may result in property damage. Ethical and other concerns about our methods, particularly our use of genetically altered mice and rats, could adversely affect our market acceptance.

We may engage in future acquisitions, which could adversely affect your investment in us as we may never realize any benefits from such acquisitions, which also could be expensive and time consuming.

We currently have no commitments or agreements with respect to any material acquisitions. If we do undertake any transactions of this sort, the process of integrating an acquired business, technology, service or product may result in operating difficulties and expenditures and may absorb significant management attention that would otherwise be available for ongoing development of our business. Moreover, we may never realize the anticipated benefits of any acquisition. Future acquisitions could result in potentially dilutive issuances of equity securities, the incurrence of debt and contingent liabilities and amortization expenses related to other intangible assets or the impairment of goodwill, which could adversely affect our results of operations and financial condition.

If a natural disaster strikes our manufacturing facility, we would be unable to manufacture our products for a substantial amount of time and we would experience lost revenue.

We have relied to date principally on our manufacturing facility in Alameda, California to produce the IVIS Imaging Systems, our Bioware cells and microorganisms and LPTA animal models. We have also established a back-up facility for producing transgenic animals in Cranbury, New Jersey and have produced some of our LPTA animal models there. Both of these facilities and some pieces of manufacturing equipment would be difficult to replace and could require substantial replacement lead-time. Our facilities may be affected by natural disasters such as earthquakes and floods. Earthquakes are of particular significance to our Alameda facility, as it is located in an earthquake-prone area. In the event our Alameda facility or equipment was affected by man-made or natural disasters, we would be forced to shift production of the IVIS Imaging Systems and many of our Bioware cells and microorganisms and LPTA animal models to our Cranbury facility. We believe that this production shift would result in a disruption in our operations of approximately 90 to 180 days, which could harm our business. Although we currently maintain global property insurance for damage to our property and the disruption of our business from fire and other casualties, such insurance may not be sufficient to cover all of our potential losses and may not continue to be available to us on acceptable terms, or at all.

Because we receive revenue principally from pharmaceutical, biotechnology and chemical companies and biomedical research institutions, the capital spending policies of these entities may have a significant effect on the demand for our products.

We market our products to pharmaceutical, biotechnology and chemical companies and biomedical research institutions, and the capital spending policies of these entities can have a significant effect on the demand for our

products. These policies vary significantly between different customers and are based on a wide variety of factors, including the resources available for purchasing research equipment, the spending priorities among various types of research companies and the policies regarding capital expenditures. In particular, the volatility of the public stock market for biotechnology companies has at certain times significantly impacted the ability of these companies to raise capital, which has directly affected their capital spending budgets. In addition, continued consolidation within the pharmaceutical industry will likely delay and may potentially reduce capital spending by pharmaceutical companies involved in such consolidations. Similarly, changes in availability of grant moneys may impact our sales to academic customers. Recent developments regarding safety issues for widely used drugs, including actual and/or threatened litigation, also may affect capital spending by pharmaceutical companies. Any decrease or delay in capital spending by life sciences or chemical companies or biomedical researchers could cause our revenue to decline and harm our profitability. In addition, the pharmaceutical industry has undergone significant consolidation over the past several years. If two or more of our present or future customers merge, we may not receive the same fees under agreements with the combined entities that we received under agreements with these customers prior to their merger. Moreover, if one of our customers merges with an entity that is not a customer, the new combined entity may prematurely terminate our agreement. Any of these developments could materially harm our business or financial condition.

We face competition from companies with established technologies for *in vivo* biological assessment, which may prevent us from achieving significant market share for our products.

We compete with a variety of established and accepted technologies for *in vivo* biological assessment that several competitors and customers may be using to analyze animal models. The most basic of these technologies have remained relatively unchanged for the past 40 years, are well established and are routinely used by researchers. We believe it may take several years for researchers to become fully educated about our *in vivo* biophotonic imaging technology.

We believe that in the near term, the market for *in vivo* biological assessment will be subject to rapid change and will be significantly affected by new technology introductions and other market activities of industry participants. As other companies develop new technologies and products to conduct *in vivo* biological assessment, we may be required to compete with many larger companies that enjoy several competitive advantages, including:

- established distribution networks;
- established relationships with life science, pharmaceutical, biotechnology and chemical companies as well as with biomedical researchers; and
- greater resources for technology and product development, sales and marketing and patent litigation.

Our principal competitors that use established technologies for *in vivo* biological assessment include Exelixis, Inc. and Lexicon Genetics Incorporated. Each of these companies uses animal models in the area of target validation in drug discovery and utilizes methods of assessment based upon knockout mice as well as other organisms such as fruit flies, worms and yeast. We face competition from several companies that have recently begun to market systems that may be used to perform biophotonic imaging with the appropriate licenses. At any time, other companies may develop additional directly competitive products that could achieve greater market acceptance or render our products obsolete.

Our intellectual property rights, including one patent that is due to expire in 2006, may not provide meaningful commercial protection for our products, which could enable third parties to use our technology, or very similar technology, and could reduce our ability to compete in the market.

We rely on patent, copyright, trade secret and trademark laws to limit the ability of others to compete with us using the same or similar technology in the U.S. and other countries. However, as described below, these laws

afford only limited protection and may not adequately protect our rights to the extent necessary to sustain any competitive advantage we may have. The laws of some foreign countries do not protect proprietary rights to the same extent as the laws of the U.S., and many companies have encountered significant problems in protecting their proprietary rights abroad. These problems can be caused by the absence of adequate rules and methods for defending and enforcing intellectual property rights.

We will be able to protect our technology from unauthorized use by third parties only to the extent that they are covered by valid and enforceable patents or are effectively maintained as trade secrets. The patent positions of companies developing tools for pharmaceutical, biotechnology, biomedical and chemical industries, including our patent position, generally are uncertain and involve complex legal and factual questions, particularly as to questions concerning the enforceability of such patents against alleged infringement. The biotechnology patent situation outside the U.S. is even more uncertain, particularly with respect to the patentability of transgenic animals. Changes in either the patent laws or in interpretations of patent laws in the U.S. and other countries may therefore diminish the value of our intellectual property. Moreover, our patents and patent applications may not be sufficiently broad to prevent others from practicing our technologies or from developing competing products. We also face the risk that others may independently develop similar or alternative technologies or design around our patented technologies.

We own, or control through licenses, a variety of issued patents and pending patent applications. However, the patents on which we rely may be challenged and invalidated, and our patent applications may not result in issued patents. In fact, one of our primary patents covering our method of *in vivo* biophotonic imaging was recently subject to a re-examination proceeding before the U.S. Patent and Trademark Office that had been requested by an unidentified third party. The re-examination concluded in 2004, and the patent has been reissued by the Patent and Trademark Office, meaning that the claims to that method reissued under the same patent number. The claims had been amended so as to be slightly narrower than the claims originally issued.

We have taken measures to protect our proprietary information, especially proprietary information that is not covered by patents or patent applications. These measures, however, may not provide adequate protection of our trade secrets or other proprietary information. We seek to protect our proprietary information by entering into confidentiality agreements with employees, collaborators and consultants. Nevertheless, employees, collaborators or consultants may still disclose our proprietary information, and we may not be able to protect our trade secrets in a meaningful way. If we lose employees, we may not be able to prevent the unauthorized disclosure or use of our technical knowledge or other trade secrets by those former employees despite the existence of nondisclosure and confidentiality agreements and other contractual restrictions to protect our proprietary technology. In addition, others may independently develop substantially equivalent proprietary information or techniques or otherwise gain access to our trade secrets.

U.S. Patent No. 4,873,191, claiming the use of certain widely accepted microinjection techniques to create transgenic animals and licensed exclusively to our subsidiary, Xenogen Biosciences Corp., is due to expire in October 2006. Upon its expiration, we will not be able to prevent others from practicing those methods for commercial purposes and we may face competition from third parties seeking to provide those services on a commercial basis.

We may need to initiate lawsuits to protect or enforce our patents or other proprietary rights, which would be expensive and, if we lose, may cause us to lose some of our intellectual property rights, which would reduce our ability to compete in the market and may cause our stock price to decline.

We rely on patents to protect a large part of our intellectual property and competitive position. Our patents, which have been or may be issued, may not afford meaningful protection for our technologies and products. In addition, our current and future patent applications may not result in the issuance of patents in the U.S. or foreign countries. Our competitors may develop technologies and products similar to our technologies and products which do not infringe our patents. In order to protect or enforce our patent rights, we may initiate patent litigation against

third parties, such as infringement suits or interference proceedings. This risk is exacerbated by the fact that those third parties may have access to substantially greater financial resources than we have to conduct such litigation.

These lawsuits could be expensive, take significant time and could divert management's attention from other business concerns. These lawsuits would put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing. Additionally, we may suffer reduced instrumentation sales and/or license revenue as a result of pending lawsuits or following final resolution of lawsuits. Further, these lawsuits may also provoke these third parties to assert claims against us. Attempts to enforce our patents may trigger third party claims that our patents are invalid. The patent position of biotechnology firms is highly uncertain, involves complex legal and factual questions, and continues to be the subject of much litigation. We cannot assure you that we will prevail in any of these suits or that the damage or other remedies awarded to us, if any, will be commercially valuable. During the course of these suits, there may be public announcements of results of hearings, motions and other interim proceedings or developments in the litigation. If securities analysts or others perceive any of these results to be negative, it could cause our stock price to decline.

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

We may be exposed to future litigation by third parties based on claims that our products infringe the intellectual property rights of others. This risk is exacerbated because there are numerous issued and pending patents in the life sciences industry and, as described above, the validity and breadth of life sciences patents involve complex legal and factual questions. Our competitors may assert that their U.S. or foreign patents may cover our products and the methods we employ. For example, one of our principal competitors, Lexicon Genetics Incorporated, had been involved in litigation regarding intellectual property claims relating to the creation of transgenic animals. In addition, because patent applications can take many years to issue, there may be currently pending applications, of which we are unaware, which may later result in issued patents that our products may infringe. There could also be existing patents of which we are not aware that one or more of our products may inadvertently infringe. In addition, AntiCancer, a party with whom we have been engaged in ongoing litigation, recently filed a lawsuit against us alleging infringement of five patents. See "Part I, Item 3. Legal Proceedings."

From time to time, we have received, and may receive in the future, letters asking us to license certain technologies the signing party believes we may be using or would like us to use. If we do not accept a license, we may be subject to claims of infringement, or may receive letters alleging infringement. Infringement and other intellectual property claims, with or without merit, can be expensive and time-consuming to litigate and can divert management's attention from our core business.

If we lose a patent infringement lawsuit, we could be prevented from selling our products unless we can obtain a license to use technology or ideas covered by such patent or are able to redesign the products to avoid infringement. A license may not be available at all or on terms acceptable to us, or we may not be able to redesign our products to avoid any infringement. If we are not successful in obtaining a license or redesigning our products, we may be unable to sell our products and our business could suffer.

Our rights to the use of technologies licensed to us by third parties are not within our control, and without these technologies, our products and programs may not be successful and our business prospects could be harmed.

We rely on licenses to use various technologies that are material to our business, including licenses to the use of certain biologicals, and licenses to engineer and commercialize transgenic animals. We do not own the patents that underlie these licenses. Our rights to use these technologies and employ the inventions claimed in the licensed patents are subject to the negotiation of, continuation of and compliance with the terms of those licenses and the continued validity of these patents. In some cases, we do not control the prosecution or filing of the patents to which we hold licenses. Instead, we rely upon our licensors to prevent infringement of those patents.

Under the GenPharm International, Inc. sublicense for certain gene targeting patents we use, GenPharm retains the sole right to enforce those patent rights against infringers. Under the Promega Corporation and The Regents of the University of California Licenses for a patented form of firefly luciferase used in our LPTA animal models and certain of our Bioware, we do not have the right to enforce the patent, and neither licensor is obligated to do so on our behalf. Some of the licenses under which we have rights, such as our licenses from Stanford University and Ohio University, provide us with exclusive rights in specified fields, including the right to enforce the patents licensed to us from these two universities, but we cannot assure you that the scope of our rights under these and other licenses will not be subject to dispute by our licensors or third parties. Certain of our other licenses contain due diligence obligations, as well as provisions that allow the licensor to terminate the license upon specific conditions.

We occasionally may become subject to commercial disputes that could harm our business.

We are currently the subject of, and may from time to time become engaged in, commercial disputes such as claims by customers, suppliers or other third parties. These disputes could result in monetary damages or other remedies that could adversely impact our financial position or operations. For example, on August 9, 2001, AntiCancer, Inc. filed a lawsuit in the Superior Court of California, County of San Diego, against us and other third parties. The complaint alleges five causes of action, including trade libel, defamation, intentional interference with contract, intentional interference with prospective economic advantage and unfair competition. These claims are based on alleged false statements made by unidentified employees and/or third parties regarding AntiCancer's products. AntiCancer seeks unspecified general and exemplary monetary damages arising from the alleged impact of the alleged false statements, as well as its costs and expenses incurred in connection with the lawsuit. The Court recently denied our motion for summary judgment of the case, and trial is scheduled to begin on September 19, 2005. AntiCancer recently filed another lawsuit against us for patent infringement. We believe both complaints are without merit and are mounting a vigorous defense. See "Part I, Item 3. Legal Proceedings."

However, even if we prevail in these lawsuits, the defense of these or similar lawsuits will be expensive and time-consuming and may distract our management from operating our business.

We expect that our stock price will fluctuate significantly, and you may not be able to resell your shares at or above your investment price.

The stock market has experienced extreme price and volume fluctuations. The market prices of the securities of biotechnology companies, particularly companies like ours without consistent product revenues and earnings, have been highly volatile and may continue to be highly volatile in the future. This volatility has often been unrelated to the operating performance of particular companies. Factors that could cause this volatility in the market price of our common stock include:

- announcements of technological innovations or new products by us or our competitors;
- developments or disputes concerning patents or proprietary rights, or of infringement, interference or other litigation against us or our licensors;
- the timing and development of our products and services;
- changes in our revenue due to contracts which are not renewed;
- changes in pharmaceutical and biotechnology companies' research and development expenditures;
- announcements concerning our competitors, or the biotechnology or pharmaceutical industry in general;
- new regulatory pronouncements and changes in regulatory guidelines;
- general and industry-specific economic conditions and issuance of new or changed research, reports or recommendations by industry or financial analysts about us or our business;
- actual or anticipated fluctuations in our operating results;

- changes in financial estimates or recommendations by securities analysts, or termination of research coverage;
- changes in accounting principles; and
- the loss of any of our key scientific or management personnel.

