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LARGE SCALE BIOLOGY™

Large Scale Biology Corporation
2003 Annual Report

To our Shareholders:

We entered 2003 with an uncertain economy, a continuing biotech downturn, and our company distracted from its prime opportunities. We exited the year in a somewhat healthier economy, a recovering biotech industry, and a clearly refocused company.

Evidence of our strong refocus is backed by our exiting the fee-for-service proteomics business to concentrate on our base technology and product opportunities in vaccines and therapeutics. Second proof of principle in our product focus is the creation of a wholly-owned subsidiary, Eclipse Diagnostics, Inc., whose primary mission is to use proprietary technology to develop esoteric tests to be used in the early detection of various cancers such as ovarian, lung, and prostate. We believe great need will be filled with our tests. In 2003, we have built the platform for completing validation by mid-2004.

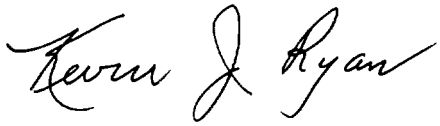
On the therapeutic and vaccine product side of our business, we received orphan drug designation for our plant-derived human alpha-Galactosidase A enzyme therapeutic treatment for Fabry disease. We will file an IND later this year.

We acquired exclusive rights from the Cincinnati Children's Hospital Medical Center for the development of human lysosomal acid lipase (hLAL) to treat both atherosclerosis and cholesterol storage disorders. Lead scientist Dr. Gregory Grabowski of Cincinnati Children's Hospital co-authored a paper published in the American Heart Association journal, "Arteriosclerosis, Thrombosis and Vascular Biology," that reported LAL decreases plaque formation in mice fed abnormally high fat diets both quantitatively and qualitatively.

In April 2003, a reorganization took place that included a restructuring of management as well as a reduction of personnel. Cost efficiency programs that continue were instituted to reduce expenses and focus the business as a product-oriented operation. This product focus from May to December 2003 has resulted in the development of three follow-on off-patent biologics, including interferon alpha 2a and 2b, and granulocyte colony stimulating factor (G-CSF). These biologics have near-term partnering potential. Two other molecules from the program may offer promise as well. We also made significant progress with our vaccine initiatives, primarily with human papilloma virus (HPV) and with our animal health vaccines. While we continue to seek grants for advancing our science in our basic business, these opportunities are executed primarily for the rights of participation in any product discovery.

We completed scale process development of our plant-produced recombinant aprotinin product during 2003. And in January of this year, we began shipping sample quantities of product for prospective customers for research and manufacturing applications. We anticipate commercial product sales beginning in the third quarter. Partnering r-Aprotinin for medical applications is also a near-term priority.

We are all conscious of our obligation of shareholder return through delivery of product and services that provide an improvement in public health. As fellow shareholders, we welcome the challenge to deliver such improvements. The rebuilding of shareholder value has begun.



Kevin J. Ryan
President & Chief Executive Officer

Ronald J. Artale
Chief Operating Officer

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

FORM 10-K

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

For the year ended December 31, 2003

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

TRANSITION PERIOD FROM _____ TO _____ .

Commission File Number 0-31275

LARGE SCALE BIOLOGY CORPORATION

(Exact name of registrant as specified in its charter)

Delaware	**77-0154648**
(State or other jurisdiction of Incorporation or organization)	**(I.R.S. employer identification number)**

3333 Vaca Valley Parkway, Vacaville, CA 95688
(Address of principal executive offices and zip code)

(707) 446-5501
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act: None
Securities registered pursuant to Section 12(g) of the Act:
Common Stock, $0.001 par value
Preferred Stock Purchase Rights

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 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 Securities Exchange Act of 1934). Yes ☐ No ☒

The aggregate market value of voting stock held by non-affiliates of the Registrant as of June 30, 2003 was approximately $25.8 million (based on the last reported sales price of $1.00 on June 30, 2003 on the NASDAQ National Market).

The number of shares outstanding of the Registrant's common stock as of March 26, 2004 was 31,149,724.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant's definitive proxy statement, which is expected to be filed not later than 120 days after the Registrant's year ended December 31, 2003, to be delivered in connection with the Registrant's 2004 Annual Meeting of Stockholders, are incorporated by reference into Part III of this Form 10-K.

Large Scale Biology Corporation
Form 10-K
For the Year Ended December 31, 2003
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Some of the statements contained in this report constitute forward-looking statements that involve substantial risks and uncertainties. In some cases, you can identify these statements by forward-looking words such as "may," "will," "expect," "plan," "anticipate," "believe," "forecast," "project," or "continue" and variations of these words or comparable words. In addition, any statements, which refer to expectations, projections or other characterizations of future events or circumstances are forward-looking statements. Our Business section and Management's Discussion and Analysis of Financial Condition and Results of Operations contain many such forward-looking statements. These forward-looking statements involve known and unknown risks, uncertainties and situations that may cause our or our industry's actual results, level of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed or implied by these statements. The risk factors contained in this report, under the heading Factors That May Affect Our Business, as well as any other cautionary language in this report, provide examples of risks, uncertainties and events that may cause our actual results to differ from the expectations described or implied in our forward-looking statements.

Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements. You should not place undue reliance on these forward-looking statements, which apply only as of the date of this report. Except as required by law, we do not undertake to update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.

Large Scale Biology Corporation, LSBC, our logo, GENEWARE®, BAMF™, GRAMMR™ and other product and trade names are trademarks of or registered trademarks of Large Scale Biology Corporation in the United States and/or other countries. Other product and trade names mentioned herein may be trademarks and/or registered trademarks of their respective companies. References in this report to "the Company," "our," "we" and "us" refer collectively to Large Scale Biology Corporation, a Delaware corporation, and its predecessors and subsidiaries.

PART I

Item 1. Business

Overview

Our goal is to develop therapeutic products using our proprietary biomanufacturing technologies and expertise. While none of our products have generated significant revenue, the product categories in which we have made the most progress using our technologies are vaccines, complex proteins and follow-on off-patent therapeutics. We are also applying our technology to develop and commercialize diagnostic tests and a gene improvement tool. We are focusing our efforts on the following products:

- Aprotinin, a protease inhibitor used in medical, research and manufacturing applications and other follow-on off-patent biologics, including interferon alpha 2a and 2b, and granulocyte colony stimulating factor
- Alpha-galactosidase A for the treatment of Fabry disease, a lysosomal storage disorder
- Vaccines for human and animal healthcare, including antiviral and anticancer applications
- Lysosomal acid lipase for the reduction of plaque in arteries

- Diagnostic tests based upon proprietary technology for detection of cancer and other diseases
- GRAMMR to shuffle and improve gene sequences

Our proprietary technologies include methodologies for the analysis of both genes and proteins in an automated high-throughput fashion. We also own unique systems to manufacture proteins at pharmaceutical purity standards for both research and commercial purposes. These systems use proprietary viral-based gene delivery vehicles in green plants to produce vaccines and therapeutic proteins without genetically modifying the host plant. We believe that these manufacturing technologies will provide significant competitive advantages in speed and ease of production, safety, production capacity and cost of goods. Our freedom to operate with our gene expression and biomanufacturing technologies can enable our alliance partners and clients to enter generic biologics markets that are otherwise inaccessible due to process patents issued to competitors.

We were incorporated in California in 1987 and reincorporated in Delaware in 2000. From our inception until the end of 2000, our main focus was to develop our GENEWARE®, genomics, proteomics and bioinformatics platforms, and to provide research and development services to customers. In 2001, our focus shifted to developing products and bringing our manufacturing operations up to regulatory standards for current good manufacturing practices, or cGMP.

The Company is headquartered in Vacaville, California and its mailing address is 3333 Vaca Valley Parkway, Vacaville, California, 95688, and our telephone number is (707) 446-5501. Our corporate web site address is www.lsbc.com. We have made all reports and amendments to reports from November 15, 2002 to December 31, 2003 available on our website. We make available free of charge through our web site our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to these reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after filing such material electronically or otherwise furnishing it to the Securities and Exchange Commission.

Developments in 2003

Manufactured Aprotinin Product—Initiated field production and biomanufacturing of recombinant Aprotinin at our Owensboro, Kentucky facility.

Granted Orphan Drug Designation on Fabry Disease Therapeutic—The Food and Drug Administration, or FDA, granted us Orphan Drug designation for our proprietary plant-produced human enzyme, alpha-galactosidase A, for its eventual use in enzyme replacement therapy to treat Fabry disease. Our alpha-galactosidase A showed promising therapeutic effects in preclinical studies. Using our Owensboro, Kentucky facility and cGMP, we have manufactured alpha-galactosidase A, suitable for clinical trials.

Entered into New Revenue-Generating Initiatives—

- Schering-Plough Animal Health Corporation (SPAH) to evaluate several vaccines for control of viral infections in animals
- Growers Research Group to research and develop a product to control plant pests
- The National Institute of Allergy and Infectious Diseases (NIAID) to investigate the potential of our proprietary plant viral vector technology for producing preventative and therapeutic HIV-1 peptide vaccines

Refocused Efforts to Our Products—Strategically shifted our focus from developing platform technologies and performing contract proteomics research to developing and commercializing vaccines and protein-based pharmaceutical products. We heightened our corporate focus on commercial pipeline products.

Acquired License—Entered into an exclusive license agreement with the Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio for the development of human lysosomal acid lipase for atherosclerotic plaque reduction to treat atherosclerosis, a leading cause of death in the U.S.

Formed Eclipse Diagnostics focused on our BAMF technology—Created a wholly-owned subsidiary, Eclipse Diagnostics, Inc., to apply our proprietary BAMF technology for diagnostic tests for cancer and other diseases.

Further Established Our Intellectual Property—We obtained 34 new patents worldwide, impacting each key component of our technology base, bringing our total patents to 106. These new patents cover anti-cancer molecules, plant and animal viral vectors, and biomanufacturing. We also filed 51 new patent applications covering various aspects of our technology base, which increases the total number of pending patents to 187.

Implemented Major Cost Reductions—Implemented a cost reduction program which, when combined with our 2002 cost reduction efforts, resulted in $9.2 million in savings of expenses from 2002 to 2003 and $14.8 million, or 37%, in savings over two years when comparing total costs of general and administrative, and research activities incurred during 2001 to 2003. We wound-down our 2-dimensional gel proteomics operations at our Germantown, Maryland operation upon concluding the toxicoproteomics fee-for-service contract with the National Institute of Environmental Health Services, or NIEHS.

Recent Development

In January 2004, we shipped sample quantities of our plant-produced recombinant aprotinin product to prospective customers for research and manufacturing applications. We entered into a multi-year, non-exclusive agreement with Sigma-Aldrich Fine Chemicals, a division of Sigma-Aldrich Corporation to distribute research-grade aprotinin and anticipate product sales by the third quarter of 2004.

Science and Industry Background

All living things are made up of one or more cells. Although science still has much to learn about how cells actually function, it is commonly accepted that all cells have several basic components. Inside each plant and animal cell is a nucleus containing deoxyribonucleic acid, or DNA, that makes up its genetic code. Different sections of the DNA are called genes. A gene or a combination of genes encodes the information needed for conducting the various essential life functions. Each gene is composed of a specific, unique sequence of DNA. When a gene is turned on, or "expressed," the genetically coded information is copied into a related molecule called messenger ribonucleic acid, or mRNA. This messenger travels to a location outside the nucleus where proteins are then made according to the genetic information contained in the mRNA.

Private industry and the federal government have each announced the completion of the sequencing of the human genome. Utilizing the genetic information of the human genome, numerous laboratories are rapidly identifying gene sequences that are involved in the causes of diseases. An increasing number of new biological drugs are being tested and are being used to treat diseases. The production of these biological drugs requires complicated, and usually, very expensive cellular production systems.

Our plant-based GENEWARE system offers several advantages for the production of these biological compounds. A gene sequence, or mRNA, of a target protein is inserted into a plant virus, or vector. Non-recombinant (non GMO) non-food/feed plants are then inoculated with the vector. The virus penetrates cells of the plant and uses the cell's mechanism to replicate and to express the mRNA carried by the virus to produce the target protein. The virus spreads from cell to cell within the plant but does not get incorporated within the DNA of the plant cells. Consequently, the mRNA is not passed on to the next generation of the plant. This system provides a large-scale manufacturing capability to produce commercially valuable proteins rapidly and cost effectively, without the environmental concerns that afflict the cultivation of transgenic food/feed crops used by other companies.

Our Strategy

Our corporate strategy is to focus our platform technologies on developing and commercializing our products and those of our partners. While our GENEWARE platform is broadly applicable, our current emphasis is to primarily use it for biomanufacturing health care products. Our strategic business focus consists of developing the following business opportunities:

- Development, manufacture and sale of therapeutics and vaccines
- Development and commercialization of diagnostic tests for diseases such as cancer
- Market gene shuffling technology

We have successfully achieved proof of principle with our own human and animal-health-care therapeutics. While biomanufacturing and some early stages of regulatory and clinical development have been internally financed, we plan to achieve advanced clinical trials, final regulatory approvals and commercialization in collaboration with pharmaceutical and biotechnology companies. Our cat parvovirus vaccine has successfully completed early-stage pre-clinical trials, demonstrating safety and initial efficacy and is moving forward into advanced development. We have completed manufacturing process development of aprotinin and alpha-galactosidase A. We have received Orphan Drug designation from the FDA for alpha-galactosidase A and are currently preparing the regulatory documents to initiate clinical trials. We are improving our manufacturing process for human lysosomal acid lipase and are conducting research on its potential use as a therapeutic to reduce atherosclerotic plaque. We have been developing biomanufacturing capability for proteins and peptides to capitalize on the capacity constraints of the biotechnology industry. We have built a manufacturing facility in Owensboro, Kentucky, that is ready for FDA-compliant manufacturing of human therapeutics and vaccines developed by our partners and us.

We have created a wholly-owned subsidiary, Eclipse Diagnostics, Inc., to apply our proprietary BAMF technology for diagnostic tests of cancer and other diseases. Eclipse Diagnostics expects to perform diagnostic tests for specific diseases for major clinical reference labs, hospitals, and boutique labs. The reference lab partners would analyze serum samples, or perform mass spectrometry analysis where needed, prior to Eclipse's BAMF diagnostic analysis. We expect that a test for ovarian cancer would be our introductory product, followed by tests that may include lung, breast, prostate, and pancreatic cancers. Upon successful completion of our first phase of our business plan, we expect to implement a fully vertical BAMF test with all laboratory steps performed directly or through outsourcing by Eclipse.

We have developed a novel gene shuffling technology called GRAMMR, which can generate large libraries of extensively shuffled gene sequences, and which we believe is faster and more

efficient than competing gene shuffling technologies. We are in contract discussions to collaborate with the US Army Medical Research Institute of Infectious Diseases, or USAMRIID, to apply our proprietary GRAMMR technology for DNA shuffling and molecular evolution to improve biodefense therapy candidate products. In parallel with our program with the federal government, we plan to market GRAMMR gene shuffling technology to companies seeking to improve their biological drugs.