These and other external factors may cause the market price and demand for our common stock to fluctuate substantially, which may limit or prevent investors from readily selling their shares of common stock and may otherwise negatively affect the liquidity of our common stock. In the past, securities class action litigation has often been brought against companies that experience volatility in the market price of their securities. Whether or not meritorious, litigation brought against us could result in substantial costs, divert management's attention and resources and harm our financial condition and results of operations.

We have recently begun a more extensive assessment of the adequacy of our internal control system, which will be costly and could result in the identification of deficiencies in our system of internal controls.

Section 404 of the Sarbanes-Oxley Act of 2002 requires management to include an annual report regarding our evaluation of our internal controls in the company's annual report for the year ending December 31, 2005. In preparation for that management report, we will need to assess the adequacy of our internal control, remediate any weaknesses that may be identified, validate that controls are functioning as documented and implement a continuous reporting and improvement process for internal controls. We expect to utilize outside consultants to assist with this project, which will increase our selling, general and administrative costs in 2005. We may also discover deficiencies that require us to improve our procedures, processes and systems in order to ensure that our internal controls are adequate and effective, and that we are in compliance with the requirements of Section 404 of the Sarbanes-Oxley Act. If the deficiencies are not adequately addressed, or if we are unable to complete all of our testing and any remediation in time for compliance with the requirements of Section 404 of the Sarbanes-Oxley Act and the SEC rules under it, we would be unable to conclude that our internal controls over financial reporting are designed and operating effectively, which could adversely affect our investor confidence in our internal controls over financial reporting.

If the ownership of our common stock continues to be highly concentrated, it may prevent you and other stockholders from influencing significant corporate decisions and may result in conflicts of interest that could cause our stock price to decline.

Our executive officers, directors and principal stockholders beneficially own or control more than 50 percent of the outstanding shares of our common stock. This significant concentration of share ownership may adversely affect the trading price for our common stock because investors may perceive disadvantages in owning stock in companies with controlling stockholders. These stockholders, acting together, will have the ability to exert substantial influence over all matters requiring approval by our stockholders, including the election and removal of directors and any proposed merger, consolidation or sale of all or substantially all of our assets. In addition, they could dictate the management of our business and affairs. This concentration of ownership could have the affect of delaying, deferring or preventing a change in control, or impeding a merger or consolidation, takeover or other business combination that could be favorable to you.

Future sales of common stock by our existing stockholders may cause our stock price to fall.

The market price of our common stock could decline as a result of sales by our existing stockholders of shares of common stock in the market, or the perception that these sales could occur. These sales might also make it more difficult for us to sell equity securities at a time and price that we deem appropriate. The lock up agreements following our initial public offering expired in January 2005, and therefore most of our shares are freely tradable without restriction or further regulation, other than shares purchased by our officers, directors or other "affiliates" within the meaning of Rule 144 under the Securities Act.

Terrorist acts, acts of war and natural disasters may seriously harm our business and revenues, costs and expenses and financial condition.

Terrorist acts, acts of war and natural disasters (wherever located around the world) may cause damage or disruption to us, our employees, facilities, partners, suppliers, distributors and customers, any and all of which could significantly impact our revenues, expenses and financial condition. The terrorist attacks that took place in the United States on September 11, 2001 were unprecedented events that have created many economic and political uncertainties. The potential for future terrorist attacks, the national and international responses to terrorist attacks and other acts of war or hostility have created many economic and political uncertainties that could adversely affect our business and results of operations that cannot presently be predicted. The tsunami in Asia on December 26, 2004 was unpredictable and caused devastation of tremendous proportions and its effects are still being realized. The unpredictability of such a disaster inevitably causes uncertainty that could adversely affect our business and results of operations. We are largely uninsured for losses and interruptions caused by terrorist acts, acts of war and natural disasters.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

Market risk represents the risk of loss that may impact the financial position, results of operations or cash flows due to adverse changes in financial and commodity market prices and rates. We are exposed to market risk in the areas of changes in United States and foreign interest rates and changes in foreign currency exchange rates as measured against the United States dollar. These exposures are directly related to our normal operating and funding activities.

We have limited exposure to financial market risks, including changes in interest rates and foreign currency exchange rates. Our exposure to interest rate risk at December 31, 2004 was related to our investment portfolio and our borrowings. Fixed rate investments and borrowings may have their fair market value adversely impacted from changes in interest rates. Floating rate investments may produce less income than expected if interest rates fall, and floating rate borrowings will lead to additional interest expense if interest rates increase. Due in part to these factors, our future investment income may fall short of expectations due to changes in U.S. interest rates.

We invest our excess cash in debt instruments of the U.S. government and its agencies and in high quality corporate issuers. Due to the short-term nature of these investments, we concluded that there was no material exposure to interest rate risk arising from our investments as of December 31, 2004.

Item 8. Financial Statements and Supplementary Data.

We incorporate the information required for this item by reference to the financial statements listed in Item 15(a) of Part IV of this 10-K.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

(a) *Evaluation of Disclosure Controls and Procedures.* Our management, with the participation of our chief executive officer and our chief financial officer, evaluated the effectiveness of our disclosure controls and procedures, as defined by Rule 13a-15 of the Exchange Act, as of the end of the period covered by this Annual Report on Form 10-K. Based on this evaluation, our chief executive officer and our chief financial officer have concluded that our disclosure controls and procedures are effective to provide reasonable assurance that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in SEC's rules and forms and that such

information is accumulated and communicated to our management, including our chief executive officer and chief financial officer, as appropriate to allow timely decisions regarding required disclosure.

(b) *Changes in Internal Control over Financial Reporting.* There was no change in our internal control over financial reporting that occurred during our last fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

If, as of December 31, 2005, we meet the definition of "accelerated filer," as defined by Rule 12b-2 of the Exchange Act, we will be required by the Sarbanes-Oxley Act of 2002 to include an assessment of our internal control over financial reporting and attestation from an independent registered public accounting firm in our Annual Report on Form 10-K for our fiscal year ending December 31, 2005. If, however we are not deemed an "accelerated filer" at that time, we will not have to include such assessment and attestation until our Annual Report on Form 10-K for our fiscal year ended December 31, 2006.

Item 9B. Other Information.

Not applicable.

PART III

Item 10. Directors and Executive Officers of the Registrant.

Executive Officers of the Registrant

Information regarding our directors will be included in our proxy statement for our 2005 Annual Meeting of Stockholders and is incorporated by reference herein.

Our executive officers and their ages as of March 4, 2005 are as follows:

Name	Age	Position
David W. Carter	66	Chief Executive Officer and Chairman of the Board
Pamela Reilly Contag, Ph.D.	47	President and Director
William A. Albright, Jr.	47	Chief Financial Officer and Senior Vice President, Finance and Operations
David R. Boyko	42	Vice President, Licensing and Legal Services
Anthony F. Purchio, Ph.D.	56	Chief Scientific Officer and Vice President
Bradley W. Rice, Ph.D.	45	Chief Technology Officer and Vice President
Michael J. Sterns, D.V.M.	46	Chief Business Officer and Vice President

David W. Carter has served as our Chairman of the Board of Directors since November 1997 and as our Chief Executive Officer since April 2003. From January 1998 to April 2003, he served as Co-Chief Executive Officer and from May 1997 to November 1997, Mr. Carter was our consultant. From 1991 to May 1997, he served as Chairman of the Board, President and Chief Executive Officer of Somatix Therapy Corporation, a publicly-held gene therapy company, which merged with Cell Genesys, Inc. in 1997. Mr. Carter is a director of Cell Genesys, Inc. and Immunogen, Inc. Mr. Carter received a B.A. in History and an M.B.A. from Indiana University.

Pamela Reilly Contag, Ph.D. is one of our co-founders and has served as our President since August 1996 and as a director since August 1995. From August 1995 to January 1998, she served as our Chief Executive Officer, and from January 1998 to April 2003, she served as Co-Chief Executive Officer. Since January 1998, Dr. Contag has served as a Consulting Professor at Stanford University. From September 1996 to January 1998, Dr. Contag was a research associate at Stanford University. Dr. Contag received a B.A. in Biology from the College of St. Catherine and an M.S. and a Ph.D. in Microbiology from the University of Minnesota. Dr. Contag was a Postdoctoral Fellow of the Department of Microbiology and Immunology at Stanford University.

William A. Albright, Jr. has served as our Chief Financial Officer and Vice President since July 1, 2004 and as our Chief Financial Officer and Senior Vice President, Finance and Operations since February 2005. From March 2003 to February 2004, Mr. Albright was Chief Executive Officer and a director of FlowMedica, Inc., a medical device company. From May 1999 to December 2002, Mr. Albright was President, Chief Executive Officer and a director at Nexell Therapeutics, Inc., a publicly-held cell therapy company. From March 1996 to September 1998, Mr. Albright was Senior Vice President and Chief Financial Officer at LocalMed, Inc., a medical device company. Mr. Albright received a B.S. and an M.S. in Biological Sciences from Stanford University and an M.B.A. from Harvard Business School.

David R. Boyko has served as our Vice President of Licensing & Legal Services since February 2002. From June 1999 to February 2002, Mr. Boyko was a Senior Associate in the Technology Transactions Group at Wilson Sonsini Goodrich & Rosati, P.C., and from September 1995 to June 1999, Mr. Boyko was an Associate with Fried, Frank, Harris, Shriver and Jacobson. Mr. Boyko also served eight years as an officer in the U.S. Air Force where he was involved with strategic weapon system development. Mr. Boyko received a B.S. with distinction in

Mechanical Engineering from Cornell University, an M.A. in International Relations from the University of Southern California and his J.D. from the University of California, Los Angeles School of Law.

Anthony F. Purchio, Ph.D. has served as our Chief Scientific Officer since May 1999 and as a Vice President since December 1999. From June 1998 to May 1999, Dr. Purchio was a consultant to Morthogen, Inc. and Regenics. From November 1995 to June 1998, Dr. Purchio served as Vice President of Research and Development at Hepatix, Inc., a biotechnology company engaged in developing bio-artificial liver tissues. Dr. Purchio received a Ph.D. in Experimental Pathology from the University of Colorado Medical Center and completed his postdoctoral training at the Molecular Biology Institute, University of California, Los Angeles.

Bradley W. Rice, Ph.D. has served as our Chief Technical Officer and Vice President since January 2004. From 1999 to January 2004, he served as our Director of Physics R&D. Prior to joining Xenogen, Dr. Rice worked for 15 years as a project engineer and staff scientist in the Magnetic Fusion Energy Program at Lawrence Livermore National Laboratory. Dr. Rice received his B.A. in physics from Colorado College, M.S. in electrical engineering from the University of Wisconsin-Madison, and his Ph.D. in Applied Science from the University of California-Davis.

Michael J. Sterns, D.V.M. has served as our Chief Business Officer and Vice President since September 2003. From January 2003 to September 2003, he served as our Vice President, Corporate Development. From December 2000 to December 2002, Dr. Sterns was Executive Vice President, Corporate Development at BioSpace.com, Inc., a news and information website serving the pharmaceutical and biotechnology industry. From December 1998 to December 2000, Dr. Sterns was the Executive Director and Head of Business Development at Telik, Inc., a publicly-held drug development company. Dr. Sterns received his B.S. in Biological Sciences from the University of Southern California, his Doctorate in Veterinary Medicine from the University of California, Davis, and his M.B.A. from the University of California, Berkeley.

Audit Committee

We have a separately designated standing audit committee established in accordance with Section 3(a) (58) (A) of the Exchange Act. The members of the Audit Committee are Michael F. Bigham, Christine B. Cordaro, Gregory T. Schiffman and Raymond J. Whitaker, Ph.D.

Compliance with Section 16(a) of the Exchange Act

This information will be included in our proxy statement for our 2005 Annual Meeting of Stockholders and is incorporated by reference herein.

Audit Committee Financial Expert

The Board has determined that audit committee member Gregory T. Schiffman is an audit committee financial expert as defined by Item 401(h) of Regulation S-K of the Exchange Act and is independent within the meaning of Item 7(d)(3)(iv) Schedule 14A of the Exchange Act.

Code of Ethics

We have adopted a Code of Corporate Conduct and Ethics that applies to our employees, officers and directors. This Code is available for review on our website at www.xenogen.com. We will post any amendments to or waivers from the Code of Corporate Conduct and Ethics on our website.

Item 11. Executive Compensation.

This information will be included in our proxy statement for our 2005 Annual Meeting of Stockholders and is incorporated by reference herein.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

This information will be included in our proxy statement for our 2005 Annual Meeting of Stockholders and is incorporated by reference herein.

Item 13. Certain Relationships and Related Transactions.

Benjamin Carter and Daniel Carter, the Divisional Vice President, Business Development and Manager of IT Systems and Operations, respectively, of the Company, are both sons of our Chief Executive Officer and Chairman of the Board, David W. Carter and each receives an annual salary in excess of $60,000. Neither serves as an executive officer of the Company.

In connection with the sale of a corporate residence in 2003, Pamela R. Contag, Ph.D., our President and a director, purchased from the Company certain personal property, including home furnishings, for a total cost of $80,500 which the Board believes is equal to or higher than it would have received from a third party.

Christopher H. Contag, Ph.D., a co-founder and chairman of our Scientific Advisory Board, is married to Pamela R. Contag, Ph.D., our President. Dr. Christopher Contag receives a monthly consulting fee of $3,000 for his services as chairman of our Scientific Advisory Board. Dr. Pamela Contag and Dr. Christopher Contag are two of the three co-inventors on certain patents we have licensed from Stanford University. Pursuant to Stanford University's present policy on royalty sharing, the net royalties it receives are shares equally with the inventors, the inventor's department and the inventor's school with each receiving one-third of the net royalties. Each of Dr. Contag is entitled to receive more than $60,000 in royalties paid by Xenogen in 2004.

David W. Carter, our Chief Executive Officer and Chairman of the Board, is a member of the board of directors of Cell Genesys, Inc. Cell Genesys, Inc. has purchased certain imaging products and services from us in the past and may do so in the future. The Board believes that such products and services are provided at a similar cost to those of other independent customers

Item 14. Principal Accountant Fees and Services.

This information will be included in our proxy statement for our 2005 Annual Meeting of Stockholders and is incorporated by reference herein.

PART IV

Item 15. Exhibits and Financial Statement Schedules.

(a) The following documents are filed as a part of this Form 10-K.

(1) Index to Consolidated Financial Statements

(2) Index to Financial Statements Schedules

II - Valuation and Qualifying Accounts and Reserve

We have omitted all other schedules, as those schedules are not applicable, not required, or because the required information is included in the consolidated financial statements or accompanying notes.

(3) Exhibits:

See Item 15(b) below.

(b) Exhibits.

Exhibit Number	Description
3.1(2)	Amended and restated certificate of incorporation of the registrant
3.2(1)	Amended and restated bylaws of the registrant
4.1(1)	Form of specimen common stock certificate
10.1(1)	1996 stock option plan
10.2(1)	Form of 2004 equity incentive plan
10.3	Form of award agreement for 2004 equity incentive plan
10.4(1)	Form of 2004 director stock plan
10.5	Form of restricted stock purchase agreement for 2004 director stock plan
10.6	Director compensation policy
10.7	Summary sheet for executive cash compensation
10.8(3)	Form of indemnification agreement between the registrant and each of its officers and directors
10.9(3)	Employment agreement between the registrant and David W. Carter, dated January 21, 1998
10.10(3)	Employment agreement between the registrant and Pamela R. Contag, Ph.D., dated January 21, 1998
10.11(3)	Real estate lease agreement by and between the registrant and Alameda Real Estate Investments dated January 15, 1998 for 860 Atlantic Avenue, Alameda, California, together with Amendment No. 1 dated June 9, 1998, Amendment No. 2 dated November 28, 2000 and Amendment No. 3 dated January 30, 2003

Exhibit Number	Description
10.12	Amendment No. 4 dated March 1, 2005 to Real estate lease agreement by and between the registrant and Alameda Real Estate Investments dated January 15, 1998 for 860 Atlantic Avenue, Alameda, California
10.13(3)	Real estate lease agreement by and between the registrant and Alameda Real Estate Investments dated June 6, 2000 for 2061 Challenger Drive, Alameda, California, together with Amendment No. 1 dated November 28, 2000
10.14	Amendment No 2. dated March 1, 2005 to Real estate lease agreement by and between the registrant and Alameda Real Estate Investments dated June 6, 2000 for 2061 Challenger Drive, Alameda, California
10.15	Real estate lease agreement by and between the registrant and Alameda Real Estate Investments dated March 1, 2005, together with Addendum thereto
10.16(1)	Real estate lease agreement by and between the registrant and Cedar Brook II Corporate Center, L.P. dated August 1998 for 5 Cedar Brook Drive, Cranbury, New Jersey, together with Amendment No. 1 dated August 5, 1999
10.17(1)	Real estate lease agreement by and between the registrant and Duke-Weeks Realty Limited Partnership, dated February 22, 2000 for 2033 Westport Center Drive, Maryland Heights, Missouri
10.18(1)	Form of common stock warrant
10.19(1)†	License agreement between the registrant and the Board of Trustees of the Leland Stanford Junior University, dated May 5, 2000
10.20(1)†	License agreement between the registrant (Xenogen Biosciences, formerly Embryogen, Inc.) and Ohio University, dated June 13, 1985 and amended July 1, 1991
10.21(1)†	Sublicense agreement between the registrant (Xenogen Biosciences, formerly DNX, Inc.) and GenPharm International, Inc., dated January 1, 1991 together with letter agreement amendment dated August 21, 1991
10.22(1)†	CCD camera manufacture and supply agreement between the registrant and Spectral Instruments, Inc., dated April 9, 2003
10.23(1)†	Commercial license agreement between the registrant and IRM, LLC (an affiliate of Novartis AG), dated July 12, 2000 and amended July 12, 2003 by the registrant and Novartis Institutes for BioMedical Research, Inc. (an affiliate of Novartis AG)
10.24(1)†	License agreement between the registrant and Promega Corporation, dated March 20, 2003
10.25(1)†	Collaborative research agreement between the registrant (Xenogen Biosciences) and Pfizer, Inc., dated September 30, 2001 and amended January 21, 2002, September 29, 2003 and December 11, 2003
10.26(1)†	Collaborative research agreement between the registrant (Xenogen Biosciences) and Pfizer, Inc., dated December 28, 2000 and amended December 28, 2003
10.27(1)	Form of restricted stock purchase agreement between the registrant and Pamela Reilly Contag, Ph.D. and David W. Carter
10.28(1)†	Original equipment manufacturer agreement between the registrant and Andor Technology Limited, dated September 20, 2002

Exhibit Number	Description
10.29(1)†	Supply agreement between the registrant and Biosynth International, Inc., dated December 31, 2001 and amended May 17, 2004
10.30(1)†	Distributor Agreement between the registrant and SC BioSciences Corporation, dated January 27, 2003
10.31(1)†	License Agreement between registrant and Taconic Farms, Inc., dated January 13, 2000 and amended July 1, 2002
10.32(1)†	Contract between the registrant (Xenogen Biosciences) and National Institute of Environmental Health Sciences, dated September 19, 2003
10.33(4)	Loan and Security Agreement between Silicon Valley Bank and the registration dated September 10, 2003, as amended by Loan Modification Agreement dated September 30, 2004
10.34(2)	Amendment No. 1 to contract between the registrant (Xenogen Biosciences and National Institute of Environmental Health Sciences, dated August 2, 2004.
21.1	List of subsidiaries
23.1	Consent of independent registered public accounting firm
24.1	Power of attorney (contained on signature page)
31.1	Certification by the Chief Executive Officer pursuant to Section 302 of the Sabanes-Oxley Act of 2002
31.2	Certification by the Chief Financial Officer pursuant to Section 302 of the Sabanes-Oxley Act of 2002
32	Certifications of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

(1) Incorporated by reference to exhibits to the registrant's registration statement on Form S-1 (File No. 333-114152).

(2) Incorporated by reference to exhibit from the registrant's quarterly report on Form 10-Q for the quarter ended June 30, 2004.

(3) Incorporated by reference to exhibits to the registrant's registration statement on Form S-1 (File No. 333-114152), with the exception of the most recent amendment, dated March 1, 2005, which is filed hereto.

(4) Incorporated by reference to exhibit from the registrant's quarterly report on Form 10-Q for the quarter ended September 30, 2004.

† Portions of this exhibit have been redacted and granted confidential treatment by the Commission.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, on March 14, 2005.

XENOGEN CORPORATION

By: /s/ DAVID W. CARTER
David W. Carter
Chairman of the Board and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints David W. Carter, Pamela Reilly Contag, Ph.D. and William A. Albright, Jr., and each of them, his or her true and lawful attorneys-in-fact, each with full power of substitution, for him or her in any and all capacities, to sign any amendments to this report on Form 10-K and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that each of said attorneys-in-fact or their substitute or substitutes may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities and Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated:

Signature	Title	Date
/s/ DAVID W. CARTER **David W. Carter**	Chairman of the Board and Chief Executive Officer (Principal Executive Officer)	March 14, 2005
/s/ PAMELA REILLY CONTAG, PH.D **Pamela Reilly Contag, Ph.D.**	President and Director	March 14, 2005
/s/ WILLIAM A. ALBRIGHT, JR. **William A. Albright, Jr.**	Senior Vice President, Finance and Operations and Chief Financial Officer (Principal Financial and Accounting Officer)	March 14, 2005
/s/ MICHAEL F. BIGHAM **Michael F. Bigham**	Director	March 9, 2005
/s/ ROBERT W. BRECKON **Robert W. Breckon**	Director	March 14, 2005
/s/ CHRISTINE B. CORDARO **Christine B. Cordaro**	Director	March 14, 2005
/s/ MICHAEL R. EISENSON **Michael R. Eisenson**	Director	March 14, 2005

Signature	Title	Date
/s/ WILLIAM A. HALTER **William A. Halter**	Director	March 14, 2005
/s/ CHRIS JONES **Chris Jones**	Director	March 14, 2005
/s/ GREGORY T. SHIFFMAN **Gregory T. Schiffman**	Director	March 9, 2005
/s/ RAYMOND WHITAKER, PH.D. **Raymond Whitaker, Ph.D.**	Director	March 14, 2005

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of
Xenogen Corporation:

We have audited the accompanying consolidated balance sheets of Xenogen Corporation and its subsidiaries as of December 31, 2004 and 2003, and the related consolidated statements of operations, redeemable convertible preferred stock and stockholders' equity and cash flows for each of the three years in the period ended December 31, 2004. Our audits included the financial statement schedule listed in the Index at Item 15. These financial statements and financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and financial statement schedule based on our audits.

We conducted our audits in accordance with standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audit includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, 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, such financial statements referred to above present fairly, in all material respects, the consolidated financial position of Xenogen Corporation and its subsidiaries as of December 31, 2004, and 2003 and the consolidated results of their operations and their cash flows for each of the three years in the period ended December 31, 2004 in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, such financial statement schedules, when considered in relation to the basic consolidated financial statements taken as a whole, present fairly in all material respects the information set forth therein.

As discussed in Note 1 to the consolidated financial statements, in 2002 the Company changed its method of accounting for goodwill and purchased intangible assets to conform to Statement of Financial Accounting Standards No. 142, Goodwill and Other Intangible Assets.

DELOITTE & TOUCHE LLP

March 18, 2005
San Francisco, California

XENOGEN CORPORATION

CONSOLIDATED BALANCE SHEETS
(In thousands, except share and per share amounts)

	December 31, 2004	December 31, 2003
ASSETS		
Current assets:		
Cash and cash equivalents	$ 19,423	$ 12,519
Short term investments	2,493	1,027
Accounts receivable—net of allowance for doubtful accounts of $738 and $21 and in 2004 and 2003, respectively	7,769	5,460
Inventory	4,175	2,109
Prepaid expenses and other current assets	1,293	1,170
Total current assets	35,153	22,285
Property and equipment—net	3,184	4,966
Purchased intangible assets—net	531	1,135
Restricted investments	50	2,183
Other noncurrent assets	1,020	990
Total assets	$ 39,938	$ 31,559
LIABILITIES, REDEEMABLE CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 2,564	$ 2,088
Accrued compensation	1,998	1,529
Deferred revenue	8,638	9,918
Accrued restructuring charges	281	267
Loans payable—current portion	6,372	1,154
Capital lease obligations—current portion	18	57
Other accrued liabilities	1,211	958
Total current liabilities	21,082	15,971
Noncurrent liabilities:		
Loans payable	1,053	5,163
Capital lease obligations	1	19
Deferred rent	605	685
Accrued restructuring charges	1,250	1,531
Total noncurrent liabilities	2,909	7,398
Commitments and contingencies (Note 8)		
Stockholders' equity:		
Convertible preferred stock, $0.001 par value; 5,000,000 and 10,428,571 shares authorized at December 31, 2004 and 2003, respectively; 0 and 9,418,766 shares issued and outstanding at December 31, 2004 and 2003, respectively; liquidation preference of $0 and $102,853 at December 31, 2004 and 2003, respectively	—	66
Common stock, $0.001 par value; 100,000,000 and 15,714,285 shares authorized at December 31, 2004 and 2003, respectively; 14,769,552 and 1,016,480 issued and outstanding at December 31, 2004 and 2003, respectively (Note 10)	15	7
Additional paid-in capital	186,110	159,600
Notes receivable from stockholders	—	(111)
Deferred stock-based compensation	(2,443)	(5,436)
Accumulated other comprehensive income (loss)	(21)	1
Accumulated deficit	(167,714)	(145,937)
Total stockholders' equity	15,947	8,190
Total liabilities, redeemable convertible preferred stock and stockholders' equity	$ 39,938	$ 31,559

See notes to consolidated financial statements

XENOGEN CORPORATION

CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except share and per share amounts)

	Years Ended December 31,		
	2004	2003	2002
Revenue:			
Product	$ 16,411	$ 7,577	$ 5,148
Contract	8,925	7,369	6,541
License	5,547	5,117	4,325
Total revenue	30,883	20,063	16,014
Cost of revenue:			
Product (a)	10,820	4,385	2,774
Contract (a)	8,761	7,629	9,145
License (a)	909	729	458
Total cost of revenue	20,490	12,743	12,377
Gross margin	10,393	7,320	3,637
Operating expenses:			
Research and development (a)	12,514	11,920	14,125
Selling, general and administrative (a)	16,654	10,890	12,561
Depreciation and amortization expenses	3,092	3,836	4,735
Restructuring charges	—	669	3,411
Total operating expenses	32,260	27,315	34,832
Loss from operations	(21,867)	(19,995)	(31,195)
Other income—net	593	43	54
Interest income	147	122	416
Interest expense	(650)	(717)	(921)
Loss before cumulative effect of an accounting change	(21,777)	(20,547)	(31,646)
Cumulative effect of an accounting change (Notes 1 and 2)—impairment of goodwill	—	—	(30,906)
Net loss	(21,777)	(20,547)	(62,552)
Preferred stock dividends	—	(5,629)	(2,230)
Accretion of redeemable convertible preferred stock	—	(344)	(1,045)
Net loss attributable to common stockholders	$ (21,777)	$ (26,520)	$ (65,827)
Weighted average number of common shares outstanding	7,295,321	782,638	546,824
Loss per share data (basic and diluted):			
Net loss attributable to common stockholders excluding cumulative effect of an accounting change—impairment of goodwill	$ (2.99)	$ (33.89)	$ (63.86)
Cumulative effect of an accounting change—impairment of goodwill	—	—	(56.52)
Net loss attributable to common stockholders	$ (2.99)	$ (33.89)	$ (120.38)

(a) Includes charges for stock-based compensation as follows:

Cost of revenue:			
Product	$ 391	$ 166	$ 115
Contract	257	216	274
License	32	28	19
Total cost of revenue	$ 680	$ 410	$ 408
Research and development	$ 1,481	$ 873	$ 868
Selling, general and administrative	$ 2,364	$ 528	$ 495

See notes to consolidated financial statements

XENOGEN CORPORATION

CONSOLIDATED STATEMENTS OF REDEEMABLE CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY (DEFICIT)
Years Ended December 31, 2004, 2003 and 2002
(In thousands, except per share data)