Commercial Opportunities

Aprotinin—Aprotinin is a natural protein that acts to prevent protein breakdown, and is used in medical procedures to reduce the systemic inflammatory response, or SIR, associated with cardiopulmonary bypass surgery, or CPB. Once triggered, SIR can lead to a cascade of subsequent inflammatory events that can collectively retard patient recovery. When administered intravenously in CPB procedures, aprotinin helps decrease the need for blood transfusions, reduces post-operative bleeding, and thus reduces re-exploration for bleeding.

The only aprotinin product in the United States market for use in CPB is currently obtained by extraction from cow lungs. We have successfully produced pilot-scale quantities of aprotinin that is identical to this product using our proprietary GENEWARE plant-based biomanufacturing system. Our aprotinin active pharmaceutical ingredient, or API, has the same biological activity as the animal-derived counterpart. When scaled to commercial-level production, we believe that our aprotinin can be produced cost effectively and in sufficient quantities to meet worldwide demand, without the safety concerns associated with animal derived products. We are in discussions with potential partners for supplying our aprotinin to the medical markets.

We have shipped sample quantities of our aprotinin product to prospective customers for research and manufacturing applications. We entered into a multi-year, non-exclusive agreement with Sigma-Aldrich Fine Chemicals to distribute non-pharmaceutical aprotinin and anticipate product sales by the third quarter of 2004.

Alpha-Galactosidase A—Alpha-galactosidase A is an enzyme used for replacement therapy to treat Fabry disease. Fabry disease is a genetic disorder that results in the inability of tissues within organs, primarily the liver, kidney and spleen, to recycle various structural lipid components resulting in the accumulation of these lipids in those organs and the heart. Fabry is a gender-based genetic degenerative disease that shortens a patient's lifespan.

Our Alpha-galactosidase A is produced in plants at our biomanufacturing facility in Owensboro, Kentucky with our proprietary GENEWARE system. The enzyme is recovered and purified to clinical standards in a proprietary process that is validated and compliant with current good manufacturing practices, or cGMP. The preclinical testing was performed in a Fabry mouse model system with Dr. Roscoe Brady at the National Institute of Neurological Disease and Stroke under a collaborative research and development agreement. The preclinical data showed good efficacy and safety in the animals. We received an Orphan Drug designation from the FDA for Alpha-galactosidase A and plan to file an IND with the FDA and begin clinical trials to evaluate its safety and efficacy in humans.

Follow-on off-patent biologics—When patent protection for proprietary pharmaceuticals ends, the product becomes eligible for sale as a "generic" version. Often new competition arises, resulting in lower costs and wider availability for the generic product relative to the original patented drug. A number of biological protein and peptide biopharmaceutical products are, or soon will be, off patent. However, while the composition of a pharmaceutical product may be off-patent, the manufacturing method may be further protected by exclusive patents of the

innovator company. Consequently, suppliers are blocked from producing the generic product. Our freedom to operate with our proprietary GENEWARE biomanufacturing technology could provide our alliance partners the ability to enter markets otherwise blocked by process patents.

Our GENEWARE technology can produce molecules that are, or will be, off-patent including recombinant versions of Aprotinin, Interferon alpha 2a and 2b, and Granulocyte Colony Stimulating Factor, or G-CSF. We are in partnering discussions with several companies for the co-development, marketing and distribution of these types of off-patent molecules for research, manufacturing and medical applications.

Vaccines—Vaccines can represent a cost-efficient form of healthcare. Vaccines recruit the immune system to recognize and combat a wide range of diseases, including viral and microbial infectious diseases and some cancers. LSBC is developing several vaccines for the human and animal care markets. We have conducted early clinical research with our personalized vaccine against the lymphatic cancer non-Hodgkin's lymphoma with successful initial results. With financial support from several US Government agencies, we are in early stage development of vaccines to treat human pappilloma virus and HIV infections. We are also developing vaccines for animal health and veterinary care to treat a variety of infectious diseases affecting animals. Our GENEWARE biomanufacturing system helps enable the efficient improvement and production of vaccines that are either difficult to produce by using conventional technologies or where high costs of production preclude market expansion.

Human lysosomal acid lipase—Cardiovascular disease, especially atherosclerosis, is a major cause of morbidity and mortality in the US and many other industrialized countries. While several drugs are currently marketed to slow down progression of atherosclerotic disease or treat its symptoms, excessive build-up of plaque, which is a leading cause of heart disease, is often treated surgically and involves invasive procedures and long periods of convalescence. LSBC has recently begun research on a human enzyme, lysosomal acid lipase (LAL), which we believe could some day be used by clinicians to erode and dissolve plaque build-up in affected blood vessels. Discovered by University of Cincinnati scientists, LAL could represent a new approach in the treatment of cardiovascular disease. LSBC has obtained an exclusive, worldwide license for use of LAL in this field and is developing and evaluating the enzyme in collaboration with the discovery team at University of Cincinnati.

BAMF Diagnostics—We plan to commercialize through a wholly owned subsidiary, Eclipse Diagnostics, Inc., a new diagnostic product called BAMF technology that enables detection of cancer and other diseases through a blood serum-based tests. BAMF is a proprietary pattern recognition discovery algorithm that identifies protein biomarkers in the blood, which form the basis of a test to detect cancer. We believe that development of commercial diagnostic tests based on our BAMF technology could improve patient outcome through earlier diagnosis of disease. We expect our first commercial product using our BAMF technology to be for the diagnosis of ovarian cancer.

GRAMMR Gene Shuffling—GRAMMR is a new shuffling, or genetic reassortment research tool used to more efficiently develop a wide variety of improved product attributes. Traditional shuffling methods are typically complex, slow, labor-intensive, and have not always yielded the desired results. GRAMMR provides a number of significant advantages over traditional gene shuffling procedures, including higher efficiency, more rapid turnaround, greater adaptability and higher cost-efficiency. Our GRAMMR technology can reduce the complications of gene shuffling and empowers the user with greater control over the molecular evolution process. We can offer our partners and clients a complete range of GRAMMR-associated services, from gene shuffling and gene expression to protein manufacturing.

Our Technologies

GENEWARE—Our proprietary and patented GENEWARE system makes use of natural genetic systems for encoding genetic information in plants to rapidly produce biologically-active proteins. A gene sequence of a target protein is cloned into a modified plant virus, or vector that is not harmful to humans. Growing plants are inoculated with the vector to temporarily introduce the genetic information into the plants. The target proteins encoded by the gene sequences are produced in the host plant and after approximately two weeks the plants are harvested. Utilizing proprietary and patented processes we extract and purify the target protein from the plants. These GENEWARE vectors have been used to produce numerous therapeutic proteins and vaccine antigens in large quantities.

The GENEWARE production system is environmentally safe because the viral vector and the genes we insert cannot be incorporated into the plant genome and, thus, cannot be transmitted to the next generation of the plant in the seed or pollen; it has a limited host range; and the modified virus does not persist in the soil to the next planting season. Since 1991, we have conducted more than ten USDA-approved field trials, each demonstrating that GENEWARE is environmentally safe. In addition, we apply our GENEWARE system only to non-food crops and follow standard operating procedures during field and greenhouse production and testing to further ensure environmental safety.

While our GENEWARE technology can be used to identify and alter gene-product functions, we are primarily using the GENEWARE system to manufacture therapeutic proteins, peptides and other molecules in plants. GENEWARE can achieve significant time and cost advantages over traditional, transgenic genetic-engineering systems and alternative manufacturing technologies. GENEWARE can be a very efficient and competitive protein production system due to its potential for high expression, speed of production, safety and minimal capital requirements compared to alternate expression systems. We have used our Owensboro, Kentucky production facility to extract proteins from hundreds of tons of field-produced plants, and have validated this facility for cGMP manufacturing of aprotinin and alpha-galactosidase A.

BAMF Diagnostics—Our proprietary BAMF technology combines our bioinformatics and proteomics technologies. Our proteomics technology allows for the rapid determination of the protein composition, or proteome, of cells, tissues and body fluids that are associated with disease or abnormal conditions. Protein composition is a listing of the specific proteins present in a given sample, and their amounts. By assembling and monitoring changes in this data, we are able to, among other things, to identify the presence of proteins that are caused by diseases.

Bioinformatics is the gathering and analysis of the data generated when working with genes and proteins. We use proprietary technologies to integrate and manage biological information, which among other things, increases our ability to assess the importance of biological data in the discovery of disease.

Our proprietary BAMF technology was derived from our bioinformatics capability. It utilizes multiple proteins called biomarkers that are derived from profiling thousands of proteins to diagnose disease. In an ongoing research collaboration with Lance Liotta, M.D., Ph.D. and Emanuel Petricoin, Ph.D., co-directors of the Clinical Proteomics Program at the National Cancer Institute and Food and Drug Administration (NCI/FDA), we are using our BAMF technology to identify protein biomarkers in the blood as a diagnostic to detect ovarian cancer and other diseases.

GRAMMR Gene Shuffling—We invented gene shuffling and molecular evolution technology that is easier to use, more efficient, and more cost-effective than other gene shuffling methods. Directed molecular evolution is an approach to enhancing the functionality of candidate genes and accelerating the development of improved products. We believe that gene shuffling, or reassortment, is the key to unlocking the potential of genetic diversity and developing biological molecules with novel or improved traits. Various gene-shuffling methods have been applied to improve a variety of commercially important products such as pharmaceutical proteins, vaccines, antibodies, viral vectors, and industrial enzymes. GRAMMR enables researchers to improve genes and the protein products derived from those genes which we believe have a number of inherent advantages over other gene shuffling methods, including: yield of a greater variety of chimeric products from fewer rounds of shuffling; rapid generation of thousands of shuffled gene sequences in a single day; adaptability to large genes, divergent genes, and complete gene clones; reliable conservation of the integrity of genes, resulting in improved screening efficiencies; and cost effectiveness.

Intellectual Property

We continually seek patent protection for our proteomics, genomics, biomanufacturing, and plant and animal viral gene expression technologies. As of December 31, 2003, we had 66 issued and 90 pending U.S. patents. Our issued U.S. patents expire between 2008 and 2020. Foreign patents corresponding to many of the U.S. patents and patent applications have been filed and/or issued in one or more other countries, resulting in a total of 40 issued and 97 pending foreign patents as of December 31, 2003. In the plant and animal viral systems field, we have 19 issued U.S. patents and 34 issued foreign patents with durations ranging from 2011 to 2020. In the proteomics field we have 37 issued U.S. patents and 1 issued foreign patent with durations ranging from 2006 to 2020. In the genomics field, we have 3 issued U.S. patents and 2 issued foreign patents with durations to 2019. In the bioprocessing field, we have 7 issued U.S. patents and 3 issued foreign patents with durations through 2019. Despite the issuance of 34 new patents in 2003, total active patents declined from 107 to 106, primarily due to abandonment of proteomics patents not core to our technological pursuits. While we believe that our patents in various technological areas are valuable to our business, our business as a whole is not materially dependent on any one patent.

We and other companies in the biotechnology field typically apply for and receive, in the aggregate, thousands of patents annually in the U.S. and other countries. These patents give us the right to exclude others from practicing or selling products, technologies or services covered by the methods claimed, and from making, using or selling the products which are the subject of the claims of these patents.

A registered trademark gives the owner the right to exclude others from using identical or confusingly similar marks within the same channels of commerce. We own or own rights to many registered trademarks and unregistered marks in the United States and in many other countries.

We also rely upon copyright protection, trade secrets, continuing technological innovation and licensing from others to protect our intellectual property. Our success will depend, in part, on our ability to obtain patent protection for our products and processes, to preserve our copyrights and trade secrets, to operate without infringing the proprietary rights of third parties and to acquire licenses, if needed, to support or enhance our intellectual property portfolio.

Collaborations

Our revenues have been derived principally from collaborations with others. The business structure varies depending on the specific product or research objectives of the collaborations.

Research agreements may include payments for technology access, costs of research, certain rights to intellectual property developed and participation in sales of products resulting from the agreements. We may also seek to share in the long-term value of the products that we assist our collaborators in developing through the retention of certain product rights. Current agreements include those with Schering-Plough for animal healthcare vaccine products and Sigma-Aldrich Fine Chemicals for the non-exclusive distribution of research-grade aprotinin, and Growers Research Group LLC for development of a biological pest control product. Other collaborations may take the form of alliances to jointly commercialize product applications evolved from combining specific technologies of each company.

We actively seek revenue from government funding sources that promote the development of products having strategic importance to us. For instance, we have performed research activities under a multi-year grant from the National Institute of Standards and Technology to develop new vaccine production technology.

We acquire licenses for exclusive or non-exclusive rights for specific processes, technology or molecules. Such licenses are often accompanied by joint research collaborations to develop products for commercialization. For example, recently we acquired an exclusive license for use of human lysosomal acid lipase, or LAL, with the Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio and entered into a research collaboration with them to develop LAL for treating atherosclerosis, a leading cause of death in the United States and other developed countries.

Employees

As of March 26, 2004, we have 76 full-time employees, of which 53 are engaged in research and development or biomanufacturing activities. The remainder work in general and administrative areas. Seventeen employees hold Ph.D. degrees.

Research and Development

Our internally funded research and development expenses were $11.5 million, $21.2 million, and $22.4 million in 2003, 2002, and 2001, respectively. Our customer-sponsored research and development expenditures were $4.7 million, $1.2 million, and $3.5 million in 2003, 2002, and 2001, respectively.

Competition

The markets for protein development and production, including human vaccines and therapeutics such as the ones we are developing, are highly competitive. Competitors with substantially greater resources are actively developing products similar to, or competitive with, our products. Several pharmaceutical, biotechnology, chemical and other life sciences companies engage in research and development in the use of novel gene expression systems to produce therapeutic proteins. Two other companies are marketing products overseas that would, or might, be competitive with our Alpha-galactosidase A product.

Our recombinant Aprotinin product and follow-on off-patent therapeutics such as interferons and GCSF are, or will be, off patent protection by the time they are ready for marketing. While we expect to enter pre-existing markets with the same or similar products, our efficient GENEWARE manufacturing and the anticipated favorable cost of production through use of our GENEWARE system, should give us a competitive edge. One of our potential products, lysosomal acid lipase, has no functional equivalent and thus, no direct competing product.

Technologies competitive with our BAMF technology are under development and being marketed by other companies and academic institutions. The field of bioinformatic analysis of blood serum to diagnose diseases such as cancer is in an early stage. We are not aware of commercially available competitive technology that has been demonstrated to be superior to ours.

Item 2. Properties

Our principal research and development facility and corporate headquarters are located in Vacaville, California, at a facility of approximately 45,000 square feet that includes administrative offices, a genetic engineering laboratory, a plant discovery and function laboratory and a bioinformatics software laboratory, under a lease that expires on February 28, 2009. We own a facility of approximately 22,000 square feet and land of approximately 23 acres in Owensboro, Kentucky for pilot and large-scale protein extraction and downstream biomanufacturing of products. We have a facility in Germantown, Maryland of approximately 53,000 square feet under a lease that expires on December 31, 2010. This facility was previously occupied by our proteomics operations, which was wound down on December 31, 2003. We are currently seeking to sublease this property.

Item 3. Legal Proceedings

From time to time we become a party to legal proceedings that are incident to our normal business operations such as employment litigation. In the opinion of management, these lawsuits will not result in any material adverse effects on the Company's financial condition.

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

None.

Part II

Item 5. Market for Registrant's Common Equity and Related Stockholder Matters

Market Information. The Company's common stock is traded on the NASDAQ National Market under the symbol "LSBC." Public trading of our common stock commenced on August 10, 2000. The following table sets forth the high and low sale price per share of the Company's common stock during each quarter of 2003 and 2002.

	High	Low
Year Ended December 31, 2003:		
Fourth Quarter	$2.90	$1.15
Third Quarter	1.51	0.71
Second Quarter	1.60	0.39
First Quarter	0.83	0.34
Year Ended December 31, 2002:		
Fourth Quarter	$1.80	$0.77
Third Quarter	2.26	1.15
Second Quarter	3.59	1.04
First Quarter	5.00	2.80

Holders. Based upon data provided by our transfer agent, the Company had approximately 5,522 beneficial holders of our common stock as of March 15, 2004. This total includes persons whose stock is in nominee or "street name" accounts through brokers.

Dividends. The Company has never declared or paid any cash dividends on its common stock and we do not anticipate declaring any dividends in the foreseeable future. We currently intend to reinvest future earnings, if any, for use in research and development or other business needs.

Use of Proceeds. During the third quarter of 2000, the Company received net proceeds of approximately $89 million from an initial public offering, or IPO, of common stock. Provided below is a reasonable estimate of the amount of IPO net proceeds used in each of the following categories, through December 31, 2003:

Construction of plant, building and facilities	$ 2,329,000
Purchase of machinery and equipment	7,784,000
Construction of leasehold improvements	5,993,000
Repayment of indebtedness	3,713,000
Purchase of intellectual property licenses	3,264,000
Capitalized patent costs	1,756,000
Working capital	61,707,000
Cash and investments	2,210,000

The use of proceeds for working capital includes expenditures for research and development and general and administrative activities. Cash and investments are temporary investments consisting of money market funds and bank certificates of deposit.

None of the IPO net proceeds were paid directly or indirectly to directors, officers, or their associates, persons owning 10 percent (10%) or more of any class of our equity securities, or our affiliates. The use of IPO net proceeds set forth above does not represent a material change from the anticipated use of proceeds described in the prospectus contained in our Registration Statement on Form S-1 (SEC Registration No. 333-34198), declared effective on August 9, 2000.

Item 6. Selected Financial Data

You should read the following selected financial data in conjunction with Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our audited consolidated financial statements and related notes included in Part IV of this Report. We derived the consolidated statement of operations data for the years ended December 31, 2003, 2002, and 2001 and the consolidated balance sheet data as of December 31, 2003 and 2002 from our audited consolidated financial statements included in this Report. We derived the consolidated statement of operations data for the year ended December 31, 2000 and 1999 and the consolidated balance sheet data as of December 31, 2001, 2000 and 1999 from our audited consolidated financial statements not included in this Report.

	Year ended December 31,				
	2003	2002	2001	2000	1999
	In thousands, except share and per share data				
Consolidated Statement of Operations Data					
Revenues	$ 3,570	$ 2,622	$ 17,731	$ 23,291	$ 16,090
Costs and expenses:					
Development agreements	4,720	1,247	3,467	8,115	7,439
Research and development	11,511	21,191	22,391	16,373	9,491
General and administrative	9,159	12,162	14,373	8,119	7,977
Impairment of property	3,598	433	—	—	—
Impairment of goodwill	—	839	—	—	—
Stock compensation bonus	—	—	—	7,268	—
Purchased in-process research and development	—	—	—	—	21,362
Amortization of goodwill and purchased intangibles	52	624	1,300	1,197	623
Total costs and expenses	29,040	36,496	41,531	41,072	46,892
Gain on litigation settlements	—	—	—	—	1,300
Loss from operations	(25,470)	(33,874)	(23,800)	(17,781)	(29,502)
Total other income (expense)	177	690	3,111	1,481	(5,203)
Loss before provision for income taxes	(25,293)	(33,184)	(20,689)	(16,300)	(34,705)
Provision for income taxes	—	—	—	—	190
Net loss	$ (25,293)	$ (33,184)	$ (20,689)	$ (16,300)	$ (34,895)
Net loss per share—basic and diluted	$ (.99)	$ (1.33)	$ (0.84)	$ (1.07)	$ (3.76)
Weighted average shares outstanding—basic and diluted	25,619,363	24,991,201	24,599,126	15,251,575	9,275,228

	December 31,				
	2003	2002	2001	2000	1999
			In thousands		
Consolidated Balance Sheet Data					
Cash and cash equivalents	$ 7,737	$ 8,238	$ 24,055	$ 40,030	$ 6,975
Marketable securities	—	14,840	24,724	44,971	7,124
Working capital (deficit)	6,964	22,786	46,690	70,853	(1,514)
Total assets	20,980	44,741	76,912	106,943	31,762
Long-term debt and warrant liability	209	261	310	423	13,837
Accrued stock compensation	708	—	—	—	—
Convertible preferred stock	—	—	—	—	40,497
Accumulated deficit	(174,198)	(148,905)	(115,721)	(95,032)	(78,732)
Total stockholders' equity (deficit)	18,319	42,659	73,037	89,792	(6,703)

Certain 2002 and 2001 amounts have been reclassified to conform to the 2003 presentation.

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

The following discussion of our financial condition and results of operations should be read in conjunction with Item 6, "Selected Financial Data" and our audited consolidated financial statements and related notes included in Part IV of this Report. This discussion includes forward-looking statements, such as our projections about future results of operations that are inherently uncertain. Our actual results could differ materially from those anticipated in our forward-looking statements as a result of many factors including, but not limited to, those discussed in "Factors That May Affect Our Business" in this item.

Introduction

Our current efforts are focused on improving cash flows, manufacturing products and entering into relationships to market and sell our products. Management's objective is to manufacture and sell products in order to generate sufficient cash flows to sustain the Company's operations. Our cash balance was $7.7 million at December 31, 2003. We have incurred negative operating cash flows of $15.2 million, $23.9 million, and $18.5 million in 2003, 2002, and 2001, respectively. We have reduced all research and development expenditures not supporting product development. Any further significant reductions will impede our ability to develop and manufacture products.

On March 8, 2004, we sold 5,169,682 shares of common stock at $1.58 a share and issued warrants to purchase 1,492,044 shares of common stock in a private placement with gross proceeds of approximately $8.2 million and net proceeds after expenses of approximately $7.5 million. The warrants include an anti-dilution provision in connection with any future issuance of our securities at a price below the $2.18 exercise price. However, the warrant shares cannot be issued at an exercise price below $1.984 per share. These funds combined with our existing resources, are expected to sustain our operations through 2004. We will require substantial additional working capital to continue our product development programs and to fund our future operations.

Overview

Current significant financial and operating events and strategies are summarized as follows:

- *Product focus*—We have shifted our focus from proteomic tools and services to therapeutic protein and vaccine products and diagnostic tests. Our current primary product focus is alpha-galactosidase A enzyme-replacement therapy product and aprotinin. Both of these products have remaining development periods extending past 2004 for the pharmaceutical market. Although no assurances can be given, we project sales of research grade aprotinin beginning in the third quarter of 2004. Commercialization of our BAMF technology for diagnostic tests of cancer and other diseases is in an early stage of commercialization.
- *Cancellation of NIEHS contract will have a small long-term effect on loss from operations*—The National Institute of Environmental Health Services ("NIEHS") contract with us was terminated for the Government's convenience after an agreed upon wind-down period ending on December 31, 2003. Our performance under the contract including sample analysis, reports and data deliverables has been in strict conformance with contract specified research protocols and timetables. As a result of the termination of the NIEHS contract and consistent with our product refocus, we have ceased operating activities at our Germantown, Maryland facility and are in the process of eliminating any remaining operating costs. We expect that these cost savings will offset the decrease in

revenues and the termination of the NIEHS contract will have a small long-term effect on loss from operations.

- *Continued cost reductions* — We implemented a company-wide restructuring in June 2002 that reduced our headcount and cancelled certain consulting and outside service contracts. Cost reductions continued into 2003 with our reorganization in June 2003 and wind down of our Germantown, Maryland proteomics operations. These reorganizations eliminated several management positions and the Board of Directors appointed Kevin J. Ryan as President and Chief Executive Officer and promoted Ronald J. Artale to Chief Operating Officer. The total number of full-time permanent employees declined from 174 in 2001 to 76 in March 2004, a decrease of 56%. We recorded $1.4 million of severance benefits during 2003 comprised of $1.1 million in the second quarter related to our reorganization and $0.3 million in the fourth quarter related to the wind down of our Germantown, Maryland operations.
- The wind down of our Germantown, Maryland operations resulted in impairment charges of $3.6 million in 2003 that reduced the carrying value of property, plant and equipment. Current projections indicate that further impairment charges will not be required. However, no assurances can be made that events or changes in circumstances may indicate that the carrying amount of long-lived assets may be impaired. Also, upon the disposal of certain Germantown, Maryland assets, we will incur charges that may be partially or totally offset by income.

Results of Operations

Revenues—The following table presents the changes in revenues from 2001 through 2003:

		Increase from 2002			(Decrease) from 2001		
	2003	Amount	%	2002	Amount	%	2001
Revenues	$3,570,000	$948,000	36%	$2,622,000	$(15,109,000)	(85%)	$17,731,000

Revenues in 2003 and 2002, primarily attributed to research contracts and grants, have offset costs, but have not been sufficient to sustain the Company operations. The increase in revenues from 2002 to 2003 is attributable to the NIEHS contract. The NIEHS contract revenues were $2.1 million and $0.8 million in 2003 and 2002, respectively. We believe that the loss of revenues from the termination of the NIEHS contract will have a limited long-term effect on our loss from operations, since the costs associated with this contract are in the process of being eliminated. The decrease in revenues from 2001 to 2002 is primarily attributed to the completion of the research collaboration with The Dow Chemical Company and its subsidiary, Dow AgroSciences LLC ("Dow") in August 2001. Dow associated revenues were $15.1 million in 2001. We expect that quarterly revenues will be lower in the first half of 2004 than 2003 as a result of the cancellation of the NIEHS contract. However, we expect quarterly revenue increases with our first product sales of research grade aprotinin starting in the third quarter of 2004.

Cost and expenses—The cost reduction programs and reorganizations during 2003 and 2002 and the wind down of the Germantown, Maryland operations have significantly reduced costs and cash expenditures throughout the Company. From 2002 to 2003 expenses decreased $3.7 million for employee compensation and benefits, $1.0 million for outside consulting and research services, $1.0 million for patent application legal services, and $0.6 million for materials purchases. In addition, non-cash depreciation decreased $1.4 million, non-cash compensation decreased $1.1 million, non-cash amortization of goodwill and purchased intangibles decreased by $0.6 million and non-cash impairment charges increased by $2.3 million.

Development agreements and *research and development costs*—The following table presents the changes in total research activities from 2001 through 2003:

	2003	Increase (Decrease) from 2002 Amount	%	2002	(Decrease) from 2001 Amount	%	2001
Development agreements	$ 4,720,000	$ 3,473,000	279%	$ 1,247,000	$(2,220,000)	(64%)	$ 3,467,000
Research & development	11,511,000	(9,680,000)	(46%)	21,191,000	(1,200,000)	(5%)	22,391,000
Total research activities	$16,231,000	$(6,207,000)	(28%)	$22,438,000	$(3,420,000)	(13%)	$25,858,000

Development agreements and research and development costs consist mainly of personnel expenses, outside research services, research materials and laboratory overhead costs. Costs of *total research activities* have decreased significantly because of our product refocus and cost reduction efforts. *Development agreement costs*, as they related to activities performed under revenue generating research agreements and grants, have and are expected to fluctuate consistently with increases or decreases in revenues earned from research agreements and grants. Specifically in 2003, the increased development agreement costs are attributed to increased research activities in the amount of $3.0 million for the NIEHS contract and $0.9 million for the NIST grant, partially offset by decreased efforts performed under commercial contracts. The decrease in *research and development* expense in 2003 is attributed to this allocation of resources to customer projects and the cost reductions efforts including $1.1 million for employee compensation and benefits from headcount and salary reductions, $0.8 million for outside consulting and research services, and $0.6 million for materials purchases. In addition, non-cash depreciation decreased $1.1 million and non-cash compensation decreased $1.3 million. We expect that our research and development expenses will be lower in 2004 than 2003 as the annualized effect of cost reductions are realized. We expect to incur costs of product sold as we begin to manufacture and sell our first product.

The decrease in development agreement costs in 2002 from 2001 is primarily attributable to the completion of our research collaboration with Dow in August 2001. The decrease research and development costs in 2002 from 2001 is primarily attributable to the company-wide restructuring in June 2002 that reduced the Company's headcount and the cancellation of certain consulting and outside research services.

General and administrative—The following table presents the changes in general and administrative expenses from 2001 through 2003:

	2003	(Decrease) from 2002 Amount	%	2002	(Decrease) from 2001 Amount	%	2001
General & administrative	$9,159,000	$(3,003,000)	(25%)	$12,162,000	$(2,211,000)	(15%)	$14,373,000

General and administrative expenses have decreased significantly because of our cost reduction efforts including $1.0 million for patent application legal service and $2.6 million for employee compensation and benefits from headcount and salary reductions, partially offset by increases in other costs. We expect general and administrative expenses in 2004 to be lower than 2003 as the annualized effect of cost reductions are realized.

Impairment of property—The wind down of our Germantown, Maryland operations resulted in impairment charges of $3.6 million in 2003 that reduced the carrying value of property, plant and equipment. In 2002, we determined that certain machinery and equipment, related to our Germantown, Maryland operation, was permanently idle and as a result, we recognized an impairment charge of $0.4 million.

Impairment of goodwill—Our goodwill balance of $0.8 million related to our purchase of the Germantown, Maryland operations in 1999, was determined to be impaired and was written off at December 31, 2002.

Amortization of goodwill and purchased intangibles—Goodwill and purchased intangible assets relate to the purchase of our Germantown, Maryland operations in 1999. Amortization expense decreased $0.7 million in 2002 from 2001, as goodwill was no longer amortized effective January 1, 2002 in accordance with Statement of Financial Accounting Standards No. 142. However, amortization of purchased intangibles continued until those assets became fully amortized in 2003, resulting in decreased amortization expense of $0.6 million in 2003 from 2002.

Interest income—The decreased interest income of $0.5 million in 2003 and of $2.5 million in 2002 is attributable to our declining cash and marketable securities balances available for investment and significant reductions in interest yields. We expect interest income in 2004 to be lower than 2003 due to the declining cash and marketable securities balances.

Liquidity and Capital Resources

Net cash used in operating activities—The following table presents annual cash flows from operating activities from 2001 through 2003:

	Year Ended December 31,		
	2003	2002	2001
Cash paid to employees	$ (9,376,000)	$(13,220,000)	$(13,873,000)
Cash paid to suppliers	(9,556,000)	(13,818,000)	(17,470,000)
Total cash paid to employees and suppliers	(18,932,000)	(27,038,000)	(31,343,000)
Cash received from customers	3,389,000	2,138,000	8,979,000
Interest received	350,000	985,000	4,002,000
Interest paid	(14,000)	(17,000)	(89,000)
Net cash used in operating activities	$(15,207,000)	$(23,932,000)	$(18,451,000)

Due to our cost reductions programs and reorganizations during 2003 and 2002, we progressively decreased the amount of *total cash paid to employees and suppliers* from 2001 through 2003. The net cash used in operating activities increased from 2001 to 2002 because of the lower amount of *cash received from customers* related to the ending of the Dow research collaboration, and less *interest received* related to the declining investment balances and interest yields. The *net cash used in operating activities* decreased from 2002 to 2003 because of the decreased *total cash paid to employees and suppliers* related to our cost reduction programs.