	Redeemable Convertible Preferred Stock		Convertible Preferred Stock		Common Stock		Additional Paid-In Capital	Notes Receivable From Stock-holders	Deferred Stock-Based Compensation	Other Accumulated Compre-hensive Income	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount	Shares	Amount	Shares	Amount						
Balance, December 31, 2002	3,062,604	$ 114,941	27,169	$ 1	547,716	$ 4	$ 17,218	$(111)	$(1,269)	$ 3	$(125,390)	$(109,544)
Issuance of restricted common stock and common stock to employees upon exercise of options, net of repurchases	—	—	—	—	67,606	—	21	—	—	—	—	21
Dividend on Series G redeemable convertible preferred stock	80,002	3,260	—	—	—	—	(3,260)	—	—	—	—	(3,260)
Accretion of redeemable convertible preferred stock	—	344	—	—	—	—	(344)	—	—	—	—	(344)
Issuance of Series AA convertible preferred stock and common stock, net of issuance cost of $379	—	—	6,013,443	42	401,158	3	21,468	—	—	—	—	21,513
Exchange of shares—cancellation of previous shares	(3,142,606)	(118,545)	3,378,154	23		—	118,519	—	—	—	—	118,542
Beneficial conversion in connection with issuance of Series AA convertible preferred stock	—	—	—	—	—	—	2,369	—	—	—	—	2,369
Deemed dividend to preferred stock in connection with issuance of Series AA convertible preferred stock	—	—	—	—	—	—	(2,369)	—	—	—	—	(2,369)
Amortization of deferred compensation, net of cancellations	—	—	—	—	—	—	5,949	—	(4,167)	—	—	1,782
Compensation charge to nonemployee options	—	—	—	—	—	—	29	—	—	—	—	29
Comprehensive loss:												
Net loss	—	—	—	—	—	—	—	—	—	—	(20,547)	(20,547)
Unrealized loss on available-for-sale investments	—	—	—	—	—	—	—	—	—	(2)	—	(2)
Comprehensive loss	—	—	—	—	—	—	—	—	—	—	—	(20,549)
Balance, December 31, 2003	—	—	9,418,766	66	1,016,480	7	159,600	(111)	(5,436)	1	(145,937)	8,190

See notes to consolidated financial statements

XENOGEN CORPORATION

CONSOLIDATED STATEMENTS OF REDEEMABLE CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY (DEFICIT)—(Continued)

Years Ended December 31, 2004, 2003 and 2002

(In thousands, except per share data)

	Redeemable Convertible Preferred Stock		Convertible Preferred Stock		Common Stock		Additional Paid-In Capital	Notes Receivable From Stock-holders	Deferred Stock-Based Compensation	Other Accumulated Comprehensive Income	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount	Shares	Amount	Shares	Amount						
Balance, December 31, 2003	—	—	9,418,766	$ 66	1,016,480	$ 7	$159,600	$(111)	$(5,436)	$ 1	$(145,937)	$ 8,190
Issuance of restricted common stock and common stock to employees upon exercise of options, net of repurchases	—	—	—	—	88,586	—	37	—	—	—	—	37
Compensation charge fro nonemployee options	—	—	—	—	—	—	7	—	—	—	—	7
Conversion of preferred stock to common	—	—	(9,418,766)	(66)	9,418,766	9	57	—	—	—	—	—
Proceeds from stock offering	—	—	—	—	4,200,000	4	29,396	—	—	—	—	29,400
Expenses of stock offering	—	—	—	—	—	—	(4,517)	—	—	—	—	(4,517)
Issuance of common stock to directors	—	—	—	—	45,720	—	320	—	—	—	—	320
Forgiveness of loan	—	—	—	—	—	—	—	111	—	—	—	111
Amortization of deferred compensation, net of cancellations	—	—	—	—	—	—	1,205	—	2,993	—	—	4,198
Adjust par value upon reverse stock split (Note 10)	—	—	—	—	—	(5)	5	—	—	—	—	—
Comprehensive loss:												
Net loss	—	—	—	—	—	—	—	—	—	—	(21,777)	(21,777)
Unrealized loss on available-for-sale investments	—	—	—	—	—	—	—	—	—	(22)	—	(22)
Comprehensive loss	—	—	—	—	—	—	—	—	—	—	—	(21,799)
Balance, December 31, 2004	—	—	—	$—	14,769,552	$ 15	$186,110	$ —	$(2,443)	$(21)	$(167,714)	$ 15,947

(Concluded)

See notes to consolidated financial statements

XENOGEN CORPORATION

CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Years Ended December 31,		
	2004	2003	2002
Cash flows from operating activities:			
Net loss	$(21,777)	$ (20,547)	$(62,552)
Reconciliation of net loss to net cash used in operating activities:			
Noncash restructuring charges—fixed asset write-offs	—	—	1,156
Noncash stock-based compensation expense	4,525	1,811	1,771
Noncash interest expense related to warrants granted	—	43	26
Amortization of investments	144	—	—
Loan forgiveness	153	—	—
Depreciation and amortization	3,092	3,836	4,735
Impairment of goodwill	—	—	30,906
Gain on disposal of fixed assets	—	458	9
Noncash interest income	(52)	(25)	(38)
Changes in operating assets and liabilities:			
Accounts receivable	(2,309)	(2,967)	(183)
Prepaid expenses and other assets	(113)	(550)	831
Inventory	(2,066)	(1,099)	84
Other noncurrent assets	(41)	36	(32)
Accounts payable	476	(61)	46
Accrued compensation and other liabilities	722	974	(155)
Deferred revenue	(1,280)	4,823	137
Accrued restructuring charges	(267)	(314)	2,112
Deferred rent	(80)	24	55
Net cash used in operating activities	(18,873)	(13,558)	(21,092)
Cash flows from investing activities:			
Purchase of property and equipment	(824)	(1,147)	(2,553)
Proceeds from sale of property and equipment	130	964	—
Purchase of investments	(5,340)	(1,729)	(11,621)
Proceeds from maturities and sales of investments	5,851	2,285	12,375
Unrealized loss on available for sale investments	(11)	—	—
Net cash (used in) provided by investing activities	(194)	373	(1,799)
Cash flows from financing activities:			
Proceeds from issuance of common stock	37	29	27
Repurchase of common stock	—	(8)	(4)
Proceeds for stock offering	24,883	—	—
Proceeds from issuance of convertible preferred stock	—	21,510	983
Borrowings from loans	3,292	5,059	2,335
Repayment of loans	(2,184)	(6,063)	(2,888)
Capital lease payments	(57)	(44)	(56)
Net cash provided by financing activities	25,971	20,483	397
Net increase (decrease) in cash and cash equivalents	6,904	7,298	(22,494)
Cash and cash equivalents, beginning of year	12,519	5,221	27,715
Cash and cash equivalents, end of year	$ 19,423	$ 12,519	$ 5,221
Supplemental disclosure of cash flow information—cash paid for interest	$ 650	$ 717	$ 921
Supplemental disclosures of noncash investing and financing activities:			
Warrants issued in conjunction with loans	$ —	$ —	$ 24
Stock dividends to redeemable convertible preferred stockholders	$ —	$ 5,629	$ 2,371
Accretion of redeemable convertible preferred stock	$ —	$ 344	$ 1,045
Exchange of shares to Series AA preferred stock and common stock	$ —	$118,542	$ —

See notes to consolidated financial statements

1. Summary of Significant Accounting Policies

Organization and Basis of Presentation—Xenogen Corporation (the "Company") was founded on August 1, 1995, as a life sciences company incorporated in the State of California. In September 2000, the Board of Directors approved the Company's reincorporation in the State of Delaware. The reincorporation was approved by the State of Delaware on September 26, 2000.

We develop and manufacture products and technologies for acquiring, analyzing and managing complex image data from live animals. These products and technologies are comprised of an imaging system, software and biological materials, and are designed to improve the efficiency and productivity of drug discovery and development by facilitating biological assessment. Our *in vivo* biophotonic imaging system combines technologies in molecular biology and physiology to enable researchers to track and monitor the dynamic properties associated with the mechanisms of disease and the impact of drugs on such mechanisms as they occur at the molecular level in live animals.

Principles of Consolidation—The consolidated financial statements include the accounts of the Company and our wholly-owned subsidiary, Xenogen Biosciences Corporation, incorporated in the State of Ohio (DNX). All significant intercompany accounts and transactions have been eliminated.

Use of Estimates—The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. Actual results could differ from those estimates.

Reclassifications—Certain prior year amounts have been reclassified to conform with current year presentation. These reclassifications had no effect on net loss or losses per share.

Cash and Cash Equivalents—We consider all short-term, highly liquid investments with original maturity of three months or less to be cash equivalents.

Short-Term Investments—We account for short-term investments in accordance with Statement of Financial Accounting Standards (SFAS) No. 115, *Accounting for Certain Investments in Debt and Equity Securities*. To date, all short-term investments, comprised of corporate debt securities, have been classified as available-for-sale, and are carried at market value as determined based on quoted market prices. Unrealized gains and losses are reported in other comprehensive income. The amortized cost of debt securities is adjusted for amortization of premiums and accretion of discounts to maturity. Such amortization is included in interest income. Realized gains and losses and declines in value judged to be other than temporary for available-for-sale securities are included in interest and other income and have not been significant to date. Realized gains and losses are computed on a specific identification basis.

Restricted Investments—We account for certain investments primarily comprised of money market funds and certificate of deposits as restricted investments in connection with lease agreements and loans.

Fair Value of Financial Instruments—The carrying amounts of certain of our financial instruments, including cash and cash equivalents and investments, approximate fair value due to their short maturities. Based on borrowing rates currently available to us for loans and capital lease obligations with similar terms, the carrying value of our debt obligations approximate fair value.

Inventories—Inventories are stated at the lower of standard cost, which approximates actual cost or market. Cost is based on the first in, first out method.

Property and Equipment—Property and equipment including equipment held under capital leases are stated at cost, less accumulated depreciation and amortization. Depreciation is provided using the straight-line method over the estimated useful lives of the respective assets (five years for furniture and fixtures, and three years for laboratory and office equipment). Amortization of leasehold improvements is determined using the straight-line method over the shorter of useful life of the assets or the life of the lease. Equipment under capital leases is amortized over the lesser of its lease term or estimated useful life.

Software Costs—Statement of Financial Accounting Standards No. 86, *Accounting for the Costs of Computer Software to be Sold, Leased or Otherwise Marketed*, requires capitalization of certain software development costs subsequent to the establishment of technological feasibility. Based on our product development process, technological feasibility is established upon the completion of a working model. To date, costs incurred by us between the completion of the working model and the point at which the product is ready for general release have been insignificant. Accordingly, we have charged all such costs to research and development expense in the period incurred.

Purchased Goodwill—Goodwill was attributable to the acquisition of Chrysalis DNX Transgenic Sciences Corporation (DNX) in November of 2000 (see Note 3). On January 1, 2002, we adopted the provisions of Statement Financial Accounting Standards No. 142, *Goodwill and Other Intangible Assets* (SFAS No. 142), and as a result, we ceased to amortize goodwill. In lieu of amortization, we performed an initial impairment review of goodwill in 2002 in accordance with the transition provisions of SFAS No. 142. Accordingly, we recorded an impairment of goodwill of approximately $30.9 million, as cumulative effect of an accounting change in the consolidated statement of operations for the year ended December 31, 2002. Prior to the adoption of SFAS No. 142, our growth expectation for DNX were such that no impairment of the goodwill had been indicated.

The change in the carrying amount of goodwill, which is only attributable to DNX, for December 31, 2002, was as follows (in thousands):

Balance, beginning of year	$ 30,420
Reclassification of assembled workforce	486
Impairment of goodwill (see Note 3)	(30,906)
Balance, end of year	$ —

The impairment of goodwill was recorded as cumulative effect of an accounting change in the consolidated statement of operations for the year ended December 31, 2002.

Impairment of Long-Lived Assets—We account for long-lived assets in accordance with Statement of Financial Accounting Standards No. 144, *Accounting for the Impairment or Disposal of Long-Lived Assets* (SFAS No. 144), which was adopted on January 1, 2002. SFAS No. 144 supersedes SFAS No. 121, *Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets To Be Disposed of* (SFAS No. 121). We regularly evaluate our long-lived assets, including our intangible assets, for indicators of possible impairment whenever events or changes in business circumstances indicate that the carrying amount of the assets may not be fully recoverable. An impairment loss would be recognized when estimated undiscounted future cash flows expected to result from the use of an asset and its eventual disposition are less than its carrying amount. Impairment, if any, is measured using discounted cash flows. In 2004, 2003 and 2002, we performed an evaluation of our long-lived assets and noted no impairment.

Revenue Recognition—We recognize revenues in accordance with Securities and Exchange Commission Staff Accounting Bulletin No. 104 (SAB 104). Arrangements with multiple elements are accounted for in accordance with EITF 00-21, "Revenue Arrangements with Multiple Deliverables." Revenues are recognized when persuasive evidence of an arrangement exists, delivery has occurred or services have been rendered, the price is fixed and determinable and collectibility is reasonably assured.

We generate revenue primarily from two sources: (1) sales of our IVIS Imaging System and associated accessories, and (2) licenses for the use of our *in vivo* biophotonic imaging technology, transgenic animals and associated biological products to customers on a nonexclusive and nontransferable basis for the purposes of its application in the fields of drug recovery and/or preclinical drug development research.

Our IVIS Imaging System is composed of separate hardware and software components. The hardware (non-software) component is primarily an enclosed ultra-sensitive CCD camera system. The primary software component (Living Image) enables the user to organize and view the image data. This software component is not considered essential to the functionality of the camera system as similar software is available from other vendors. We allocate revenue on the sale of its IVIS Imaging Systems between software and non-software related deliverables based on fair value as required by EITF 03-5.

Revenue allocated to non-software deliverables is further allocated based on the separation criteria established in EITF 00-21. Using that criteria, which requires that each deliverable have stand-alone value in order to be considered a separate unit of accounting, we have identified four separate non-software deliverables: (1) the camera system, (2) the technology licenses, (3) follow-on technical services, and (4) system accessories. We allocate revenue to these units of accounting based on fair value as determined by reference to the price at which it would be sold separately by us and/or other third-parties as appropriate. Revenue allocated to each individual unit of accounting is then recognized in accordance with the requirements of SAB 104.

Revenue from the sale of add on accessories is recognized upon delivery (i.e. transfer of title), as the functionality of accessories is not contingent upon installation due to the "plug and play" nature of the accessories. Revenue associated with follow-on technical services is recognized as the services are performed.

We grant time-based technology licenses to our commercial customers. The fees, net of any customer discounts, attributable to these time-based technology licenses are recognized as earned on a straight-line basis over the term of the license. We grant perpetual technology licenses to academic and not-for-profit customers in connection with the sale of the imaging system. The IVIS Imaging System and related perpetual technology licenses are sold as a combined unit and revenue is recognized upon installation of the combined unit.

Revenue allocated to the software and related customer support is accounted for separately in accordance with AICPA Statement of Position 97-2, *Software Revenue Recognition*, or SOP 97-2. Under SOP 97-2, the software components are recognized upon installation of the system as the functionality of the system is contingent upon installation due to the complex nature of the system. Post customer support is deferred and amortized over a straight-line basis over customer support period.