The following table presents quarterly cash flows from operating activities during 2003:

	Quarters Ended,			
	December 31	September 30	June 30	March 31
Cash paid to employees	$(2,094,000)	$(2,064,000)	$(2,699,000)	$(2,519,000)
Cash paid to suppliers	(2,246,000)	(2,719,000)	(2,247,000)	(2,344,000)
Total cash paid to employees and suppliers	(4,340,000)	(4,783,000)	(4,946,000)	(4,863,000)
Cash received from customers	834,000	1,103,000	763,000	689,000
Interest received	29,000	54,000	153,000	114,000
Interest paid	(3,000)	(3,000)	(4,000)	(4,000)
Net cash used in operating activities	$(3,480,000)	$(3,629,000)	$(4,034,000)	$(4,064,000)

During 2003, we progressively decreased the quarterly *net cash used in operating activities.* Cash paid to employees include severance benefits of $136,000, $208,000 and $348,000 in the quarters ended December 31, September 30 and June 30, respectively. The improvement in our operating cash usage is attributable to our cost reduction efforts. We expect the negative operating cash flows to continue throughout 2004 at a similar rate as the fourth quarter. However, this rate of cash usage is not sustainable for a long-term period. Our ability to develop our products and sustain operations will require subsequent funding through collaborations, or debt or equity financing in the short term and product sales in the long term. Although product sales would increase our short-term usage of cash for inventory and cost of product sold, it is expected that they would eventually generate positive cash flows.

Cash used in investing activities—Capital expenditures were $0.1 million, $1.0 million, and $12.3 million in 2003, 2002, and 2001 respectively. We have no material capital expenditure commitments at December 31, 2003. We anticipate that in 2004 our biomanufacturing facility in Owensboro, Kentucky will require approximately $2.1 million of expenditures to support our business objectives. Such capital expenditures will be financed through the recently completed equity financing.

Net cash provided (used in) by financing activities—In 2000, we received net proceeds of $88.8 million from our initial public offering, which has sustained the Company's operations since that time. Financing activities have not provided significant cash flows from 2001 through 2003. The net cash use by financing activities in 2001 is attributable to debt repayments. Interest rates could be increased or payments accelerated for our long-term note payable with a balance of $261,000 at December 31, 2003 if certain levels of employment are not increased at our Owensboro, Kentucky facility.

We currently anticipate that our current cash, cash equivalents and short-term investments will be sufficient to meet our anticipated needs for working capital and capital expenditures for at least the next 12 months. However, we may be required, or could elect, to seek additional funding at any time. We cannot assure you that additional equity or debt financing, if required, will be available on acceptable terms, if at all.

Commitments

The following commitments table presents our non-cancelable minimum payments under contractual obligations as of December 31, 2003:

	Payments Due				
	2004	2005 and 2006	2007 and 2008	Thereafter	Total
Long-term debt	$ 52,000	$ 111,000	$ 98,000	$ —	$ 261,000
Accrued stock compensation	—	708,000	—	—	708,000
Operating leases	1,536,000	3,103,000	3,323,000	1,985,000	9,947,000
Research agreements	289,000	—	—	—	289,000
License agreements	59,000	—	—	—	59,000
Total commitments	$1,936,000	$3,922,000	$3,421,000	$1,985,000	$11,264,000

We lease facilities in Vacaville, California and Germantown, Maryland under operating leases. We have research sponsorship agreements with major universities, government institutions or other companies whereby we fund specific projects of interest to us. In addition to the future non-cancelable minimum payments above, certain of the research agreements require future aggregate payments of $765,000 if the agreements are not cancelled. Our long-term accrued stock compensation relates to employee restricted stock awards that can be settled by us

in stock or cash, unless certain cash flow objectives are met, and then, only in stock. We do not have any capital lease obligations, long-term purchase obligations, off-balance sheet arrangements or any other long-term liabilities besides those listed above.

Critical Accounting Policies

Our accounting policies are explained in Note 1 to the audited consolidated financial statements included in Part IV of this Report. We consider the following accounting policies to be critical given they involve estimates and judgments made by management and are important for our investors' understanding of our operating results and financial condition.

Long-Lived Assets—Our long-lived assets include capitalized costs of filing patent applications, capitalized licenses and property and equipment. See Notes 1, 4 and 5 to the audited consolidated financial statements included in Part IV of this Report for more detail regarding our long-lived assets. We evaluate our long-lived assets for impairment in accordance with SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets" whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable. Estimates of future cash flows and timing of events for evaluating long-lived assets for impairment are based upon management's judgment. If any of our intangible or long-lived assets are considered to be impaired, the amount of impairment to be recognized is the excess of the carrying amount of the assets over its fair value. The net carrying value of long-lived assets at December 31, 2003, subject to possible impairment charges in the future, are presented by location in the following table below:

	Vacaville California	Owensboro Kentucky	Germantown Maryland	Total
Machinery and equipment	$1,077,000	$1,239,000	$ 750,000	$ 3,066,000
Land, building and leasehold improvements	35,000	4,399,000	1,128,000	5,562,000
Patents	1,693,000*	—	200,000	1,893,000
Licensees	1,181,000	—	—	1,181,000
	$3,986,000	$5,638,000	$2,078,000	$11,702,000

* Patent technology is also used at the Owensboro, Kentucky biomanufacturing facility.

All long-lived assets are amortized or depreciated over the shorter of their estimated useful lives, the estimated period that the assets will generate revenue, or the statutory or contractual term in the case of patents and intellectual property licenses. Estimates of useful lives and periods of expected revenue generation are reviewed periodically for appropriateness and are based upon management's judgment.

Workforce Reductions—In connection with our restructuring plans, we accrue for severance payments and other related termination benefits provided to employees in connection with involuntary staff reductions. We accrue for these benefits in the period when benefits are communicated to the terminated employees. Typically, terminated employees are not required to provide continued service to receive termination benefits. In general, we use a formula based on the number of years of service to calculate the termination benefits to be provided to affected employees. At December 31, 2003, $0.5 million was accrued for future severance benefit payments.

Stock-Based Compensation—During 2003, we adopted Statement of Financial Accounting Standards No. 123 ("SFAS 123"), "Accounting for Stock-Based Compensation" effective as of

January 1, 2003 for its stock-based employee compensation plans using the prospective recognition method under Statement of Financial Accounting Standards No. 148 ("SFAS 148"), "Accounting for Stock-Based Compensation-Transition and Disclosure, an amendment of SFAS 123." This method applies the recognition provisions of SFAS 123 to all employee stock awards granted, modified, or settled after January 1, 2003 and accordingly, recognized compensation expense for those issuances under our stock-based employee compensation plans. Methodologies used for calculations such as the Black-Scholes option-pricing model and variables such as volatility and expected life are based upon management's judgment. Such methodologies and variables are reviewed and updated periodically for appropriateness and affect the amount of recorded charges. See Notes 1 and 10 to the audited consolidated financial statements included in Part IV of this Report for more information on the amounts, methodologies and variables related to non-cash stock-based compensation charges.

Inflation

We believe that inflation has not had a material adverse impact on our business or operating results during the periods presented.

Factors That May Affect Our Business

Risks Related To Our Business

We have a history of significant net losses and negative cash flows. We recently have raised additional working capital. However, our working capital may not be sufficient to fund all of our product development initiatives.

We have realized significant net losses and negative operating cash flows in recent years and in the year ended December 31, 2003. Our working capital balance at December 31, 2003 was $7.0 million. On March 8, 2004, we sold additional common stock (see Management's Discussion and Analysis of Financial Condition and Results of Operations) raising net proceeds after expenses of approximately $7.5 million. Based upon our current working capital balance, our current rate of negative operating cash flows and the expected cost to complete the development of our products, we cannot assure you that the Company will be able to sustain operations without additional working capital. Our recent operating results and our current stock price may limit our ability to issue additional equity securities and existing stockholders could experience significant dilution upon such an issuance.

Our revenues for the years ended December 31, 2003 and 2002 were not significant. We may be required to further reduce our operating costs by further restructuring our operations or reducing the scope of our development programs. These actions may adversely affect our ability to generate new sources of revenue. We currently lease excess office and laboratory space in Germantown, Maryland. We are attempting to sublease our Germantown facility for the remainder of the lease term that expires in 2010. If we are unable to sublease this excess space, we will not realize all of our planned cost saving for 2004. If we are unable to significantly increase our revenues or reduce expenses, we will not be able to achieve profitability or positive operating cash flows, our working capital will continue to erode, and our business will suffer.

We need to continue funding our product development programs. Our aprotinin and alpha-galactosidase products require clinical trials to prove their efficacy and safety for pharmaceutical applications. We do not have sufficient working capital to complete all phases of clinical trials. If we are unable to raise sufficient equity or collaborative funding, we may delay or abandon some of our product development initiatives, which would likely harm our business.

We may require additional capital.

We require substantial working capital to continue our product development programs and to fund our operations. In addition, the risks inherent in developing innovative products, such as aprotinin, alpha-galactosidase and the BAMF technology-based diagnostic tests make it difficult to forecast with certainty the capital required to commercialize our products. We may raise this capital through public or private equity financings or through collaborations or strategic partnerships. Our access to equity markets may be restricted by depressed stock valuations or other factors. Also, if we raise additional funds by issuing equity securities, existing stockholders may be significantly diluted. We may be unsuccessful in entering into any new collaboration or strategic partnership that results in significant working capital or revenue. If we are unable to raise sufficient additional capital, we may have to curtail or cease operations.

We may not be able to enter into collaborations necessary to fully develop and commercialize our products and technologies, and we will be dependent on our collaborators if we do.

We are independently pursuing some therapeutic product applications into the development stage. However, we expect to develop and commercialize most of our future products in collaboration with pharmaceutical, biotechnology and other companies. For example, our strategy concerning our aprotinin and alpha-galactosidase A involves seeking partners to complete the development of these products. We cannot assure you that such collaborative arrangements will be available to us on acceptable terms, or at all. If our cash flows continue to deteriorate or we take significant steps to reduce our expenses, potential partners may question our ability to perform and choose not to do business with us, which would make it harder for us to find a partner and would harm our ability to commercialize our products. Our success will depend in large part on our ability to enter into future collaborations with other companies for the financing of development and/or regulatory approval and commercialization of our products. Our reliance upon these companies for these capabilities will reduce our control over such activities and could make us dependent upon them. Furthermore, obtaining funds through arrangements with collaborative partners or others may require us to relinquish rights to certain of our technologies, product candidates or products that we would otherwise seek to develop or commercialize on our own, or to sell or license the rights to certain of our products or technologies on terms that are worse than we might have been able to obtain in a different environment. To date, we have entered into only a limited number of collaborations. Generally, the scope of these collaborations has been to demonstrate the function of plant genes and the feasibility of using viral vectors to create proteins in plants and to identify marker proteins for drug development and diagnostics. Some of our existing agreements provide us with rights to participate financially in the commercial development of products resulting from the use of our technologies. We may be unable to obtain such rights in future collaborations. In addition, unforeseen delays or complications could arise and result in the breach of our contractual obligations with our collaborators and others, or render our technologies unable to perform at the quality and capacity levels required for success.

We may be unable to recruit and retain senior management and other key scientific personnel on whom we are dependent.

The loss of one or more of our senior management or other key scientific personnel could significantly harm our business, cause collaborators to cease doing business with us or potential collaborators to decline to do business with us, and could otherwise inhibit our research and development and commercialization efforts. None of our key personnel are subject to employment agreements that prevent them from leaving our employment. We face competition for research scientists and technical staff from other companies, academic institutions,

government entities, nonprofit laboratories and other organizations. We have implemented 10% cash salary reductions substituting non-cash stock compensation for our highest paid employees to conserve cash. Our compensation practices may be less attractive compared to our competition. Failure to recruit and retain senior management and scientific personnel on acceptable terms may prevent us from achieving our business objectives.

Future workforce reductions and management restructurings may hurt the performance of our continuing personnel, and make it more difficult to retain the services of key personnel.

We restructured our operations in both 2002 and 2003, resulting in substantial workforce reductions. These reductions affected all functional areas including a change in top management. Future changes and reductions may create concerns in our employee base about job security, our direction or focus, and the continued viability of the Company. Such concerns could lower productivity, make it more likely that some of our key employees will seek new employment and require us to hire replacements, and cause concerns among collaborators or potential collaborators about doing business with us. These factors also may make the management of our business more difficult and make it harder for us to attract employees in the future.

We are at an early or middle stage of product commercialization, and we may not be able to successfully develop our products and technologies nor sustain commercial use of our technology.

We are in an early or middle stage of commercialization, and we are subject to all of the risks inherent in the development of a business enterprise, including the need for substantial capital to support the development of our products and technologies. Our anticipated products most likely will require that we enter into new collaborations before we can manufacture and/or market them. Our NHL vaccine cannot be further developed without collaboration in the foreseeable future. Development of our alpha-galactosidase A and aprotinin products without collaboration or partnering are limited in terms of development. Because we are in new and developing fields such as diagnostic tests for disease, and our research focuses on new and unproven products, our therapeutic vaccines, proteins and other therapeutics under development may not be effective for their intended purpose, or may not meet regulatory requirements for safety and efficacy. In addition, even if we successfully develop a product, there may not be a substantial commercial market for that product at commercially viable prices.

We are in new and developing fields and there may not be a market for our technologies.

Our technologies, including our GENEWARE and BAMF technology, have limited commercial precedent. Much of our research is fundamentally unique and we cannot assure the acceptance of its scientific merit or the benefits of products produced by it, nor that the public will react favorably to it. The usefulness of the information and products generated by our proteomics, functional genomics and bioinformatics technologies is unproven, and our collaborators and potential collaborators may determine that they are not useful, cost-effective, or otherwise unacceptable to them. We generate large amounts of data from our research with genes and proteins and we may not be able to mine or integrate this data in a timely manner, or turn it into commercially viable information. In addition, because our fields are characterized by rapid innovation, we must complete development of our technologies in time to meet market demand, if any. If we fail to do so, it is likely that other technologies and companies will predominate and we will not be able to earn a sufficient return on our investment.

Alternative technologies may supersede our technologies or make them non-competitive.

Genomics, proteomics, biomanufacturing and bioinformatics are intensely competitive fields. They are characterized by extensive research efforts, which result in rapid technological progress that can render existing technologies obsolete or economically noncompetitive. If our competitors succeed in developing more effective technologies or render our technologies obsolete or noncompetitive, our business will suffer. Many universities, public agencies and established pharmaceutical, biotechnology, health care, chemical and other life sciences companies with substantially greater resources than we have are developing and using technologies and are actively engaging in the development of products similar to or competitive with our products and technologies. Like us, our competitors are using proteomics and genomics technologies to identify potential drug targets, therapeutic proteins and diagnostic marker proteins. To remain competitive, we must continue to invest in new technologies and improve existing technologies. If our revenues and cash flows do not improve significantly, we will not have the resources to continue such investment.

Our competitors may devise faster, more complete or more accurate methods to obtain proteomic and functional genomic information than our technologies and systems, including our GENEWARE systems and BAMF technology. There has been and continues to be substantial academic and commercial research effort devoted to the development of such methods. If successful competitive methods were developed, it would undermine the commercial basis for the products and technologies we intend to provide.

General economic conditions may cause uncertainty with respect to other companies and entities collaborating with us or otherwise dealing with us, and this can have an adverse effect on our revenues and cash flows.

To a large extent, decisions by businesses and other entities to collaborate or otherwise do business with us are discretionary, and the decision making process typically takes many months to complete. We believe that the previous slowdown in the U.S. and global economies, and the biotechnology and pharmaceutical industries in particular, has caused potential collaborators and customers to defer decisions to work with us or to access our technologies. As a result, revenues and cash flows have been uncertain. Future results are difficult to predict, as it is difficult to accurately assess and predict the future demand for our products, technologies and services. General economic conditions are expected to improve as the economy grows. However, we cannot assure you that any such improvement will cause our results of operations to improve. If economic conditions decline or stagnate, our revenues and operating results could be adversely affected.

Conflicts with collaborators or licensees could harm our business.

Conflicts with collaborators could have a negative impact on our relationships with them, including on our revenues to be derived from certain of these relationships, and impair our ability to enter into future collaborations, either of which could adversely affect our business. Collaborators could develop competing products, preclude us from entering into collaborations with their competitors or terminate their agreements with us prematurely. Moreover, disagreements could arise with collaborators or licensees over rights to our intellectual property, our rights to share in any of the future revenues from products or technologies resulting from use of our technologies, our rights to payments for achievement of milestones or our performance of research and development activities on behalf of collaborators, or our activities in separate fields may conflict with other business plans of our collaborators or licensees.

We must enter into agreements with third parties to provide sales and marketing services, or develop these capabilities on our own, if we are to successfully commercialize our products and technologies.

Although we plan to enter into sales and marketing arrangements with third parties, we may not be able to enter into these arrangements on favorable terms, if at all. We must also continue to develop a business development force with sufficient technical expertise to generate demand for our products and technologies. Our possible inability to develop business development personnel, or contract for effective sales and marketing capabilities would significantly impair our ability to develop and commercialize our products and technologies.

We may not be able to successfully manufacture products in commercial quantities or at acceptable costs.

The failure of our technologies to provide safe, effective, useful or commercially viable approaches to the discovery, development and/or production of drug targets and proteins which can be used as therapeutics and diagnostic tests for diseases such as cancer would significantly limit our business plan and future growth.

Concentration of ownership among our existing executive officers, directors and principal stockholders may enable them to collectively influence significant corporate transactions that require stockholder approval.

Our directors, our executive officers and principal stockholders affiliated with our directors and executive officers beneficially own, in the aggregate, approximately 22% of our outstanding common stock as of March 26, 2004. The concentration of ownership in combination with other common stockholders may collectively influence significant corporate transactions such as mergers, changes in control, consolidation or sale of some or all of our assets, and other significant corporate transactions requiring shareholder approval.

Our stockholder rights plan and provisions of our charter documents and Delaware law may inhibit a takeover, which could adversely affect our stock price.

We have adopted a stockholder rights plan and declared a dividend distribution of one right for each outstanding share of common stock to stockholders of record as of May 4, 2001. Subject to certain specified exceptions and limitations under the rights plan, we will continue to issue one right for each share of common stock that becomes outstanding after May 4, 2001. Each right entitles the holder to purchase one unit consisting of one one-hundredth of a share of our Series A Junior Participating Preferred Stock for $45 per unit. Under certain circumstances, if a person or group acquires 15% or more of our outstanding shares of common stock, holders of the rights (other than the person or group causing their exercisability) will be able to purchase, in exchange for the $45 exercise price, shares of our common stock or of any company into which we are merged having a value of $90. In addition, the board of directors has the option, under certain circumstances, to exchange each right (other than rights held by the person or group triggering the board of directors' option) for a share of common stock for no additional consideration on the part of the holder of the right. The rights expire on April 27, 2011. Our rights plan could make it more difficult for a third party to acquire us (or a significant percentage of our outstanding capital stock) by causing substantial dilution of the stock ownership of a person or group attempting to acquire control of us. Our rights plan may have the effect of discouraging takeover attempts because a potential acquirer would have to negotiate with our board of directors to avoid suffering dilution.

Provisions in our charter and bylaws and applicable provisions of the Delaware General Corporation Law may also make it more difficult for a third party to acquire control of us without the approval of our board of directors. These provisions may make it more difficult or expensive for a third party to acquire a majority of our common stock or delay, prevent or deter a merger, acquisition, tender offer or proxy contest, which may adversely affect our stock price.

Risks Related to Our Industry

If companies in the pharmaceutical, biotechnology, healthcare, and life sciences industries do not succeed or their demand for our products and technologies decreases, then our revenues could be reduced.

We expect to derive our revenues primarily from products and technologies provided to the pharmaceutical, biotechnology, healthcare and life sciences industries. Accordingly, our success will depend directly on the success of companies in these industries and their demand for our products, services and technologies. Our operating results may fluctuate substantially due to reductions and delays in expenditures by companies in those industries, or their unwillingness or inability to use our products and technologies. These reductions and delays may result from factors that are not within our control, such as:

- changes in economic conditions generally;
- the extent to which companies in these industries conduct research and development involving diagnostics, proteomics and functional genomics in-house or through industry consortia;
- the extent to which genomic information is or is not made publicly available;
- consolidation within one or more of these industries;
- changes in the regulatory environment affecting these industries;
- pricing pressures;
- market-driven pressures on companies to consolidate and reduce costs; and/or
- other factors affecting spending in these industries.

If competitive products are better than our products, then our business may fail.

Our human and veterinary therapeutics and vaccines are included in the highly competitive markets for protein development and production. We face significant competition in our protein product development and production efforts from entities using alternative, and in some cases higher volume and larger scale, approaches for the same purpose. Competitors with substantially greater resources are actively developing products similar to or competitive with our products and potential products. Our competitors may succeed in developing products or obtaining regulatory approval before we do or in developing products that are more effective than those we develop or propose to develop. A large number of universities and other not-for-profit institutions, many of which are funded by the U.S. and foreign governments, are also conducting research to discover genes and their functions. Any one or more of these entities may discover and establish a patent position in one or more of the genes or proteins that we wish to commercialize.

Several pharmaceutical, biotechnology, chemical and other life sciences companies engage in research and development in the use of unique gene expression systems to produce therapeutic proteins. These competitors may develop products earlier or obtain regulatory approvals faster

than we may be able to, or develop products that are more effective than ours. New developments are expected to continue, and discoveries by others may render our products and technologies noncompetitive, which could lead to the failure of our business.

Diagnostics companies in the health care industry with more resources than us constitute varied competition for our diagnostic technology, which is early stage. Competing diagnostic technologies may be developed and marketed that may be competitively superior to ours.

Our collaborators and we may not obtain FDA and other approvals for our products in a timely manner, or at all.

Drugs and certain diagnostic products and tests are subject to an extensive and uncertain regulatory approval process by the FDA and comparable agencies in other countries. The regulation of new products and certain diagnostic products and tests is extensive, and the required process of laboratory testing and human studies is lengthy, expensive and uncertain. The burden of these regulations will fall on us to the extent we are developing proprietary products. We may not be able to obtain the clearances and approvals necessary for the clinical testing, field-testing, manufacturing or marketing of our products. If the products or diagnostic tests are the result of a collaborative effort, these burdens may fall on our collaborators or we may share these burdens with them. We may not obtain FDA or other approvals for those products or tests in a timely manner, or at all. We may encounter significant delays or excessive costs in our efforts to secure necessary approvals or licenses. Even if we obtain FDA regulatory approvals, the FDA extensively regulates manufacturing, labeling, marketing, promotion and advertising after product approval. Further, once a manufacturer obtains regulatory approval, a marketed product and its manufacturer are subject to continual review, and discovery of previously unknown problems with a product, test or manufacturer may result in restrictions on the product, test, manufacturer or manufacturing facility, including withdrawal of the product or test from the market. In some countries, regulatory agencies also set or approve the sale prices for drug and diagnostic products and tests. Additionally, several of our product development areas may involve relatively new technology that has not been the subject of extensive product testing in humans. The regulatory requirements governing these products and diagnostic and tests and related clinical procedures remain uncertain and the products and tests themselves may be subject to substantial review by the FDA and foreign governmental regulatory authorities that could prevent or delay approval. Regulatory requirements ultimately imposed on our products could limit our ability to test, manufacture and commercialize our products and tests.

USDA rules could adversely affect us or our collaborators.

We must comply with USDA regulations for outdoor releases of genetically engineered organisms as well as other products designed for use on or with agricultural products. In addition, the USDA prohibits growing and transporting genetically modified plants except pursuant to an exemption or under special permits. We may use genetically modified plants as screening or production hosts. Changes in USDA policy regarding the movement or field release of genetically modified plant hosts could adversely affect our business by increasing the cost of our products and technologies or decreasing consumer demand for those products and technologies or causing the government to prohibit their sale or use. If we fail to comply with such rules or policies, we may be subject to financial loss or be liable for costs incurred as a result of non-compliance.

If there is negative public reaction to the use of genetically engineered products and technologies, then the market for certain products and technologies we develop will be adversely affected.

Future commercial success of some of our products and of the products of some of our collaborators will depend in part on public acceptance of the use of genetically engineered products including drugs, plants and plant products. Claims that genetically engineered products are unsafe for consumption or pose a danger to the environment may influence public attitudes. Negative public reaction to genetically modified organisms and products could result in greater government regulation of genetic research and resultant products, including stricter labeling requirements, and could cause a decrease in the demand for our products, even if such products do not result from GMO organisms.

We may be sued for product liability and our product liability insurance may not be adequate.

The testing, marketing and sale of our and our collaborators' products and diagnostic tests will entail a risk of allegations of product liability, and third parties may assert substantial product liability claims against us. While we have limited product liability insurance to protect against this risk, adequate insurance coverage may not be available at an acceptable cost, if at all, in the future and a product liability claim or product recall could materially and adversely affect our business. Inability to obtain sufficient insurance coverage at an acceptable cost or otherwise to protect against potential product liability claims could prevent or inhibit the commercialization of the products and diagnostic tests developed by our collaborators or us. If we are sued for any injury allegedly caused by our products or our collaborators' products, our liability could exceed our total assets and our ability to pay the liability.

If we use hazardous materials in our business in a manner that causes injury or violates laws, we may be liable for substantial damages.

Our research and development processes involve the use of hazardous materials, including chemicals and radioactive and biological materials. Our operations also produce hazardous waste products. The chemicals we use include, but are not limited to, flammable solvents such as methanol and ethanol, ethidium dye which is a commonly used fluorescent dye for visualizing DNA, and buffer solutions used in the purification of DNA, and various organic solvents, acids and bases. We also use several radioisotopes including phosphorous-32, carbon-14, sulfur-35, phosphorous-33, iodine-125 and hydrogen-3. We cannot eliminate the risk of accidental contamination or discharge and any resultant injury from these materials. Federal, state and local laws and regulations govern the use, manufacture, storage, handling and disposal of these materials. We could be subject to civil damages and criminal penalties in the event of an improper or unauthorized release of, or exposure of individuals to, hazardous materials. Further, it is possible that the materials we use could contaminate another party's property. In addition, claimants may sue us for injury or contamination that results from our use or the use by third parties of these materials, and our liability may exceed our total assets and our ability to pay the liability. In addition, compliance with environmental laws and regulations is expensive, and current or future environmental regulations may impair our research and development and production efforts. Although we have general liability insurance, these policies do not cover claims arising from pollution from chemical, radioactive or biological materials. Our collaborators may also be working with various types of hazardous materials in connection with our collaborations. In the event of a lawsuit or investigation, we could be held responsible for any injury we or our collaborators cause to persons or property by exposure to, or release of, any hazardous materials.

Healthcare reform and restrictions on reimbursements may limit the financial returns from our products and diagnostic tests.

Our ability and that of our collaborators to commercialize therapeutics and diagnostic products and tests may depend in part on the extent to which government health administration authorities, private health insurers and other organizations will pay the cost of these products and tests. These third parties are increasingly challenging both the need for and the price of new medical products, tests and services. Significant uncertainty exists as to the reimbursement status of newly approved therapeutics and diagnostics, and adequate third party reimbursement may not be available for any product to enable us to maintain price levels sufficient to realize an appropriate return on our investment in research and product development.

Risks Related to Our Intellectual Property

Patent protection in the biotechnology, pharmaceutical, and healthcare industries is uncertain, which may result in a decrease in the value of our products and technologies.

We are involved in overlapping and rapidly evolving areas of biotechnology, pharmaceutical development, healthcare, and diagnostics and basic research involving viral vectors, plant transgenics, proteomics, functional genomics, protein transformation, and immunotherapy. Each of these areas has been the subject of intense research and patenting activity throughout the world by our commercial competitors, actual and potential collaborators, academic institutions and government researchers. We cannot determine whether or not there are patents currently pending that, if issued, would prevent us from practicing our core technologies, commercializing them or developing commercially viable products and diagnostic tests based upon them.

The patent positions of biotechnology firms generally are highly uncertain and involve complex legal and factual questions that will determine who has the right to develop a particular product. Changes in, or different interpretations of, patent laws in the United States and other countries might allow others to use our discoveries or to develop and commercialize products and technologies similar to our products and technologies without any compensation to us. Our potential collaborators or customers may conclude that uncertainties about patent protection decrease the value of our databases, products and services.

Throughout the world there are numerous issued patents, as well as published foreign patent applications which may be issued as patents, many of which relate to our current operations, our anticipated future operations and the products we are likely to develop. The scope of these patents is a matter of legal interpretation and is subject to uncertainty. We have not obtained, but we may in the future obtain, opinions from our patent counsel that we have freedom to conduct our commercial activities free of claims of patent infringement from third parties. From time to time, we receive letters from third parties that allege patent infringement on our part. Disagreements arising from these letters could result in costly and time-consuming litigation and divert our financial and managerial resources. In addition, if we are ever determined to infringe the patent of any third party, we may be required to obtain a license to use this patent, which would increase our cost of doing business.

Our patent applications may not result in issued patents that are enforceable.

Our disclosures in our patent applications may not be sufficient to meet the statutory requirements for patentability in all cases. As a result, we do not know which of our patent applications will result in enforceable patents. Our patent applications may not be issued as patents, and any patents that are issued to us may not provide commercially meaningful protection against competitors. Any issued patent may not provide us with competitive

advantages. Others may challenge our patents or independently develop similar products that could result in an interference proceeding in the U.S. Patent and Trademark Office. Others may be able to design around our issued patents or develop products similar to our products. In addition, others may discover uses for genes or proteins other than those uses covered in our patents, and these other uses may be separately patentable.