Deferred revenue, primarily related to time-based technology licenses and software maintenance contracts, is recorded when the payments from the customer are received prior to our conclusion of performance obligations related to the payment and recognized upon completion of those performance criteria. Contract payments are generally for one year or less.

Revenue relating to research and development agreements is recognized as the defined services are performed. Under these agreements, we are required to perform research and development activities as specified in each respective agreement. The payments received under these agreements are non refundable.

Because services are performed ratably over the period, contract revenue attributable to fixed price contracts is recognized on a straight-line basis over the term of the contract provided that the payments are non refundable and are based on an agreed upon schedule and the services are performed ratably over the term of the contract. Certain agreements may define specific milestones and the payments associated with each milestone. Such payments are recognized as revenue upon achievement of the milestone events, after which we have no future performance obligations to this payment. Any payments received in advance of the completion of the milestone, are recorded as deferred revenue.

Sales to distributors are recognized upon sale of the product by the distributor to the end user. Our arrangements with end customers do not allow for product returns.

Product Warranty—We warrant our IVIS Imaging System for a period of one year. We accrue for estimated warranty costs concurrent with the recognition of revenue. The initial warranty accrual is based upon our historical experience and is included in other current liabilities. The amounts charged and accrued against the warranty reserve are as follows (in thousands):

	2004	2003
Balance, beginning of year	$ 131	$ 93
Current year accrual	372	91
Warranty expenditures charged to accrual	(257)	(53)
Balance, end of year	$ 246	$131

Research and Development—Research and development costs are expensed as incurred and include costs associated with company sponsored, collaborative and contracted research and development activities. Research and development costs consist of direct and indirect internal costs related to specific projects as well as fees paid to other entities that conduct certain research activities on behalf of the company.

Income Taxes—We utilize the liability method of accounting for income taxes. Under this method, deferred tax assets and liabilities are determined based on differences between financial reporting and tax basis of assets and liabilities, and are measured using enacted tax rates and laws that will be in effect when the differences are expected to reverse. A valuation allowance is recorded as realization of deferred tax assets is dependent upon future earnings, if any, the timing and amount of which are uncertain.

Stock-Based Compensation—We have elected to follow Accounting Principles Board Opinion No. 25, *Accounting for Stock Issued to Employees* (APB 25), and related interpretations in accounting for our employee stock options because the alternative fair value accounting provided for under Statement of Financial Accounting Standards No. 123, *Accounting for Stock-Based Compensation* (SFAS No. 123), as amended by SFAS No. 148, requires use of option valuation models that were not developed for use in valuing employee stock options. Under APB 25, when the exercise price of the Company's employee and director stock options equals the market price of the underlying stock on the date of grant, no compensation expense is recognized.

SFAS No. 123 requires that stock option information be disclosed as if we had accounted for our employee stock options granted under the fair value method of SFAS No. 123. The fair value of these options was estimated at the date of grant using the Black-Sholes option pricing model, and was amortized using the graded vesting method over the options vesting period, with the following weighted-average assumptions:

	2004	2003	2002
Dividend yield	—	—	—
Volatility	32%	—	—
Risk-free interest rate	3.5%	3.5%	4.2
Weighted average expected life (in years)	5	5	5

The weighted-average fair value of stock options granted in the years ended December 31, 2004, 2003, and 2002 were $4.07, $1.46 and $1.85, respectively. The minimum value basis for pricing options was used for all grants made prior to Xenogen becoming a publicly traded company in July 2004. For options granted after July 18, 2004, an average stock volatility factor of 58% was utilized for valuation.

The following table summarizes relevant information as to reported results, with supplemental information as if the fair value recognition provisions of SFAS No. 123 had been applied (in thousands, except per share data):

	Years Ended December 31,		
	2004	2003	2002
Net loss attributable to common stockholders:	$(21,777)	$(26,520)	$(65,827)
Add employee stock-based compensation	4,518	1,782	1,771
Deduct stock-based compensation determined under the fair value based method for all awards, net of cancellations	(4,102)	(281)	(2,682)
Pro forma	$(21,361)	$(25,019)	$(66,738)
Basic and diluted net loss attributable to common stockholders loss per share:			
As reported	$ (2.99)	$ (33.89)	$(120.38)
Pro forma	$ (2.93)	$ (31.97)	$(122.05)

During the preparation of our 2004 consolidated financial statements, we determined that pro forma loss and pro forma net loss per share for 2003 had been calculated incorrectly. Accordingly, such pro forma amounts presented above have been revised. The effect was to decrease the pro forma net loss for 2003 by $0.7 million. This change did not impact our consolidated financial position, results of operation or cash flows for any of the periods presented.

Stock compensation expense for options granted to nonemployees has been determined in accordance with SFAS No. 123 and Emerging Issues Task Force (EITF) 96-18, Accounting for Equity Instruments that are Issued to Other Than Employees for Acquiring, or in Conjunction with, Selling Goods or Services, as the fair value of the consideration received or the fair value of the equity instruments issued, whichever is more reliably measured. The fair value of options granted to nonemployees is remeasured as the underlying options vest.

Loss Per Share—Basic net loss attributable to common stockholders per share is computed by dividing net loss by the weighted average number of common shares outstanding during the period (excluding shares subject to repurchase). Diluted net loss per share was the same as basic net loss attributable to common stockholders per share for all periods presented since the effects of any potentially dilutive securities are excluded as they are antidilutive due to our net losses.

Other Comprehensive Loss—Comprehensive loss is defined as the changes in net assets during the period from non-owner sources, including unrealized losses on available-for-sale investments.

Significant Concentrations—Cash equivalents and investments are financial instruments that potentially subject us to concentrations of risk to the extent of amounts recorded in the consolidated balance sheets. Xenogen invests cash, which is not required for immediate operating needs, primarily in highly liquid instruments, which bear minimal risk due to their short-term maturity.

We have not experienced significant credit loss from our accounts receivable, licenses, grants, and collaboration agreements, and none are currently expected. We perform a regular review of our customer activity and associated credit risks, and do not require collateral from our customers.

We are dependent on the continuing validity of our exclusive license obtained from a university for the use of licensed patents and certain materials as a core to our proprietary-developed products and technologies.

We rely on several companies as the sole source of various materials used in our manufacturing process. Any interruption in the supply of these materials could result in the failure to meet customer demand.

Revenue from customers representing 10% or more of total revenue during 2004, 2003 and 2002 was as follows:

	2004	2003	2002
Customer A	16%	21%	19%
Customer B	—	10%	15%

Recent Accounting Pronouncements— In December 2002, the Financial Accounting Standards Board (FASB) issued SFAS No. 148, "*Accounting for Stock-Based Compensation-Transition and Disclosure*" which amends FASB Statement No. 123, "*Accounting for Stock-Based Compensation,*" to provide alternative methods of transition for a voluntary change to the fair value based method of accounting for stock-based employee compensation. In addition, SFAS No. 148 amends the disclosure requirements of SFAS No. 123 to require prominent disclosures in both annual and interim financial statements of the method of accounting for stock-based employee compensation and the effect of the method used on reported results. We adopted the disclosure provisions of SFAS No. 148 at the beginning of fiscal 2002. In December 2004, the FASB issued Statement No. 123(R) "*Share-Based Payment*" This statement requires that stock-based compensation be recognized as a cost in the financial statements and that such cost be measured based on the fair value of the stock-based compensation. Our adoption of this statement, which we expect to occur in the third quarter of 2005, will have a material, although non-cash, impact on our condensed consolidated statements of operations.

In March 2004, the EITF reached a final consensus on Issue 03-1, "*The Meaning of Other-Than-Temporary Impairment and its Application to Certain Investments*", to provide additional guidance in determining whether investment securities have an impairment which should be considered other-than-temporary. On September 15, 2004 the FASB issued proposed FSP EITF Issue 03-1-a to address the application of the EITF Issue 03-1 to debt securities that are affected by interest rate and/or sector-spread changes only. On September 30, 2004, the FASB issued FSP EITF Issue 03-1-1, which delayed the effective date of certain paragraphs of the EITF until EITF 03-1-a is issued. We expect that the adoption of this Issue and the related FSP's will not have a significant effect on our financial condition or results of operations.

In May of 2003, the FASB issued SFAS No. 150, *Accounting for Certain Financial Instruments with Characteristics of both Liabilities and Equity*. SFAS No. 150 requires issuers to classify as liabilities (or assets in some circumstances) certain financial instruments that embody obligations. Financial instruments within the scope of SFAS No. 150 shall be initially measured at fair value and subsequently revalued with changes in value being reflected in interest cost. SFAS No. 150 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. Restatement is not permitted. The adoption of SFAS No. 150 did not have a significant impact on our consolidated financial statements.

In April of 2003, the FASB issued SFAS No. 149, *Amendment of Statement 133 on Derivative Instruments and Hedging Activities*. SFAS No. 149 amends and clarifies financial accounting and reporting for derivative instruments, including certain derivative instruments embedded in other contracts and for hedging activities under SFAS No. 133, Accounting for Derivative Instruments and Hedging Activities. This statement amends SFAS No. 133 for decisions made as part of the Derivative Implementation Group process that effectively required amendments to SFAS No. 133, in connection with other FASB projects dealing with financial instruments and in connection with implementation issues that have been raised in relation to the application of the definition of a derivative. SFAS No. 149 is effective for contracts entered into or modified after June 30, 2003. Also, the provisions of SFAS No. 149 that relate to SFAS No. 133 implementation issues that have been effective for fiscal years that began prior to June 15, 2003, should continue to be applied in accordance with respective effective dates. In addition, provisions of this statement related to forward purchases or sales of when-issued securities or other securities that do not yet exist, should be applied to both existing and new contracts entered into after June 30, 2003. The adoption of SFAS No. 149 did not have a significant impact on our consolidated financial statements.

In December of 2003, the FASB issued FASB Interpretation No. 46 (Revised), *Consolidation of Variable Interest Entities*, an interpretation of Accounting Research Bulletin No. 51 (FIN No. 46R). FIN No. 46R expands upon and strengthens existing accounting guidance that addresses when a company should include in its financial statements the assets, liabilities and activities of another entity. A variable interest entity is any legal structure used for business purposes that either does not have equity investors with voting rights or has equity investors that do not provide sufficient financial resources for the entity to support its activities. A variable interest entity often holds financial assets, including loans and receivables, real estate or other property. A variable interest entity may be essentially passive or it may engage in research and development or other activities on behalf of another company. Previously, one company generally has included another entity in its consolidated financial statements only if it controlled the entity through voting interests. FIN No. 46R changes that by requiring a variable interest entity to be consolidated by a company if that company is subject to a majority of the risk of loss from the variable interest entity's activities or entitled to receive a majority of the entity's residual returns or both. As of December 17, 2003, the effective date of FIN No. 46R has been deferred until the end of the first interim or annual reporting period ending after March 15, 2004. We do not have any variable interest entities and the adoption had no impact on our consolidated financial statements.

In April 2004, FASB issued FSP FAS No. 129-1, *"Disclosure of Information about Capital Structure, Relating to Contingently Convertible Securities"* to provide disclosure guidance for contingently convertible securities. We adopted the disclosure provisions in the second quarter of 2004 as they applied to the convertible notes issued in March 2003. The adoption of FSP FAS No. 129-1 did not have a material impact on our financial condition or results of operations.

In a recent EITF meeting, EITF Issue No. 04-08, *"Accounting Issues Related to Certain Features of Contingently Convertible Debt and the Effect on Diluted Earnings per Share,"* was discussed. The tentative conclusion was that shares available under contingently convertible debt should be included in diluted earnings per share or EPS, in all periods, except when inclusion is anti-dilutive, regardless of whether the contingency is met and regardless of whether the market price contingency is substantial. Management expects that the adoption of this Issue will not have an effect on our financial condition or results of operations as we currently have no contingently convertible debt outstanding.

2. Purchased Intangible Assets and Impairment of Goodwill

Goodwill was attributable to the acquisition of Chrysalis DNX Transgenic Sciences Corporation (DNX) in November 2000. On January 1, 2002, we adopted the provisions of Statement Financial Accounting Standards No. 142, *Goodwill and Other Intangible Assets* (SFAS No. 142), and as a result, we ceased to amortize goodwill. In lieu of amortization, we performed an initial impairment review of goodwill in 2002 in accordance with the transition provisions of SFAS No. 142. Accordingly, we recorded an impairment of goodwill of approximately $30.9 million, as a cumulative effect of an accounting change in the consolidated statement of operations for the year ended December 31, 2002. Prior to the adoption of SFAS No. 142, our growth expectation for DNX was such that no impairment of the goodwill had been indicated.

The components of identifiable intangible assets are as follows (in thousands):

	December 31, 2004		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Patents	$3,019	$(2,488)	$531

	December 31, 2003		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Patents	$3,019	$(1,884)	$1,135

As of January 1, 2002, purchased intangible asset associated with the assembled workforce in the amount of $486,000, net of accumulated amortization of $291,000, was reclassified to goodwill in accordance with SFAS No. 142, written off, and included in the impairment of goodwill.

Amortization expense related to identifiable intangible assets for the years ended December 31, 2004, 2003 and 2002 was $603,000, $603,000 and $850,000, respectively. Amortization expense for the year ended December 31, 2002 included the write-off of licensed intellectual property of $101,000. Amortization expenses are expected to be approximately $531,000 for 2005. Purchased intangible assets have estimated useful lives of two to five years.

3. Restructuring Charges

In September 2002, we implemented a restructuring program (Restructuring Plan) to bring our expenses more in line with revised revenue and cash flow projections. This plan required the closure of the St. Louis facility, consolidation of the animal production in Cranbury, New Jersey, and elimination of personnel. Through the completion of the Restructuring Plan in December 2002, we recorded $3,411,000 of restructuring charges in accordance with Emerging Issues Task Force 94-3, *Liability Recognition for Certain Employee Termination Benefits and Other Costs to Exit an Activity*, and Staff Accounting Bulletin 100, Restructuring and Impairment Charges. These charges represented estimated employee severance costs, abandonment of leasehold improvements and other fixed assets associated with the vacated facility, and remaining lease obligation, in the amount of $275,000, $1,028,000 and $2,108,000, respectively. At the completion of the Restructuring Plan, we incurred approximately $228,000 in severance payments to employees.

In connection with the closure of the St. Louis facility, we wrote off of the remaining cost of licensed intellectual property in the amount of $101,000.