Public disclosure and patents relating to genes and gene sequences and diagnostic products and tests held by others may limit our proprietary rights.

The Human Genome Project and many companies and institutions have identified genes and deposited those sequences in public databases and are continuing to do so. These public disclosures might limit the scope of our claims or make unpatentable subsequent patent applications on full-length gene sequences. We are aware of issued patents and patent applications containing subject matter such that we or our licensees or collaborators may require a license or rights in order to research, develop or commercialize some of our products, diagnostic tests and technologies. We may find that licenses relating to such subject matter will not be available on acceptable terms, or at all.

Patent infringement or enforcement litigation or interference proceedings could be costly and disrupt our business and may prevent us from commercializing our products and diagnostic tests.

The technology that we use to develop our products, diagnostic tests and key resources, and those that we incorporate in our products, diagnostic tests and technologies, may be subject to claims by third parties, including our collaborators, that they infringe the patents or proprietary rights of others. Technologies of our collaborators may also be subject to infringement or similar claims which could impair our collaborative product and diagnostic test development and commercialization efforts. We also may need to enforce our patent rights in actions against others, which could be expensive. The risk of such events occurring will tend to increase as the fields of proteomics, genomics, health care and the biotechnology industry expand, more patents are issued and other companies attempt to discover genes and proteins and engage in other proteomics, genomics, diagnostics and biotechnology-related businesses.

With respect to identifying proteins uniquely associated with disease states or as targets for drug therapy, we are aware that companies have published patent applications relating to nucleic acids encoding specific proteins. We are also aware of issued and pending patent applications covering certain aspects of bioinformatic-based diagnostic testing. The issued patents by the U.S. Patent and Trademark Office to these companies, may limit our ability and the ability of our collaborators to practice under any patents that may be issued to us. Also, even if the U.S. Patent and Trademark office issues us a patent, the scope of coverage or protection afforded to the patent may be limited.

We may not be able to protect our know-how and trade secrets.

We generally control the disclosure and use of our know-how and trade secrets using confidentiality agreements. It is possible, however, that:

- Some or all confidentiality agreements will not be honored;
- Third parties will independently develop equivalent technology;
- Disputes might arise with our consultants, collaborators or others concerning the ownership of intellectual property; and/or
- Unauthorized disclosure of our know-how or trade secrets will occur

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Interest rate risk

Our exposure to market risk for changes in interest rates relates primarily to our investment portfolio. Our investments consist of money market funds, commercial paper, corporate and U.S. government agency notes, and bank certificates of deposit. The Company does not invest in derivative instruments. The Company mitigates its risk of principle loss by investing only in securities of high quality issuers with maturities of less than one year and limiting the amount of credit exposure to any one issuer.

The table below presents the amortized principal amount and weighted average interest rates at December 31, 2003. The amortized principal amount matures within 90 days and approximates fair value at December 31, 2003. If market interest rates were to change immediately and uniformly by 10% from levels at December 31, 2003, the fair value of our investments would change by an immaterial amount.

	Amortized Principal Amount	Weighted Average Interest Rate
Cash and cash equivalents	$7,737,000	0.71%

Foreign currency

The Company has minimal transactions in foreign currencies and has not had any material exposure to foreign currency rate fluctuations relating to assets or liabilities.

Item 8. Financial Statements and Supplementary Data

The financial statements and supplementary data required by this Item 8 are included in Part IV of this Report.

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

None.

Item 9A. Controls and Procedures

(a) *Disclosure controls and procedures.* Our Chief Executive Officer and Chief Financial Officer, after evaluating the effectiveness of our "disclosure controls and procedures" (as defined in the Exchange Act Rules 13a-15(e) and 15d-15(e)) as of the end of the period covered by this Annual Report on Form 10-K, have concluded that as of the end of the period covered by this report, our disclosure controls and procedures were adequate and designed to ensure that material information related to us and our consolidated subsidiaries would be made known to them by others within these entities.

(b) *Changes in internal controls over financial reporting.* There were no changes in our internal controls over financial reporting identified in connection with the evaluation required by paragraph (d) of Exchange Act Rule 13a-15 or 15d-15 that occurred during the fourth fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal controls over financial reporting.

PART III

Item 10. Directors and Executive Officers of the Registrant

Directors.

Information with respect to directors may be found in the section captioned "Proposal No. 1: Election of Directors" appearing in the definitive proxy statement to be delivered to stockholders in connection with the 2004 Annual Meeting of Stockholders. Such information is incorporated herein by reference.

Executive Officers.

Information with respect to executive officers may be found in the section captioned "Executive Officers" appearing in the definitive proxy statement to be delivered to stockholders in connection with the 2004 Annual Meeting of Stockholders. Such information is incorporated herein by reference.

Section 16(a) Compliance.

Information about compliance with Section 16(a) of the Securities and Exchange Act of 1934 that is required by this Item may be found in the section captioned "Compliance Under Section 16(a) of the Securities Exchange Act of 1934" appearing in the definitive proxy statement to be delivered to stockholders in connection with the 2004 Annual Meeting of Stockholders. Such information is incorporated herein by reference.

Item 11. Executive Compensation

Information with respect to executive compensation may be found in the section captioned "Executive Compensation and Related Information" appearing in the definitive proxy statement to be delivered to stockholders in connection with the 2004 Annual Meeting of Stockholders. Such information is incorporated herein by reference.

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

Information with respect to security ownership of certain beneficial owners and management may be found in the section captioned "Security Ownership of Certain Beneficial Owners and Management" appearing in the definitive proxy statement to be delivered to stockholders in connection with the 2004 Annual Meeting of Stockholders. Such information is incorporated herein by reference.

Information with respect to compensation plans under which shares of our common stock may be issued may be found in the section captioned "Equity Compensation Plans Information" appearing in the definitive proxy statement to be delivered to stockholders in connection with the 2004 Annual Meeting of Stockholders. Such information is incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions

Information with respect to certain relationships and related transactions may be found in the section captioned "Certain Relationships and Related Transactions" appearing in the definitive proxy statement to be delivered to stockholders in connection with the 2004 Annual Meeting of Stockholders. Such information is incorporated herein by reference.

Item 14. Principal Accountant Fees and Services

Information with respect to principal accountant fees and services may be found in the section captioned "Proposal No. 2: Ratification of Appointment of Auditors" appearing in the definitive proxy statement to be delivered to stockholders in connection with the 2004 Annual Meeting of Stockholders. Such information is incorporated herein by reference.

PART IV

Item 15. Exhibits, Financial Statement Schedules and Reports on Form 8-K

Financial Statements

The following financial statements are included herein:

Financial Statement Schedules

See index above

Exhibits

Exhibit Number	Exhibit Description	Incorporated by Reference			Filed Herewith
		Form	Date	Number	
3.1	Amended and Restated Certificate of Incorporation.	S-1	08/09/00	3.1	
3.2	Amended and Restated Bylaws, as amended on July 20, 2001.	10-Q	11/13/01	3.1	
3.3	Certificate of Designations specifying the terms of the Series A Junior Participating Preferred Stock of Registrant, as filed with the Secretary of State of the State of Delaware on May 4, 2001.	8-A	05/04/01	3.2	
4.1	Securities Purchase Agreement dated March 8, 2004 by the registrant and investors.				X
4.2	Registration Rights Agreement dated March 8, 2004 by the registrant and investors.				X
4.3	Common Stock Purchase Warrant agreements to purchase 1,492,044 shares of common stock dated March 8, 2004 by the registrant and investors.				X
4.4	Amendment to Warrant as of March 8, 2004 by the registrant and investors.				X
4.5	Form of registrant's Specimen Common Stock Certificate.	S-1	08/09/00	4.1	
4.6	Information and Registration Rights Agreement dated October 11, 1990 by and among the registrant and the parties who are signatories thereto.	S-1	08/09/00	4.2	

Exhibit Number	Exhibit Description	Incorporated by Reference			Filed Herewith
		Form	Date	Number	
4.7	Amendment to the Information and Registration Rights Agreement dated October 10, 1991 by and among the registrant and the parties who are signatories thereto.	S-1	08/09/00	4.3	
4.8	Second amendment to the Information and Registration Rights Agreement dated October 10, 1991 by and among the registrant and the parties who are signatories thereto.	S-1	08/09/00	4.4	
4.9	Third Amendment to the Information and Registration Rights Agreement dated March 20, 1998 by and among the registrant and the parties who are signatories thereto.	S-1	08/09/00	4.5	
4.10	Fourth Amendment to the Information and Registration Rights Agreement dated September 1, 1998 by and among the registrant and the parties who are signatories thereto.	S-1	08/09/00	4.6	
4.11	Warrant to purchase 1,848,091 shares of common stock dated September 1, 1998, by and between the registrant and The Dow Chemical Company.	S-1	08/09/00	4.10	
4.12	Warrant Agreement to purchase 1,848,091 shares of common stock dated September 1, 1998, by and between the registrant and The Dow Chemical Company.	S-1	08/09/00	4.11	
4.13	Warrant to purchase 21,991 shares of common stock dated January 29, 1988, assigned by the registrant on January 14, 2000 to Arnold Zimmerman.	S-1	08/09/00	4.12	
4.14	Warrant to purchase 21,991 shares of common stock dated January 29, 1988 assigned by the registrant on January 29, 2000 to Sebastian J. Trusso.	S-1	08/09/00	4.13	
4.15	Warrant Agreement to purchase 21,991 shares of common stock assigned by the registrant to Arnold Zimmerman.	S-1	08/09/00	4.14	
4.16	Warrant Agreement to purchase 21,991 shares of common stock assigned by the registrant to Sebastian J. Trusso.	S-1	08/09/00	4.15	
4.17	Rights Agreement dated April 27, 2001 between registrant and Equiserve Trust Company, as Rights Agent, which includes as Exhibit A the form of Certificate of Designations of Series A Junior Participating Preferred Stock, as Exhibit B the Form of Rights Certificate and as Exhibit C the Summary of Rights to Purchase Preferred Shares.	8-A	05/04/01	4.1	

Exhibit Number	Exhibit Description	Incorporated by Reference			Filed Herewith
		Form	Date	Number	
10.1*	Registrant's 2000 Stock Incentive Plan.	S-1	08/09/00	10.2	
10.2*	Registrant's 2000 Employee Stock Purchase Plan.	S-1	08/09/00	10.3	
10.3*	Form of registrant's Directors' and Officers' Indemnification Agreement.	S-1	08/09/00	10.4	
10.4	Dow Collaboration and License Agreement dated August 24, 1998, by and among the registrant and The Dow Chemical Company and its subsidiary Dow AgroSciences LLC.	S-1	08/09/00	10.5	
10.5	Lease Agreement dated October 15, 1987, and amendments 1 through 8 thereto between the registrant and Mission Vacaville Limited partnership.	S-1	08/09/00	10.9	
10.6	Ninth Amendment to Lease Agreement between registrant and Mission Vacaville Limited partnership, dated July 31, 2000.	10-K	04/02/01	10.11	
10.7	Tenth Amendment to Lease Agreement between registrant and Woodlawn Foundation (successor-in-interest to Mission Vacaville Limited partnership), March 1, 2001.	10-K	04/02/01	10.12	
10.8	Lease Agreement dated July 26, 2000 between Large Scale Proteomics Corporation and Westphalia Center II Limited partnership.	10-K	04/02/01	10.13	
10.9*	Letter Agreement between registrant and John D. Fowler, Jr.	10-K	04/01/02	10.14	
10.10*	Stock Purchase Subscription Agreement between registrant and John D. Fowler, Jr.	10-K	04/01/02	10.15	
10.11*	Warrant to Purchase Common Stock between registrant and John D. Fowler, Jr.	10-K	04/01/02	10.16	
10.12*	Stock Issuance Agreement between registrant and John D. Fowler, Jr.	10-K	04/01/02	10.17	
10.13*	Letter Agreement between registrant and Ronald J. Artale.	10-K	04/01/02	10.18	
10.14	Form of Stock Issuance Agreement Under the 2000 Stock Incentive Plan	10-Q	11/14/02	10.01	
10.15*	Separation of Employment Agreement between registrant and Robert L. Erwin	10-Q	8/14/03	10.01	
10.16*	Separation of Employment Agreement between registrant and David R. McGee.	10-Q	8/14/03	10.02	
21.1	Large Scale Biology Corporation Subsidiaries.				X
23.1	Independent Auditors' Consent.				X
31.1	Certification of the Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				X

Exhibit Number	Exhibit Description	Incorporated by Reference			Filed Herewith
		Form	Date	Number	
31.2	Certification of the Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				X
32.1	Certification of the Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				X
32.2	Certification of the Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				X

* Management contract or compensatory plan or arrangement filed as exhibits pursuant to Items 15(a) and 15(c) of Form 10-K.

Reports on Form 8-K

None.

INDEPENDENT AUDITORS' REPORT

To the Board of Directors and Stockholders
of Large Scale Biology Corporation

We have audited the accompanying consolidated balance sheets of Large Scale Biology Corporation and its subsidiaries (collectively the "Company") as of December 31, 2003 and 2002, and the related consolidated statements of operations, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2003. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

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

In our opinion, such consolidated financial statements present fairly, in all material respects, the financial position of Large Scale Biology Corporation and its subsidiaries as of December 31, 2003 and 2002, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2003 in conformity with accounting principles generally accepted in the United States of America.

As discussed in Note 1 to the consolidated financial statements, in 2003 the Company adopted Statement of Financial Accounting Standards ("SFAS") No. 123, "Accounting for Stock-Based Compensation" for its stock-based employee compensation plans using the prospective recognition method under SFAS No. 148. As discussed in Note 5 to the consolidated financial statements, in 2002 the Company changed its method of accounting for goodwill and other intangible assets to conform to SFAS No. 142, "Goodwill and Other Intangible Assets."

/s/ DELOITTE & TOUCHE LLP

Sacramento, California
March 24, 2004

LARGE SCALE BIOLOGY CORPORATION

CONSOLIDATED BALANCE SHEETS

	December 31, 2003	December 31, 2002
ASSETS		
Current assets:		
Cash and cash equivalents	$ 7,737,000	$ 8,238,000
Marketable securities	—	14,840,000
Accounts receivable, net of allowance of $154,000 in 2003	265,000	336,000
Prepaid expenses and other current assets	706,000	1,193,000
Total current assets	8,708,000	24,607,000
Property, plant and equipment, net	8,628,000	14,865,000
Intangible assets, net	3,074,000	4,486,000
Other assets	570,000	783,000
	$ 20,980,000	$ 44,741,000
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 592,000	$ 956,000
Accrued expenses	953,000	571,000
Current portion of long-term debt	52,000	49,000
Deferred revenue and customer advances	147,000	245,000
Total current liabilities	1,744,000	1,821,000
Long-term debt	209,000	261,000
Accrued stock compensation	708,000	—
Total liabilities	2,661,000	2,082,000
Commitments (Note 9)		
Stockholders' equity:		
Common stock, par value $.001 per share; 60,000,000 shares authorized; 25,901,273 and 25,223,753 shares issued and outstanding at December 31, 2003 and 2002, respectively	192,541,000	192,160,000
Stockholders' notes receivable	(24,000)	(46,000)
Deferred compensation	—	(550,000)
Accumulated deficit	(174,198,000)	(148,905,000)
Total stockholders' equity	18,319,000	42,659,000
	$ 20,980,000	$ 44,741,000

See accompanying notes to consolidated financial statements.

LARGE SCALE BIOLOGY CORPORATION

CONSOLIDATED STATEMENTS OF OPERATIONS

	Year Ended December 31,		
	2003	2002	2001
Revenues	$ 3,570,000	$ 2,622,000	$ 17,731,000
Costs and expenses:			
Development agreements	4,720,000	1,247,000	3,467,000
Research and development	11,511,000	21,191,000	22,391,000
General and administrative	9,159,000	12,162,000	14,373,000
Impairment of property	3,598,000	433,000	—
Impairment of goodwill	—	839,000	—
Amortization of goodwill and purchased intangibles	52,000	624,000	1,300,000
Total costs and expenses	29,040,000	36,496,000	41,531,000
Loss from operations	(25,470,000)	(33,874,000)	(23,800,000)
Other income (expense):			
Interest income	191,000	707,000	3,200,000
Interest expense	(14,000)	(17,000)	(89,000)
Total other income, net	177,000	690,000	3,111,000
Loss before provision for income taxes	(25,293,000)	(33,184,000)	(20,689,000)
Provision for income taxes	—	—	—
Net loss	$(25,293,000)	$(33,184,000)	$(20,689,000)
Net loss per share—basic and diluted	$ (.99)	$ (1.33)	$ (0.84)
Weighted average shares outstanding—basic and diluted	25,619,363	24,991,201	24,599,126

See accompanying notes to consolidated financial statements.

LARGE SCALE BIOLOGY CORPORATION

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

	Number of Shares of Common Stock	Amount				
		Common Stock	Stockholders' Notes Receivable	Deferred Compensation	Accumulated Deficit	Total Stockholders' Equity
Balances, December 31, 2000	24,446,325	$190,097,000	$(65,000)	$(5,208,000)	$ (95,032,000)	$ 89,792,000
Issuance of common stock	100,000	345,000				345,000
Issuance of common stock by Employee Stock Purchase Plan	48,433	389,000				389,000
Issuance of common stock for services	1,065	7,000				7,000
Exercise of stock options	97,166	186,000				186,000
Common stock granted to an employee	200,000	690,000		(690,000)		—
Stock compensation expense for options issued to non-employees		187,000				187,000
Payments on notes receivable			15,000			15,000
Amortization of deferred compensation				2,805,000		2,805,000
Net loss					(20,689,000)	(20,689,000)
Balances, December 31, 2001	24,892,989	191,901,000	(50,000)	(3,093,000)	(115,721,000)	73,037,000
Issuance of common stock by Employee Stock Purchase Plan	61,756	135,000				135,000
Issuance of common stock for services	17,162	31,000				31,000
Exercise of stock options	67,969	5,000				5,000
Common stock awarded to employees	226,003	245,000		(245,000)		—
Common stock reverted to the company	(42,126)	(145,000)		145,000		—
Credit for common stock options issued to non-employees		(12,000)				(12,000)
Payments on notes receivable			4,000			4,000
Amortization of deferred compensation				2,643,000		2,643,000
Net loss					(33,184,000)	(33,184,000)
Balances, December 31, 2002	25,223,753	192,160,000	(46,000)	(550,000)	(148,905,000)	42,659,000
Issuance of common stock by Employee Stock Purchase Plan	56,482	53,000				53,000
Exercise of stock options	57,167	39,000				39,000
Common stock awarded to employees	607,052	(21,000)		42,000		21,000
Common stock reverted to the company	(43,181)	(149,000)		149,000		—
Stock compensation expense for options issued to employees		379,000				379,000
Stock compensation expense for options issued to non-employees		80,000				80,000
Payments on notes receivable			22,000			22,000
Amortization of deferred compensation				359,000		359,000
Net loss					(25,293,000)	(25,293,000)
Balances, December 31, 2003	25,901,273	$192,541,000	$(24,000)	$ —	$(174,198,000)	$ 18,319,000

See accompanying notes to consolidated financial statements.

LARGE SCALE BIOLOGY CORPORATION

CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2003	2002	2001
Cash flows from operating activities:			
Net loss	$(25,293,000)	$(33,184,000)	$(20,689,000)
Reconciliation of net loss to net cash used in operating activities:			
Depreciation of property, plant and equipment	2,722,000	4,074,000	4,070,000
Amortization of intangible assets	1,099,000	1,888,000	1,822,000
Stock compensation expense	1,571,000	2,662,000	2,992,000
Impairment of goodwill	—	839,000	—
Impairment of property	3,598,000	433,000	—
Write-off of capitalized patent costs	389,000	396,000	—
Issuance of common stock for services	—	—	7,000
Loss on sale of equipment	156,000	—	—
Provision for doubtful accounts receivable	154,000	—	—
Interest received in excess of interest accrued	159,000	278,000	802,000
Changes in assets and liabilities:			
Accounts receivable	(83,000)	(131,000)	(7,000)
Prepaid expenses and other current assets	331,000	169,000	517,000
Other assets	70,000	143,000	207,000
Accounts payable	(364,000)	(747,000)	(118,000)
Accrued expenses	382,000	(399,000)	691,000
Deferred revenue and customer advances	(98,000)	(353,000)	(8,745,000)
Total adjustments	10,086,000	9,252,000	2,238,000
Net cash used in operating activities	(15,207,000)	(23,932,000)	(18,451,000)
Cash flows from investing activities:			
Purchases of marketable securities	(8,984,000)	(22,681,000)	(60,455,000)
Proceeds from matured marketable securities	23,665,000	32,287,000	79,900,000
Capital expenditures	(83,000)	(968,000)	(12,281,000)
Increase in patents and intellectual property licenses	(76,000)	(629,000)	(3,773,000)
Net cash provided by investing activities	14,522,000	8,009,000	3,391,000
Cash flows from financing activities:			
Proceeds from issuance of common stock	68,000	5,000	531,000
Proceeds from stockholder loan payments	22,000	4,000	15,000
Change in restricted cash	143,000	143,000	654,000
Principal payments on long-term debt	(49,000)	(46,000)	(2,115,000)
Net cash provided by (used in) financing activities	184,000	106,000	(915,000)
Net decrease in cash and cash equivalents	(501,000)	(15,817,000)	(15,975,000)
Cash and cash equivalents at beginning of year	8,238,000	24,055,000	40,030,000
Cash and cash equivalents at end of year	$ 7,737,000	$ 8,238,000	$ 24,055,000

See accompanying notes to consolidated financial statements.

LARGE SCALE BIOLOGY CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. The Company and Summary of Significant Accounting Policies

Large Scale Biology Corporation and its subsidiaries (collectively, the "Company", "we" or "our") is an integrated biotechnology company focusing on product development and biomanufacturing of vaccines, complex proteins and follow-on off-patent therapeutics. We are focusing our efforts on the following products:

- Aprotinin, a protease inhibitor used in medical, research and manufacturing applications and other follow-on off-patent biologics, including interferon alpha 2a and 2b, and granulocyte colony stimulating factor
- Alpha-galactosidase A for the treatment of Fabry disease, a lysosomal storage disorder
- Vaccines for human and animal healthcare, including antiviral and anticancer applications
- Lysosomal acid lipase for the reduction of plaque in arteries
- Diagnostic test based upon proprietary technology for detection of cancer and other diseases
- GRAMMR to shuffle and improve gene sequences

The Company's proprietary systems are supported by patents and patent applications. The Company's corporate offices and research and development are headquartered in Vacaville, California. The Company's biomanufacturing operation is located in Owensboro, Kentucky.

The Company incurred net losses of $25,293,000, $33,184,000 and $20,689,000 and negative operating cash flows of $15,207,000, $23,932,000 and $18,451,000 in the years ended December 31, 2003, 2002 and 2001, respectively. These negative cash flows were financed primarily by proceeds from the Company's IPO. If we are unable to generate significant revenues in 2004 or generate other potential sources of working capital including partnerships, mergers or sales of assets or technologies, the Company's operations may be adversely affected.

Basis of Consolidation—The accompanying consolidated financial statements include the accounts of Large Scale Biology Corporation and its subsidiaries. All intercompany balances and transactions have been eliminated.

Segment Reporting—The Company operates in one reportable segment.

Use of Estimates—The preparation of financial statements in accordance with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements and the reported revenue and expenses during the period. Actual results could differ from those estimates.

Cash and Cash Equivalents—We consider all highly liquid investments with original maturities of three months or less to be cash equivalents.

Marketable Securities—Marketable securities at December 31, 2002 consist of commercial paper, corporate and U.S. government agency notes and bank certificates of deposit all maturing within one year and are classified as held-to-maturity. The amortized cost of marketable securities at December 31, 2002 approximates fair value. There were no marketable securities at December 31, 2003 and no significant holding gains or losses for any of the periods shown. A certificate of deposit that is restricted as of use is reported separately from marketable securities as other assets (see Note 6).

Concentrations of Credit Risk—Revenues from various federal government agencies were 75% and 55% of our total revenues in 2003 and 2002, respectively. The National Institute of Environmental Health Sciences ("NIEHS"), of which its revenues were 59% and 31% of our total revenues in 2003 and 2002, respectively, terminated its contract with the Company as of December 31, 2003, for the government's convenience (see Note 3). Revenues from three different other customers were 11%, 17% and 85% of our total revenues in 2003, 2002 and 2001, respectively.

The Company's cash and cash equivalents, marketable securities and accounts receivable are monitored for exposure to concentrations of credit risk. Cash equivalents and marketable securities consist of high quality credit instruments and management regularly monitors their composition and maturities. Substantially all of the Company's accounts receivable are derived from revenue earned from customers located within the United States. Management monitors the amount of credit exposure related to accounts receivable on an ongoing basis and generally requires no collateral from customers. We maintain allowances for estimated probable losses, when applicable.

The following table summarizes the activity for the Company's allowance for accounts receivable:

	Balance at Beginning of Period	Additions	Deductions	Balance at End of Period
Year ended December 31, 2001 . . .	—	—	—	—
Year ended December 31, 2002 . . .	—	—	—	—
Year ended December 31, 2003 . . .	—	$154,000	—	$154,000

Fair value of Financial Instruments—The carrying amount of cash and cash equivalents, marketable securities, accounts receivable and accounts payable approximate fair value because of the short-term nature of these instruments. The fair value of debt is based upon current interest rates for debt instruments with comparable maturities and characteristics and approximates the carrying amount.

Property, Plant and Equipment—Property, plant and equipment is stated at cost. Depreciation is computed on a straight-line basis over the estimated useful lives of the assets, which are 3 to 10 years for machinery and equipment, the lease term for leasehold improvements and 30 years for buildings.

Computer Software—Software developed for internal research and development activities is expensed as incurred.

Intangible Assets—Our policies with respect to intangible assets are as follows:

- *Patents*—The legal costs of filing patent applications are capitalized if they relate to commercially viable technologies. Commercially viable technologies are those technologies that are projected to generate future positive cash flows in the near term. Legal costs associated with patents applications that are not determined to be commercially viable are expensed as incurred. Once patents are issued, capitalized costs are amortized over the shorter of the patent's statutory or estimated economic life, ranging from 5 to 20 years as of December 31, 2003.

- *Intellectual Property Licenses*—The Company pays license fees to individuals or other companies under licensing agreements. These agreements provide the Company with exclusive or non-exclusive rights to use specified technologies during the license periods. License fees are capitalized if the agreements relate to commercially viable technologies. Capitalized license fees are amortized over the estimated economic life of the specified technology, ranging from 2 to 5 years as of December 31, 2003.
- *Purchased intangibles*—Purchased intangibles relate to the Company's acquisition of the Germantown proteomics business and were amortized through January 2003.

Impairment of Long Lived Assets—The Company's long-lived assets include capitalized patents and intellectual property licenses and property and equipment related to our research facilities in California and Maryland and our biomanufacturing plant in Kentucky. We evaluate our long-lived assets for impairment in accordance with Statement of Financial Accounting Standard ("SFAS") No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets" whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable. If any of our long-lived assets are considered to be impaired, the amount of impairment to be recognized is equal to the excess of the carrying amount of the assets over the fair value of the assets (see Notes 3, 4, and 5).

Revenue Recognition—We currently receive revenues for sponsored research from commercial companies and government agencies. Funds received for sponsored research is typically non-refundable and not based upon performance objectives or customer acceptance. During the year ended December 31, 2003, 80% of revenues were for the reimbursement of research activities and recognized as the costs were incurred.

Research and Development—Research and development costs that are related to customer funded agreements are expensed as incurred and reported as costs of development agreements. Research and development costs not related to customer-funded agreements are expensed as incurred and reported as research and development expense.

Stock-Based Compensation—During 2003, the Company adopted Statement of Financial Accounting Standards No. 123 ("SFAS 123"), "Accounting for Stock-Based Compensation" effective as of January 1, 2003 for its stock-based employee compensation plans using the prospective recognition method under Statement of Financial Accounting Standards No. 148 ("SFAS 148"), "Accounting for Stock-Based Compensation-Transition and Disclosure, an amendment of SFAS 123." This method applies the recognition provisions of SFAS 123 to all employee stock awards granted, modified, or settled after January 1, 2003 and accordingly, recognized compensation expense for those issuances under our stock-based employee compensation plans. The fair values of stock options were estimated at the date of grant using the Black-Scholes option-pricing model and are being amortized over the vesting period of generally 3 years. For stock awards granted prior to January 1, 2003, compensation expense has not been recognized under SFAS 123, unless those stock awards were modified after January 1, 2003.

Prior to January 1, 2003, the Company accounted for stock options granted to employees and directors and other stock-based employee compensation plans using the intrinsic value method of accounting in accordance with Accounting Principles Board Opinion No. 25 ("APB 25"), "Accounting for Stock Issued to Employees" and related interpretations. As such, the Company

recognized compensation expense for stock options only if the quoted market value of the Company's common stock exceeded the exercise price of the option on the grant date. Any compensation expense realized using this intrinsic value method is being amortized over the vesting period of the option.

The following table presents the effect on net loss and net loss per share if we had applied the fair value recognition provisions of SFAS 123 to stock-based awards to employees:

	Year Ended December 31,		
	2003	2002	2001
Net loss as reported	$(25,293,000)	$(33,184,000)	$(20,689,000)
Stock-based employee compensation expense included in reported net loss for awards issued during 2003	1,296,000	—	—
Stock-based employee compensation expense determined using the fair value method for all awards	(5,042,000)	(4,428,000)	(5,423,000)
Pro forma net loss	$(29,039,000)	$(37,612,000)	$(26,112,000)
Net loss per share:			
Basic and diluted—as reported	$ (0.99)	$ (1.33)	$ (0.84)
Basic and diluted—pro forma	$ (1.13)	$ (1.51)	$ (1.06)

The fair values of employee stock options are estimated for the calculation of 2003 stock compensation expense and for the pro forma adjustments in the above table at the date of grant using the Black-Scholes option-pricing model with the following weighted-average assumptions during 2003, 2002 and 2001: expected volatility of 93%, 109% and 98%, respectively; average risk-free interest rate of 2.8%, 4.3% and 4.7%, respectively; initial expected life of six years; and no expected dividend yield and amortized over the vesting period of typically 3 to 4 years.