In February 2003, we further reduced our workforce at both the Alameda and New Jersey sites. We recorded severance cost of $669,000 in accordance with SFAS No. 146, *Accounting for Costs Associated with Exit or Disposal Activities*, which requires companies to recognize costs associated with restructuring, discontinued operations, plant closing or other exit or disposal activity, when they are incurred rather than at the date of a commitment to an exit or disposal plan.

The following table depicts the restructuring and impairment activity during fiscal years ended December 31, 2004 and 2003 (in thousands):

	Severance and Related Charges	Vacated Facilities	Total
Accrued restructuring charges:			
Ending balance, December 31, 2002	$ 47	$2,065	$2,112
Charged to expense	669	—	669
Cash expenditures	(716)	(267)	(983)
Ending balance, December 31, 2003	—	1,798	1,798
Cash expenditures	—	(267)	(267)
Ending balance, December 31, 2004	$ —	$1,531	$1,531

At December 31, 2004 and 2003, we recorded approximately $281,000 and $267,000, respectively, as current accrued restructuring charges and approximately $1,250,000 and $1,531,000, respectively, as noncurrent accrued restructuring charges in the consolidated balance sheets.

We expect to pay the accrued lease obligations over the remaining term of the lease, which terminates in 2010.

4. Short-Term and Restricted Investments

We invest our excess cash in debt instruments of financial institutions and corporations with strong credit ratings. We have established guidelines relative to diversification and maturities that minimize risk and maximize liquidity. These guidelines are periodically reviewed and modified to take advantage of trends in yields and interest rates. We have not experienced any material losses on our investments. At December 31, 2004, all of the investments held by the Company had a contractual maturity of one year or less.

The following is a summary of our short-term and restricted investments, accounted for as available-for-sale securities (in thousands):

	Available-for-Sale Securities		
	Cost	Gross Unrealized Gains (Losses)	Estimated Fair Value
December 31, 2004:			
Certificates of deposit	$ 254	$—	$ 254
Corporate debt securities	2,310	(21)	2,289
	$2,564	$ (21)	$2,543
December 31, 2003:			
Money market funds	$1,024	$—	$1,024
Certificates of deposit	1,159	—	1,159
Corporate debt securities	1,026	1	1,027
	$3,209	$ 1	$3,210

At December 31, 2004 and 2003, approximately $50,000, and $2,183,000, respectively, held in certificates of deposit and money market funds, represented restricted investments in connection with lease agreements and loans and was recorded as restricted investments on the consolidated balance sheets. At December 31, 2004 and 2003, approximately $204,000 and $0, respectively, held in certificates of deposit was not restricted in connection with lease agreements and loans and was recorded with short-term investments on the consolidated balance sheets.

5. Inventory

Inventories consisted of the following (in thousands) at the periods indicated below:

	December 31,	
	2004	2003
Raw materials	$2,274	$2,044
Finished goods	663	65
Work in Progress	1,238	—
	$4,175	$2,109

6. Property and Equipment

Property and equipment consist of the following (in thousands):

	December 31, 2004	December 31, 2003
Land and building	$ —	$ —
Furniture and office equipment	3,904	3,910
Laboratory equipment	9,074	8,676
Leasehold improvements	4,374	4,117
	17,352	16,703
Less accumulated depreciation and amortization	(14,168)	(11,737)
	$ 3,184	$ 4,966

Depreciation expense was approximately $2,487,000, $3,232,000 and $3,887,000 at December 31, 2004, 2003, and 2002, respectively.

During 2003, we sold a corporate house and its furnishings resulting in a loss of $308,000. This loss was included in other income, net.

The cost of assets held under capital leases included in fixed assets was approximately $263,000 at both December 31, 2004 and 2003. Accumulated amortization of assets held under capital leases was approximately $243,000 and $219,000 at December 31, 2004 and 2003, respectively.

7. Loans Payable and Capital Lease Obligations

Loans payable at December 31, 2004 and 2003 consist of the following (in thousands):

	Interest Rate	Payment Term	Repayment Schedule	Due Date	December 31, 2004	December 31, 2003
Bank of America	7.88%	Principal & interest	Monthly	2005	$ 42	$ 128
Bank of America	3.00-3.25%	Interest only	Monthly	2004	—	1,000
Silicon Valley Bank	5.50%	Interest only	Principal at maturity Monthly	2005	5,000	2,000
GE Capital loans	9.28-9.94%	Principal & interest	Principal at maturity Monthly	2006-2007	2,383	3,227
Total					$7,425	$6,355

The weighted average interest rate on loans for the year ended December 31, 2004 and 2003 was 8.25% and 10.21%, respectively.

Capital lease obligations at December 31, 2004 and 2003 consist of the following (in thousands):

	Interest Rate	Payment Term	December 31, 2004	December 31, 2003
Ford	6.90-7.90%	Principal & interest	$ 8	$22
Dell	6.42%	Principal & interest	8	21
CM Financial	11.46-11.48%	Principal & interest	3	33
Total			$19	$76

Under the terms of the secured loan with Silicon Valley Bank, the Company is required to maintain at all times a certain ratio, calculated by the sum of unrestricted cash and investment with the bank plus eligible accounts

receivable, divided by outstanding loan amount. Total available borrowing under this credit facility is $7 million, and is secured by the Company's assets excluding encumbered fixed assets and intellectual property. As of December 31, 2004, we had borrowed $5 million on our $7 million credit facility and utilized an additional $0.8 million towards certain real estate letter of credits, leaving us $1.2 million of available facility under this agreement.

At December 31, 2004 and 2003, we were in compliance with covenants under the agreement.

Under the terms of the secured loan with Bank of America, we are required to restrict the use of cash equivalent to its outstanding loan amount. We can not withdraw funds from the deposit account without prior written consent of the bank. At December 31, 2004 and 2003, we were in compliance with such requirement.

In January 2004, we repaid all obligations relating to the $1 million loan from Bank of America.

Our equipment lines with other lenders are secured by the financed equipment.

The aggregate amount of required future payments on loans payable and capital leases at December 31, 2004, is as follows (in thousands):

	Loans Payable	Capital Leases
2005	$ 6,762	$ 19
2006	1,004	1
2007	102	—
Total minimum payments	7,868	20
Less amount representing interest	(443)	(1)
Present value of minimum payments	7,425	19
Current portion	(6,372)	(18)
Long-term portion	$ 1,053	$ 1

8. Commitments and Contingencies

Operating Leases—We lease certain real property under non-cancelable operating lease agreements in Alameda and Mountain View, California; Cranbury, New Jersey; and St. Louis, Missouri. These leases expire at various dates between 2006 and 2010 and have extension options of between one and five years. In connection with these lease agreements, we are required to hold certificates of deposit amounting to $50,000 and $1,159,000, included in restricted investments at December 31, 2004 and 2003.

The following is a schedule of minimum rental commitments under operating lease agreements as of December 31, 2004 (in thousands):

Years Ending December 31,	
2005	$ 3,734
2006	2,422
2007	1,996
2008	1,983
2009	1,693
Thereafter	81
	$11,909

During the years ended December 31, 2004, 2003 and 2002, we incurred rent expenses of approximately $3,919,000, $3,729,000 and $3,809,000, respectively.

On March 2, 2005, we concurrently entered into two amendments to existing real estate operating leases and one new real estate operating lease in Alameda. One amendment extends the term of one lease for an additional term of five years commencing on March 1, 2006 and ending February 28, 2011 and the other amendment provides for and requires the early relocation from one facility to the other. The new real estate lease is for approximately five years and ten months with two options to extend the term each for an additional five-year period. These new lease amendments and agreements will not increase our overall minimum rental commitments under operating lease agreements.

Purchase Commitments—We had various purchase order commitments totaling approximately $1.1 million as of December 31, 2004.

Legal Proceedings—On August 9, 2001, AntiCancer, Inc. filed a lawsuit in the Superior Court of California, County of San Diego, against us and other third parties. The complaint alleges five causes of action, including trade libel, defamation, intentional interference with contract, intentional interference with prospective economic advantage and unfair competition. These claims are based on alleged false statements made by unidentified employees and/or third parties regarding AntiCancer's products. AntiCancer seeks unspecified general and exemplary monetary damages arising from the alleged impact of the alleged false statements, as well as its costs and expenses incurred in connection with the lawsuit. The Court recently denied our motion for summary judgment of the case, and trial is scheduled to begin on September 19, 2005. We believe the complaint is without merit and are mounting a vigorous defense.

On March 7, 2005, AntiCancer filed a lawsuit against us in the U.S. District Court for the Southern District of California alleging infringement of five patents of AntiCancer. The complaint seeks damages and injunctive relief against the alleged infringement. We intend to vigorously defend ourselves against such infringement claims, including contesting the validity of AntiCancer's patents. Even if we prevail in these lawsuits, the defense of these or similar lawsuits will be expensive and time-consuming and may distract our management from operating our business.

From time to time we are involved in litigation arising out of claims in the normal course of business. Based on the information presently available, management believes that there are no claims or actions pending or threatened against us, the ultimate resolution of which will have a material adverse effect on our financial position, liquidity or results of operations, although the results of litigation are inherently uncertain, and adverse outcomes are possible.

9. Redeemable Convertible Preferred Stock

In accordance with EITF Issue No. 00-27, Application of EITF Issue No. 98-5, *Accounting for Convertible Securities with Beneficial Conversion Features or Contingently Adjustable Conversion Ratios to Certain Convertible Instruments* (EITF Issue No. 00-27), we recorded a deemed dividend in the amount of $141,000 in 2002, equal to the additional number of shares of common stock resulting from the adjustment of the conversion ratio multiplied by the Company's common stock price at the issuance date of Series F redeemable convertible preferred stock.

During 2003 and 2002, we paid a dividend in kind for Series G redeemable convertible preferred stock of 80,002 and 54,713 shares, respectively, of Series G redeemable convertible preferred stock. These shares were valued at $3.2 million and $2.2 million, and were recorded in our consolidated financial statements as an increase to Series G redeemable convertible preferred stock.

From the issuance of Series C, D, E, F and G redeemable convertible preferred shares until the conversion of the redeemable convertible preferred stock, we accreted annually up to the respective redemption values of each of the Series C, D, E, F and G redeemable convertible preferred shares. In 2003 and 2002, cumulative

accretion to the full redemption values was $2,099,000 and $1,755,000, respectively, recorded as mezzanine debt and presented outside of stockholders' equity.

In 2003, upon issuance of the Series AA convertible preferred stock, all outstanding Series C, D, E, F and G redeemable convertible preferred stock were converted to Series AA convertible preferred stock and common stock. Furthermore, all outstanding warrants were converted to Series AA warrants or common stock warrants (see Note 11).

10. Convertible Preferred Stock and Stockholders' Equity

Initial Public Offering

On July 21, 2004, we completed an Initial Public Offering (IPO) of 4,200,000 shares of common stock at a price of $7.00 per share, for proceeds of $24.9 million net of underwriting commissions and offering expenses.

Reverse Stock Split

In April 2004, our board of directors approved a 1 for 7 reverse stock split for all common and preferred shares. Such stock split was approved by our shareholders on May 31, 2004 and was effective on July 7, 2004. All shares, per share data and liquidation preferences per share in the accompanying consolidated financial statements have been restated to reflect the reverse stock split.

On July 7, 2004, we amended our certificate of incorporation to reflect a par value of $0.007 for both common and preferred shares after the stock split. Subsequent to the stock split and with the initial public offering on July 21, 2004, we amended our certificate of incorporation to reflect a par value of $0.001 for both common and preferred shares.

Convertible Preferred Stock

In April and July of 2003, we issued approximately 6 million shares of Series AA convertible preferred stock at $3.64 per share, raising net proceeds of approximately $21.5 million. In connection with the financing, we also issued approximately 3.4 million shares of Series AA convertible preferred stock and 400,000 shares of common stock, in exchange for cancellation of 3.2 million shares of all other outstanding Series of redeemable and convertible preferred stock. In connection with the issuance of Series AA convertible preferred stock, we also exchanged outstanding warrants to purchase previously issued Series of preferred stock for approximately 369,000 warrants to purchase shares of Series AA convertible preferred stock and 8,000 warrants to purchase common stock. In accordance with EITF Issue No. 00-27, Application of EITF Issue No. 98-5, *Accounting for Convertible Securities with Beneficial Conversion Features or Contingently Adjustable Conversion Ratios to Certain Convertible Instruments* (EITF Issue No. 00-27), we recorded an aggregate deemed dividend charge of $2,369,000 in 2003, representing the aggregate beneficial conversion feature.

In connection with the completion of the initial public offering on July 21, 2004, all 9,418,766 shares of convertible preferred stock were automatically converted into 9,418,766 shares of common stock.

Convertible preferred stock is issuable in series, with rights and preferences. Shares issued and outstanding as of December 31, 2004 and 2003 were 0 and 9,418,766, respectively, with a liquidation value of $0 and $102,853,000, respectively.

11. Stock-Based Compensation

Common Stock

Common stock issued to certain employees of the Company upon the early exercise of options and issuance of restricted stock is subject to right of repurchase which lapses over vesting periods. At December 31, 2004 and

2003, 12,499 and 726 shares were subject to repurchase at a weighted-average price per share of $0.48 and $3.43, respectively.

Reserved Shares

As of December 31, 2003 and 2004, Xenogen has reserved shares of common stock for future issuance as follows:

	2004	2003
Stock options	2,698,502	1,499,920
Warrants	395,483	395,483
Preferred stock	—	9,418,766
	3,093,985	11,314,169

Note Receivable from Stockholders

During 1998, we issued 88,642 shares of common stock to officers in exchange for full recourse notes receivable of approximately $111,000, at an interest rate of 6% per annum. The notes, initially due at the earlier of December 31, 2002 or cessation of employment, were amended to become due at December 31, 2004 or cessation of the employment. Shares were fully vested at December 31, 2003.

On March 5, 2004, our board of directors passed a resolution to forgive outstanding notes receivable, including accrued interest contingent upon the filing of a registration statement with the Securities and Exchange Commission on Form S-1 for an initial public offering before November 1, 2004. As this filing occurred on April 2, 2004, the notes were forgiven and a variable accounting stock-based compensation charge of $0.8 million was recorded for 2004.

Warrants

In connection with the issuance of convertible notes payable in 1997, we granted warrants to purchase 12,033 shares of Series C redeemable convertible preferred stock with an exercise price of $12.46 per share to an officer and a stockholder. In 2003, upon the issuance of Series AA convertible preferred stock, these warrants were converted to warrants to purchase Series AA convertible preferred stock and common stock. Upon completion of our IPO, warrants to purchase Series AA convertible preferred stock were converted to common stock warrants. At December 31, 2004 and 2003, these warrants were still outstanding.

In connection with a debt financing in 1998, we issued warrants to purchase 8,021 shares of common stock at an exercise price equal to $12.46 per share. At December 31, 2004 and 2003, these warrants were still outstanding.

In connection with a financing in 1999, we granted a lender warrants to purchase 6,320 shares of common stock at an exercise price equal to $15.82 per share. At December 31, 2004 and 2003, these warrants were still outstanding.

In connection with extensions in amounts available under one of the financing arrangements in 2000, we granted a lender warrants to purchase 1,580 and 2,576 shares of common stock at an exercise price equal to $15.82 and $40.74 per share, respectively. At December 31, 2004 and 2003, these warrants were still outstanding.

In connection with a debt financing in 2001, we issued warrants to purchase 3,589 shares of Series G convertible preferred stock at an exercise price of $40.74 per share. In the accompanying consolidated financial statements, these warrants were valued at approximately $20,000 and recorded as discount to debt to be amortized to expense over the loan's repayment period of 36 months from the date of withdrawal. The

assumptions used in calculating the fair value were as follows: a risk-free interest rate of 4%, a contractual term of 10 years, 8% dividend yield, and a volatility factor of 65%. In 2003, upon issuance of Series AA convertible preferred stock, these warrants were converted to warrants to purchase Series AA convertible preferred stock and common stock. Upon completion of our IPO, warrants to purchase Series AA convertible preferred stock were converted to common stock warrants. At December 31, 2004 and 2003, these warrants were still outstanding.

In connection with the issuance of Series G redeemable convertible preferred stock in 2001 and 2002, we granted warrants to purchase 344,760 and 13,463 shares of Series G redeemable convertible preferred stock, respectively, with an exercise price of $40.74 per share to the investors. Approximately $77,000 and $2.0 million, respectively, of the aggregate proceeds were allocated to the fair value of warrants issued. These warrants were valued using the Black-Scholes method with the following assumptions: a 3% risk-free interest rate, an 8% dividend yield, an expected life of 10 years and a volatility factor of 65%. In 2003, upon issuance of the Series AA convertible preferred stock, these warrants were converted to warrants to purchase Series AA convertible preferred stock and common stock. Upon completion of our IPO, warrants to purchase Series AA convertible preferred stock were converted to common stock warrants. At December 31, 2004 and 2003, these warrants were still outstanding.

In connection with a debt financing in 2002, we issued warrants to purchase 3,141 shares of Series G preferred stock at an exercise price of $40.74 per share. In the accompanying consolidated financial statements, these warrants were valued at approximately $24,000 and recorded as discount to debt to be amortized to expense over the loan's repayment period of 36 months from the date of withdrawal. The assumptions used in calculating the fair value were as follows: a risk-free interest rate of 3.85%, a contractual term of seven years, 8% dividend yield, and a volatility factor of 75%. In 2003, upon issuance of the Series AA convertible preferred stock, these warrants were converted to warrants to purchase Series AA convertible preferred stock and common stock. Upon completion of our IPO, warrants to purchase Series AA convertible preferred stock were converted to common stock warrants. At December 31, 2004 and 2003, these warrants were still outstanding.

Stock Option Plans

1996 Plan

In 1996, our board of directors adopted the 1996 Stock Option Plan (1996 Plan). The 1996 Plan provides for the granting of incentive and nonstatutory stock options to employees, officers, directors, and nonemployees of the Company. Incentive stock options may be granted with exercise prices not less than fair value, and nonstatutory stock options may be granted with an exercise price not less than 85% of the fair value of the common stock on the date of grant. Stock options granted to a stockholder owning more than 10% of voting stock of the Company may be granted with an exercise price of not less than 110% of the fair value of the common stock on the date of grant. Our board of directors determines the fair value of the common stock. Stock options are generally granted with terms of up to ten years and vest over a period of four years under the 1996 Plan. The 1996 Plan, which upon acceptance by the optionee, would permit the optionee to exercise unvested options and enter into a restricted stock purchase agreement with respect to the underlying shares of common stock.

On December 1, 2003, we issued options covering 281,332 shares of its common stock pursuant to an option exchange program, initiated in May 2003. Pursuant to the terms of the option exchange program, eligible optionees were offered the opportunity to exchange outstanding options to purchase our common stock with an exercise price of $0.70 or more for options to purchase our common stock that would be issued at least six months and one day following the cancellation date of the exchanged options with an exercise price equal to the fair market value of such common stock on the date of grant, subject to the optionee continuing to provide services to us through the grant date of the new options. The vesting provisions of the original options would carry over to the newly issued options. We have evaluated this transaction in the context of guidance in EITF 00-23, "Issues Related to the Accounting For Stock Compensation Under APB Opinion No. 25" and FASB Interpretation No. 44,

and have concluded that the reissued options require variable accounting treatment because they were granted with an exercise price less than the fair market value of the underlying common stock at the date of grant. The effect of this variable accounting on the 2004 and 2003 financial statements was compensation of approximately $0.5 million and $1.6 million, respectively.

In April 2004, the 1996 Plan was amended where by no additional shares would be granted out of the plan upon the creation of the 2004 Equity Incentive Plan which became effective upon the closing of our initial public offering in July 2004. Under the amendment, any shares returned to the 1996 Plan resulting from repurchases or termination of options would be reauthorized under the 2004 Plan. Given the amendment, there were no authorized shares available for future grant issuance under the 1996 Plan at December 31, 2004; as of December 31, 2003, 538,075 shares were available for future grant issuance.

2004 Equity Incentive Plan

In April 2004, our board of directors adopted our 2004 Equity Incentive Plan (2004 Plan). The 2004 Plan, which was approved by our shareholders in May 2004, became effective upon the completion of our initial public offering. The 2004 Plan provides for the grant of incentive stock options, within the meaning of Section 422 of the Internal Revenue Code, to employees, and for the grant of nonstatutory stock options, restricted stock, stock appreciation rights, performance units and performance shares to employees, directors and consultants. The 2004 Plan will automatically terminate in 2014 unless terminated sooner at the discretion of management with the approval of our board of directors. A total of 1,000,000 shares of common stock were reserved for issuance pursuant to this plan. During 2004, a total of 61,168 shares, net of cancellations, were issued to various employees. As of December 31, 2004, 964,968 shares were available for future grant issuance, including reauthorizations from cancellations and repurchases under the 1996 Plan of 26,136 shares.

Non- Statutory Stock Option Grant

In July 2004, a non-statutory option was granted to an executive officer for 200,000 shares of common stock with vesting over a four year period. This grant resulted in deferred compensation of $0.1 million. We recorded stock-based compensation expense of $25,000 for the year ended December 31, 2004. As of December 31, 2004, no additional shares were available for future issuances.

In connection with the stock options granted during the year ended December 31, 2004 and 2003, we recorded deferred compensation of $1,115,000 and $6,305,000, respectively, which represents the difference between the option exercise price and the deemed fair market value of the common stock determined for financial reporting purposes on the grant date. The deferred compensation will be recognized as an expense over the vesting period of the underlying stock options, generally four years, in accordance with the method described in FASB Interpretation APB Opinion No. 28, "Accounting for Stock Appreciation Rights and Other Variable Stock Option or Award Plans (An Interpretation of APB No. 15 and 25)." We recorded stock-based compensation expense of $4,525,000 and $1,811,000 for the year ended December 31, 2004 and 2003, respectively.

A summary of our stock option activity and related information from December 31, 2001 to December 31, 2004 is as follows:

	Shares Available for Future Grants	Outstanding Options		
		Shares	Exercise Price	Weighted Average Exercise Price
Balance at December 31, 2001	71,890	361,704	$1.26–$21.00	$12.53
Authorized	100,000	—	—	—
Options granted	(119,799)	119,799	$ 1.00	$ 7.00
Options exercised	—	(3,034)	$1.26–$19.18	$ 8.82
Options canceled	77,907	(77,907)	$2.52–$21.00	$10.99
Options repurchased	543	—	$ 2.52–$ 9.59	$ 6.09
Balance at December 31, 2002	130,541	400,562	$1.26–$21.00	$11.20
Authorized	967,855	—	—	—
Options granted	(949,943)	949,943	$ 0.42–$ 7.00	$ 0.70
Options exercised	—	(238)	$ 2.87–$ 7.00	$ 3.85
Options canceled	388,422	(388,422)	$0.42–$21.00	$10.64
Options repurchased	1,200	—	$ 2.87–$ 9.59	$ 6.79
Balance at December 31, 2003	538,075	961,845	$0.42–$21.00	$ 1.05
Authorized	1,198,582	—	—	—
Options granted	(800,682)	800,682	$ 0.42-$ 7.00	$ 6.21
Options exercised	—	(65,742)	$ 0.42	$ 0.42
Options canceled	28,993	(28,993)	$ 0.42-$19.18	$ 3.15
Adjustment due to reverse stock split	—	1,057	—	—
Balance at December 31, 2004	964,968	1,668,849	$0.42–$21.00	$ 3.51

The following table summarizes information about the stock options outstanding and exercisable under our stock option plans at December 31, 2004:

Range of Exercise Prices	Options Outstanding			Options Exercisable	
Exercise Price	Number Of Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life	Number of Options Vested	Weighted Average Exercise Price
$ 0.42	899,789	$ 0.42	8.92	899,789	$ 0.42
$ 1.26 – $6.15	35,765	$ 5.28	8.77	7,456	$ 2.73
$ 6.20	568	$ 6.20	9.75	—	$ —
$ 6.39	2,580	$ 6.39	9.63	—	$ —
$ 6.43	4,427	$ 6.43	9.65	—	$ —
$ 6.50	200,000	$ 6.50	9.53	—	$ —
$ 7.00	502,492	$ 7.00	9.44	477,208	$ 7.00
$ 9.59	4,172	$ 9.59	5.67	4,172	$ 9.59
$19.18	12,461	$19.18	5.85	12,461	$19.18
$21.00	6,595	$21.00	6.34	6,595	$21.00
	1,668,849	$ 3.51	9.11	1,407,681	$ 2.95

Restricted Stock Awards

On December 1, 2003, we offered to employees 91,428 shares of common stock at $0.42 per share under a restricted stock agreement. At December 31, 2004 and 2003, 91,428 and 68,571 shares of the common stock had

been purchased, respectively. The shares vest over a four-year period. We recorded deferred compensation in the amount $625,000. The deferred compensation will be recognized as an expense over the vesting period in accordance with the method described for awards with graded-vesting in FASB Interpretation APB Opinion No. 28, "Accounting for Stock Appreciation Rights and Other Variable Stock Option or Awards Plans (An Interpretation of APB No. 15 and 25)."

2004 Director Stock Plan

Our 2004 director stock plan was adopted by our board of directors in April 2004 and approved by our shareholders in May 2004. This plan became effective upon the completion of our initial public offering and provides for the periodic grant of restricted stock to our directors.

A total of 150,000 shares were reserved for issuance under the 2004 director stock plan. On July 19, 2004, we issued 45,720 shares to our directors. This grant resulted in a deferred compensation of $0.3 million. We recorded stock-based compensation expense of $0.1 million for the year ended December 31, 2004. As of December 31, 2004, 104,280 shares were available for future issuance.

In addition, the 2004 director stock plan provides for annual increases in the number of shares available for issuance under it on the first day of each fiscal year, beginning with our fiscal year 2005, equal to the lesser of the number of shares granted pursuant to restricted stock awards under the 2004 director stock plan in the prior fiscal year, or an amount determined by the board of directors.

All grants of restricted stock to our non-employee directors under the 2004 director stock plan are automatic. We will grant each non-employee director an initial restricted stock award upon the later of (i) the effective date of this offering, or (ii) when such person first becomes a non-employee director (except for those directors who become non-employee directors by ceasing to be employee directors). This initial award will cover a number of shares of our common stock determined by dividing (a) $40,000 by (b) the fair market value of a share of our common stock on the date of grant, with the number of shares rounded up to the nearest whole share.

Upon each annual stockholder meeting, each non-employee director will be automatically granted a restricted stock award covering a number of shares of our common stock determined by dividing (a) $40,000 by (b) the fair market value of a share of our common stock on the date of grant, with the number of shares rounded up to the nearest whole share, provided he or she is then a non-employee director. However, each director who was not a non-employee director on or before the effective date of this offering (for grants to be made on the date of the annual stockholder meeting to be held in 2005) or the previous year's annual stockholder meeting (for annual grants to be made after 2005) will be automatically granted a pro-rated annual restricted stock award calculated according to the number of quarters of service provided by such non-employee director since the effective date of this offering or the previous year's annual stockholder meeting, as applicable. For purposes of the foregoing calculation, service for only a portion of the quarter will be deemed service for the whole quarter. The per share purchase price for shares subject to the restricted stock awards will equal the par value of a share of common stock ($0.001 per share).

12. Related Party Transactions

Our Chairman is a member of the board of directors of Cell Genesys, Inc. In December 2001, we signed a license agreement with Cell Genesys, Inc. Under the terms of the agreement, we granted a nonexclusive license to Cell Genesys, Inc. and delivered an imaging system for approximately $400,000. The license agreement was amended in November of 2003 for one additional annual term. Also in 2003, Cell Genesys, Inc. made a one-time diligence payment of $300,000 to our subsidiary, Xenogen Biosciences Corporation (XB). The amount owed to XB relating to this agreement was $0 and $1,000 at December 31, 2004 and 2003, respectively.

We entered into a license agreement with a third party (the University) dated July 1, 1997 superseded by a new agreement dated May 5, 2000 (the License). The License provides us with the exclusive worldwide right to use the inventions, certain materials, and related patents in all fields of use, including our right to sublicense all or a portion of the rights pursuant to the License, until the expiration of the last to expire licensed patents.

In accordance with the License, we pay the University an annual nonrefundable royalty payment. In addition, we pay the University certain specified percentages of amounts received from the licensed patents and from our sublicense, if any. Included in the accompanying consolidated statements of operations for the years ended December 31, 2004, 2003, and 2002 is approximately $606,000, $223,000, and $410,000, respectively, of royalty expense resulting from this license agreement. Our president and spouse are co-inventors of the inventions, the License. Under the University's current royalty sharing policy, the inventors receive a portion of the royalty payments.

We entered into a consulting agreement with the spouse of our president for his services as Chairman of Scientific Advisory Board. The consulting fee amounts to $3,000 per month. Annual expenses of approximately $36,000 incurred under this agreement have been reflected in the consolidated statement of operations for the years ended December 31, 2004, 2003 and 2002. We believe the transaction was conducted as if consummated on an arm's-length basis between two independent parties.

Benjamin Carter and Daniel Carter, the Divisional Vice President, Business Development and Manager of IT Systems and Operations, respectively, of the Company, are both sons of our Chief Executive Officer and Chairman of the Board, David W. Carter and each receives an annual salary in excess of $60,000. Neither serves as an executive officer of the Company.

In connection with the sale of a corporate residence in 2003, Pamela R. Contag, Ph.D., our President and a director, purchased from the Company certain personal property, including home furnishings, for a total cost of $80,500 which the Board believes is equal to or higher than it would have received from a third party.

13. Income Taxes

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of our deferred tax assets are as follows:

	December 31,		
	2004	2003	2002
Deferred tax assets:			
Net operating loss carryforwards	$ 36,260	$ 32,032	$ 27,450
Research credit carryforwards	7,447	8,075	6,579
Capitalized research and development	2,655	2,410	1,980
Other temporary differences	6,606	4,993	3,200
	52,968	47,510	39,209
Valuation allowance	(52,968)	(47,510)	(39,209)
Net deferred tax assets	$ —	$ —	$ —

Realization of deferred tax assets is dependent upon future earnings, if any, the timing and amount of which are uncertain. Accordingly, the net deferred tax assets have been fully offset by a valuation allowance. The valuation allowance increased by $5,458,000, $8,301,000 and $12,951,000 during 2004, 2003 and 2002, respectively.

As of December 31, 2004, we had net operating loss carryforwards for federal and state income tax purposes of approximately $102,285,000 and $25,419,000, which expire in fiscal years ended December 31, 2005 to 2008, respectively.

As of December 31, 2004, we had research and development credit carryforwards for federal purposes of $5,839,000 which expire in fiscal years ended December 31, 2005 through December 31, 2024. We had research and development credit carryforwards for California purposes of $2,331,000 which do not expire. The California Manufacturers' Investment credit carryforwards of $105,000 will expire beginning December 31, 2007 through December 31, 2008.

The annual usage of our net operating loss and research and development credits are subject to Internal Revenue Code Section 382 limitations due to the ownership changes. Ownership changes had occurred limiting both the net operation loss and other tax attributes and a valuation allowance is recorded for the portion that will not be utilized.

The following table provides a reconciliation of statutory income tax rate for the years ended December 31, 2004, 2003 and 2002:

	Years Ended December 31,		
	2004	2003	2002
Federal statutory rate provision (benefit)	(34.0)%	(34.0)%	(34.0)%
State net of federal tax benefit	(5.8)	(6.7)	(3.0)
Amortization of deferred compensation	8.3	3.0	0.6
R&D credit	0.3	(4.2)	(1.3)
Reduction of goodwill	0.0	0.0	16.5
Valuation Allowance	29.4	40.5	20.7
Others	1.8	1.4	0.5
	— %	— %	— %

14. Enterprise and Related Geographic Information

We are managed by our executive officers in Alameda, California, and have a West Coast and East Coast facility. We operate in one business segment and sell products and technologies for analyzing and managing complex image data from live animals. The West Coast operation primarily develops, manufactures and markets our proprietary IVIS Imaging Systems, and licensing of our technology. The East Coast operation primarily focuses on providing animal production services to customers using the imaging system and related technology. We generate sales revenue from both domestic and international customers.

	Years Ended December 31,		
	2004	2003	2002
		(In thousands)	
Revenue:			
Product	$16,411	$ 7,577	$ 5,148
Contract	8,925	7,369	6,541
License	5,547	5,117	4,325
Total gross revenue	30,883	20,063	16,014
Domestic revenue	22,895	16,526	13,289
International revenue	7,988	3,537	2,725
Total gross revenue	$30,883	$20,063	$16,014

15. 401(k) Retirement Plan

We adopted the 401(k) Retirement Plan (Plan) in October of 1998. Substantially all employees are eligible to participate upon the initial hire date. Under the Plan, employees may contribute up to 40% of their eligible compensation, with the Company making discretionary matching contributions, subject to certain IRS limitations. To date, we have not made any discretionary matching to the Plan.

16. Loss Per Share

Basic net loss attributable to common stockholders excluding cumulative effect of an accounting change per share and net loss attributable to common stockholders per share is computed by dividing net loss attributable to common stockholders by the weighted average number of common shares outstanding during the period. Redeemable convertible preferred stock outstanding of 3,062,604 shares at December 31, 2002; convertible preferred stock outstanding of 9,418,766 and 27,169 shares at December 31, 2003 and 2002, respectively; warrants to purchase preferred stock and common stock of 395,483, 395,483 and 251,963 at December 31, 2004, 2003 and 2002, respectively; options to purchase common stock of 1,668,849, 961,845 and 400,562, shares at December 31, 2004, 2003, and 2002, respectively; and restricted common stock of 149,648, 69,297 shares at December 31, 2004 and 2003, respectively, were not included in the computations of diluted net loss attributable to common stockholders before cumulative effect of an accounting change per share and net loss attributable to common stockholders per share for 2004, 2003 and 2002, respectively, as there inclusion would be antidilutive.

Basic and diluted net loss attributable to common stockholders excluding cumulative effect of an accounting change per share and net loss attributable to common stockholders per share were calculated as follows (in thousands, except per share data):

	Years Ended December 31,		
	2004	2003	2002
Net loss attributable to common stockholders excluding cumulative effect of an accounting change	$ (21,777)	$ (26,520)	$ (34,921)
Cumulative effect of an accounting change—Impairment of goodwill:	—	—	(30,906)
Net loss attributable to common stockholders	$ (21,777)	$ (26,520)	$ (65,827)
Weighted average number of common shares—basic and diluted	7,295,321	782,638	546,824
Basic and diluted loss excluding cumulative effect of an accounting change per share:	$ (2.99)	$ (33.89)	$ (63.86)
Basic and diluted cumulative effect of an accounting change per share:	—	—	(56.52)
Basic and diluted net loss attributable to common stockholders per share:	$ (2.99)	$ (33.89)	$ (120.38)

17. Quarterly Financial Data (Unaudited)

The following table sets forth a summary of our unaudited quarterly operating results for each of the eight quarters for the year ended December 31, 2004. This data has been derived from our unaudited consolidated interim financial statements which, in our opinion, have been prepared on substantially the same basis as the audited consolidated financial statements contained elsewhere in this prospectus and include all normal recurring adjustments necessary for a fair presentation of the financial information for the periods presented. These unaudited quarterly results should be read in conjunction with our consolidated financial statements and notes thereto included in this Form 10-K. The operating results in any quarter are not necessarily indicative of the results that may be expected for any future period.

	2004			
	March 31	June 30	September 30	December 31
Revenue				
Product	$ 3,482	$ 3,720	$ 3,462	$ 5,747
Contract	2,190	2,390	1,962	2,383
License	1,368	1,341	1,271	1,567
Total revenue	7,040	7,451	6,695	9,697
Cost of revenue:				
Product	1,978	2,689	2,419	3,734
Contract	2,343	2,220	2,039	2,159
License	198	217	201	293
Total cost of revenue	4,519	5,126	4,659	6,186
Gross margin	2,521	2,325	2,036	3,511
Operating expenses				
Research and development	3,545	3,190	2,745	3,034
Selling, general and administrative	4,446	3,425	3,807	4,976
Depreciation and amortization expenses	898	775	740	679
Total operating expenses	8,889	7,390	7,292	8,689
Loss from operations	(6,368)	(5,065)	(5,256)	(5,178)
Other income	220	34	21	318
Interest income	41	15	49	42
Interest expense	(138)	(150)	(184)	(178)
Net loss	$(6,245)	$(5,166)	$(5,370)	$(4,996)

	2003			
	March 31	June 30	September 30	December 31
Revenue				
Product	$ 1,057	$ 1,699	$ 1,588	$ 3,233
Contract	1,544	1,896	1,770	2,159
License	1,188	1,283	1,158	1,488
Total revenue	3,789	4,878	4,516	6,880
Cost of revenue:				
Product	512	1,082	867	1,924
Contract	1,915	1,748	1,753	2,213
License	142	177	207	203
Total cost of revenue	2,569	3,007	2,827	4,340
Gross margin	1,220	1,871	1,689	2,540
Operating expenses				
Research and development	2,844	2,500	2,704	3,872
Selling, general and administrative	2,645	2,157	2,460	3,628
Depreciation and amortization expenses	1,050	985	939	862
Restructuring charges	669	—	—	—
Total operating expenses	7,208	5,642	6,103	8,362
Loss from operations	(5,988)	(3,771)	(4,414)	(5,822)
Other income (expense), net	15	—	33	(5)
Interest income	30	17	35	40
Interest expense	(204)	(227)	(226)	(60)
Net loss	$(6,147)	$(3,981)	$(4,572)	$(5,847)

Schedule II

Xenogen Corporation
Valuation and Qualifying Accounts and Reserves
Years Ended December 31, 2004, 2003 and 2002
(in thousands)

Description	Balance at Beginning of Period	Charged to Expenses	Deductions	Balance at End of Period
2004				
Allowance for Doubtful Accounts	$ 21	$ 755(a)	$ (38)	$ 738
Inventory Reserve	—	56	—	56
Restructuring Reserve	1,798	—	(267)	1,531
2003				
Allowance for Doubtful Accounts	$ 70	$ —	$ (49)	$ 21
Inventory Reserve	—	—	—	—
Restructuring Reserve	2,112	669	(983)	1,798
2002				
Allowance for Doubtful Accounts	$ 80	$ 50	$ (60)	$ 70
Inventory Reserve	—	—	—	—
Restructuring Reserve	—	3,411	(1,299)	2,112

(a) Includes accrual for Value Added Tax (VAT) for foreign countries where we are not VAT registered of approximately $587.

EXHIBIT 31.1

CERTIFICATION PURSUANT TO RULE 13A-14(A) OR RULE 15D-14(A) OF THE SECURITIES EXCHANGE ACT OF 1934

I, David W. Carter, certify that:

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

Date: March 14, 2005

/s/ DAVID W. CARTER

David W. Carter
Chief Executive Officer and Chairman of the Board of Directors

EXHIBIT 31.2

CERTIFICATION PURSUANT TO RULE 13A-14(A) OR RULE 15D-14(A) OF THE SECURITIES EXCHANGE ACT OF 1934

I, William A. Albright, Jr., certify that:

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

Date: March 14, 2005

/s/ WILLIAM A. ALBRIGHT, JR.

William A. Albright, Jr.
Senior Vice President, Finance & Operations and
Chief Financial Officer

Exhibit 32

XENOGEN CORPORATION

Section 1350 CERTIFICATION

In connection with the annual report of **Xenogen Corporation, a Delaware corporation** (the "Company"), on Form 10-K for the period ended December 31, 2004, as filed with the Securities and Exchange Commission (the "Report"), we, the undersigned officers of the Company, hereby certify as of the date hereof, solely for purposes of Title 18, Chapter 63, Section 1350 of the United States Code, that to the best of our knowledge:

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

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company at the dates and for the periods indicated.

This Certification has not been, and shall not be deemed, "filed" with the Securities and Exchange Commission.

Date: March 14, 2005

By: /s/ DAVID W. CARTER

David W. Carter
Chief Executive Officer and Chairman of the Board

/s/ WILLIAM A. ALBRIGHT, JR.

William A. Albright, Jr.
Senior Vice President, Finance & Operations
and Chief Financial Officer

Corporate Headquarters

Xenogen Corporation
860 Atlantic Avenue
Alameda, CA 94501
Phone: (510) 291-6100
www.xenogen.com

Common Stock Listing

Xenogen's common stock is listed on Nasdaq under the symbol XGEN.

Annual Meeting

We will hold our Annual Meeting of Stockholders on June 7, 2005, at our facility located at 2061 Challenger Drive, Alameda, California 94501. The meeting will begin at 8:00 a.m. Pacific Time.

Form 10-K

A copy of our 2004 Annual Report on Form 10-K as filed with the Securities and Exchange Commission on March 21, 2005 can be obtained free of charge by contacting our Investor Relations Department at (510) 291-6100 or via our web site at www.xenogen.com.

Legal Counsel

Wilson Sonsini Goodrich & Rosati
One Market Plaza
Spear Street Tower
Suite 3300
San Francisco, CA 94105
Phone: (415) 947-2000

Independent Auditors

Deloitte & Touche LLP
50 Fremont Street, Suite 3100
San Francisco, CA 94105-2230
Phone: (415) 783-4000

Registrar and Transfer Agent

Computershare Trust Company, Inc.
350 Indiana Street, Suite 800
Golden, CO 80401
Phone: (303) 262-0600

Forward-Looking Statements

This Annual Report, including the Letter to Stockholders, contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These forward-looking statements include statements relating to: placements and market acceptance of our products; developments and anticipated performance of our products and services; investments in our infrastructure; and launch of our IVIS 3-D Imaging System. You can identify these statements by the fact that they do not relate strictly to historical or current facts and use words such as "anticipate," "expect," "intend," "plan," "believe," "seek," "estimate," and other words and terms of similar meaning. These statements are not guarantees of future performance and are subject to certain risks, uncertainties and assumptions that are difficult to predict. Actual results could differ materially from those expressed or forecasted in any such forward-looking statements as a result of certain factors, including but not limited to: our expectations regarding growth in acceptance of our products, services or technology; the capital spending policies of pharmaceutical, biotechnology and chemical companies and biomedical research institutions that are our primary customers; difficulties or delays in development, testing, manufacturing, and marketing of our products or products under development; our reliance on a limited number of and certain single-source suppliers; our ability to deliver our products on a timely basis; our ability to enforce our intellectual property rights or operate without infringing the patent rights of others; competition from other companies or alternative technologies; and our ability to obtain additional financing as necessary to support our operations. For a discussion of these and other factors that could impact our financial results and cause our results to differ materially from those in the forward-looking statements, please refer to our filings with the Securities and Exchange Commission, particularly our Annual Report on Form 10-K for the year ended December 31, 2004 filed on March 21, 2005. Although we believe that expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements. All forward-looking statements included in this Annual Report are based on information available to us as of the date of this report. We expressly disclaim any obligation or undertaking to release publicly any updates or revisions to any forward-looking statements contained herein to reflect any change in our expectations with regard thereto or any change in events, conditions or circumstances on which any such statement is based. You are advised, however, to consult any further disclosures that we make on related subjects in our Forms 10-Q and 8-K filed with the Securities and Exchange Commission.

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