Stock options issued to non-employees as consideration for services provided to the Company have been and continue to be accounted for under the fair value method in accordance with SFAS 123, which requires that compensation expense be recognized for all such options.

Income Taxes—The Company accounts for income taxes using the asset and liability approach whereby deferred income tax assets and liabilities are recognized for the estimated future tax effects, based on current enacted tax laws, of temporary differences between financial and tax reporting for current and prior periods. Deferred tax assets are reduced, if necessary, by a valuation allowance if the corresponding future tax benefits may not be realized.

Comprehensive Income—There were no items of other comprehensive income or loss in any period presented and, therefore, comprehensive loss is the same as net loss for all periods presented.

Net Loss Per Share—Basic net loss per share is computed by dividing the net loss for the period by the weighted average number of common shares outstanding during the period. Diluted net loss per share is computed by dividing the net loss for the period by the weighted average number of common shares outstanding during the period, plus the potential dilutive effect of common shares issuable upon exercise or conversion of outstanding stock options and warrants during the period. The weighted average number of potentially dilutive common shares are 7,064 in 2003, 688,545 in 2002 and 839,154 in 2001. These shares were excluded from diluted loss per share because of their anti-dilutive effect.

Reclassifications—Certain 2002 amounts have been reclassified to conform to the 2003 presentation.

2. Subsequent Event

On March 8, 2004, we sold 5,169,682 shares of common stock at $1.58 a share and issued warrants to purchase 1,492,044 shares of common stock in a private placement with gross proceeds of approximately $8.2 million and net proceeds after expenses of approximately $7.5 million. The warrants include an anti-dilution provision in connection with any future issuance of our securities at a price below the $2.18 exercise price. However, the warrant shares cannot be issued at an exercise price below $1.984 per share. These funds combined with our existing resources, are expected to sustain our operations through 2004. We will require substantial additional working capital to continue our product development programs and to fund our future operations.

3. Wind Down of the Germantown Proteomics Business and Severance Benefits

The National Institute of Environmental Health Services ("NIEHS") contract with the Company was terminated for the Government's convenience after an agreed upon wind-down period ending on December 31, 2003. Revenues attributable to NIEHS were $2,117,000 and $809,000 in 2003 and 2002, respectively.

The NIEHS contract with the Company includes by reference Federal Acquisition Regulation ("FAR") clause 52.249-6, "Termination (Cost-Reimbursement)" that provides for claims for termination costs under the cost principles and procedures in FAR Part 31. No amounts have been recorded in 2003 for our claim of termination costs or any other costs under the contract except for the normal reimbursement of research activities recognized as revenues when these costs were incurred. The amount of the Company's claim has not yet been determined and may depend upon future events such as the timing of a Germantown property sublease. We expect that the Company's claim will be recognized as income in 2004 when the government has agreed to the settlement amount and the collection of the settlement is reasonably assured.

The Company is reviewing other proteomics business, pending prospects and its internal needs for proteomics tools in support of its research and development programs. The wind down of the Company's Germantown, Maryland 2-dimensional gel fee-for-service proteomics business resulted in impairment charges of $3,598,000 in 2003 that reduced the carrying value of property, plant and equipment (see Note 4). In addition, the Company recorded $1,401,000 of severance benefits during 2003 comprised of $1,079,000 recorded in the second quarter of 2003 related to the Company's reorganization and $322,000 recorded in the fourth quarter of 2003 related to

the Germantown wind down. The costs of these severance benefits were included in general and administrative expense. Accrued expenses at December 31, 2003 included $541,000 of these severance costs to be paid out in 2004.

The Company has a commitment to pay approximately $6.0 million under the Germantown, Maryland facility operating lease through December 31, 2010 that is included in the table of future non-cancelable minimum payments under operating leases in Note 9. The Company is currently seeking a sublease tenant.

4. Property, Plant and Equipment

	December 31,	
	2003	2002
Machinery and equipment	$ 17,326,000	$ 17,812,000
Leasehold improvements	4,539,000	7,640,000
Building	4,616,000	4,580,000
Land	373,000	373,000
	26,854,000	30,405,000
Accumulated depreciation	(18,226,000)	(15,540,000)
	$ 8,628,000	$ 14,865,000

In 2003, we determined that certain machinery and equipment and leasehold improvements were impaired, due to the wind down of the Company's Germantown, Maryland 2-dimensional gel fee-for-service proteomics business (see Note 3). The impairment charges of $3,598,000 represents the excess of the net book value of leasehold improvements, and machinery and equipment over an estimate of recoverable NIEHS contract termination costs, expected cash received from asset disposition, net book value of re-deployed assets and the discounted net expected cash flows of a property sublease. Impairment charges of $3,105,000 reduced the net carrying value of certain leasehold improvements to a fair value of $1,128,000 and an impairment charge of $493,000 reduced the net carrying value of certain machinery and equipment to a fair value of $750,000. The remaining cost of leasehold improvements will be expensed matching future income from a property sublease and recoverable amounts related to the NIEHS contract. The machinery and equipment will be re-deployed, sold or scrapped during the first half of 2004 and the related costs are included in property, plant and equipment at December 31, 2003 as the specific assets deemed held for sale have not yet been determined and the program to dispose of the assets had not yet been initiated at December 31, 2003.

In 2002, we determined that certain machinery and equipment, related to the Company's Germantown, Maryland operation, was permanently idle. As a result, we recognized an impairment charge of $433,000 to reduce these assets to an estimated net book salvage value of $350,000. These assets were deemed held for sale and included in prepaid and other current assets in the consolidated balance sheet at December 31, 2002. Subsequently, a loss on sale of equipment of $156,000 was recorded during 2003.

5. Intangible Assets

	December 31, 2003	December 31, 2002
Capitalized patent costs	$ 2,183,000	$ 2,500,000
Intellectual property licenses	3,264,000	3,664,000
Purchased intangibles	—	2,497,000
	5,447,000	8,661,000
Accumulated amortization	(2,373,000)	(4,175,000)
	$ 3,074,000	$ 4,486,000

Capitalized patent costs at December 31, 2003 include $1,179,000 relating to issued or allowed patents for which amortization has begun. The remaining amounts relate to pending patents for which amortization will begin when the patents are issued or allowed. In 2003 and 2002, we determined that certain patent applications, no longer possessed commercial viability or were abandoned since they were inconsistent with the Company's business development strategy. As a result, general and administrative expense included charges of $389,000 and $396,000 for the write-off of capitalized patent costs in 2003 and 2002, respectively. General and administrative expense included patent amortization charges of $99,000, $42,000 and $39,000 in 2003, 2002 and 2001, respectively.

Intellectual property licenses at December 31, 2003 are comprised of $2,150,000 paid to The Dow Chemical Company for worldwide rights to certain plant gene technologies, $614,000 paid to Plant Biosciences Limited for worldwide exclusive rights to specified technologies and $500,000 paid to Icon Genetics AG for the right to utilize specified technologies. Research and development expense included amortization of intellectual property licenses of $948,000, $1,003,000 and $383,000 in 2003, 2002 and 2001, respectively.

Amortization of goodwill and purchased intangibles in the consolidated statements of operations included $676,000 for the amortization of goodwill in 2001 and $52,000, $624,000 and $624,000 for the amortization of purchased intangibles in 2003, 2002 and 2001, respectively.

Excluding the $1,004,000 of patent cost of which amortization has not yet commenced, the following table presents future amortization of intangible assets:

2004	$ 533,000
2005	533,000
2006	426,000
2007	103,000
2008	101,000
Thereafter	374,000
Total amortization	$2,070,000

Goodwill

In connection with the acquisition of the Germantown proteomics business, the Company recorded goodwill equal to the excess of the fair value of the consideration given over the estimated fair value of the assets and liabilities received. The Company also allocated a portion of

the purchase price of the proteomics business to assembled workforce, an intangible asset. Effective January 1, 2002, the Company adopted SFAS No. 141, "Business Combinations" and SFAS No. 142, "Goodwill and Other Intangible Assets." The adoption of these new accounting standards resulted in the following changes in accounting:

- SFAS No. 141 does not recognize assembled workforce as an identifiable intangible asset. Accordingly, the carrying amount of assembled workforce as of December 31, 2001, equal to $115,000, was reclassified from other intangible assets to goodwill.
- SFAS No. 142 discontinued the amortization of goodwill effective January 1, 2002. Instead, the unamortized balance of goodwill must be tested for impairment annually, or sooner if indicators of potential impairment exist, based upon a fair value approach.

In accordance with SFAS No. 142, we performed an initial impairment test of goodwill as of January 1, 2002 and found no evidence of impairment. However, our annual impairment test of goodwill on December 31, 2002 indicated the goodwill balance was impaired as the fair value of the Germantown proteomics business was determined to be less than its carrying value. As a result, we recognized an impairment charge of $839,000, equal to the remaining balance of goodwill. We evaluated several factors to determine the fair value of the proteomics business including projected cash flows from the proteomics business and the significant decrease in the Company's market capitalization during 2002.

The following table presents the effect on net loss and net loss per share if we had excluded goodwill amortization:

	Year Ended December 31,		
	2003	2002*	2001
Net loss as reported	$(25,293,000)	$(33,184,000)	$(20,689,000)
Goodwill amortization	—	—	676,000
Pro forma net loss	$(25,293,000)	$(33,184,000)	$(20,013,000)
Net loss per share:			
Basic and diluted—as reported	$ (0.99)	$ (1.33)	$ (0.84)
Basic and diluted—pro forma	$ (0.99)	$ (1.33)	$ (0.81)

* Includes $839,000 charge for impairment of goodwill.

6. Other Assets

	December 31,	
	2003	2002
Restricted cash	$430,000	$573,000
Employee notes receivable	114,000	194,000
Deposits	26,000	16,000
	$570,000	$783,000

Restricted cash represents a certificate of deposit held as security for a facility lease.

7. Borrowings

	December 31, 2003	December 31, 2002
Note payable in the amount of $500,000, bearing 5% interest, payable through August 2008 in monthly installments of $5,000 and secured by the Owensboro biomanufacturing facility and certain equipment	$261,000	$310,000
Less current portion	(52,000)	(49,000)
Long-term debt	$209,000	$261,000

The following table presents future principal debt payments:

2004	$ 52,000
2005	54,000
2006	57,000
2007	60,000
2008	38,000
Total principle payments	$261,000

8. Dow Contract

The Company entered into a Collaboration and License Agreement with The Dow Chemical Company and its subsidiary, Dow AgroSciences LLC (collectively "Dow"), on September 1, 1998. The collaboration portion of the agreement ("Dow Collaboration") had a three-year term ending in August 2001. Under the Dow Collaboration, the Company received funding for sponsored genomics research and payments for technology access fees and milestone achievements. The research funding was not contingent on achievement of certain results. Accordingly, no obligation to repay any funded amounts or repurchase technology has been recorded. Revenues from Dow represented 85% of total revenues for 2001. The Dow Collaboration ended in August 2001. In October 2001, the Company received $3,395,000 from Dow as a final payment under the terms of the Dow Collaboration.

Technology Access Fees

In 1998, the Company received $10,000,000 from Dow in exchange for access to the Company's technologies and a warrant granted to Dow (the "Dow Warrant") to purchase 1,848,091 shares of the Company's common stock, subject to certain vesting provisions. Using the Black-Scholes option-pricing model, the Company determined that the fair value of the Dow Warrant was $1,392,000 on the issuance date and such amount was recorded as a warrant liability in 1998. The remaining technology access fee of $8,608,000 was recorded as deferred revenue and was recognized on a straight-line basis over the three-year term of the Dow Collaboration ending in August 2001. Amortized revenue of $1,916,000 was recorded during 2001.

Milestone Payments

In 1999, the Company received $20,000,000 from Dow for achievement of certain milestones specified in the Dow Collaboration. A portion of this amount was attributed to the fair value of the Dow Warrant shares vesting in 1999. Using the Black-Scholes option-pricing model, the Company determined that the fair value of the Dow Warrant vesting in 1999 was $3,411,000 and such amount was recorded as additional warrant liability in 1999. The remaining milestone payment amount of $16,589,000 was recorded as deferred revenue and was recognized on a straight-line basis from the date of completion of the milestones to the end of the Dow Collaboration in August 2001. The Company received $1,500,000 from Dow in 2000 for achieving an additional milestone and such amount was recorded as deferred revenue and amortized on the same basis as the earlier milestone payment. Amortized revenue of $6,519,000 was recorded in 2001.

Research Funding

Revenue related to research performed under the Dow Collaboration was $3,309,000 in 2001.

9. Commitments

The Company leases facilities under operating leases and incurred facility rental expenses of $1,877,000, $1,790,000 and $1,836,000 during 2003, 2002 and 2001, respectively. Additionally, the Company has research sponsorship agreements with major universities, government institutions or other companies whereby the Company funds specific projects of interest to the Company. Expenses under these agreements totaled $446,000, $1,434,000 and $2,240,000 during 2003, 2002 and 2001, respectively.

The following table presents future non-cancelable minimum payments under operating leases and research agreements:

	Operating Leases	Research Agreements
2004	$1,536,000	$289,000
2005	1,525,000	—
2006	1,578,000	—
2007	1,633,000	—
2008	1,690,000	—
Thereafter	1,985,000	—
	$9,947,000	$289,000

In addition to the future non-cancelable minimum payments above, certain of the research agreements require future aggregate payments of $765,000 if the agreements are not cancelled.

In January 2001, the Company entered into an agreement with Biosite Inc. whereby the Company originally committed to pay $6,760,000 over 14 months for the purchase of antibodies. Later in 2001, Biosite and Xoma Ltd. (and certain Xoma affiliates) sued each other over intellectual property issues. That litigation impacted work Biosite had agreed to do for the

Company under the agreement. Because of this litigation, the Company voided the agreement in January 2002. We have not paid and do not expect to pay any amounts to Biosite under the terms of the voided agreement.

The Company has patent license agreements with major universities that require the Company to pay royalties based on product sales, subject to minimum annual royalty amounts. These arrangements remain in effect until the expiration of all related patents or upon termination of the agreements by the Company. Each arrangement is cancelable by the Company upon ninety days notice without significant liability to the Company. Royalty payments were $125,000, $100,000 and $137,000 in 2003, 2002 and 2001, respectively. The Company's non-cancelable obligation related to royalty agreements at December 31, 2003 was $59,000.

10. Stockholders' Equity

Stock Issued

On November 1, 2001, an employee purchased 100,000 shares of common stock from the Company at a price of $3.45 per share, equal to the fair market value of the Company's stock on that date.

Warrants

In 2001, an employee was granted a warrant to purchase 250,000 shares of common stock. The warrant becomes exercisable in full if the quoted value of the Company's common stock, as reported on the NASDAQ National Market, equals an average of at least $6.84 for any consecutive 20-business-day period prior to February 15, 2006. The exercise price of the warrant is $5.13 per share and the warrant expires on February 14, 2012. We will recognize compensation expense of approximately $428,000 if and when the warrant becomes exercisable.

The Company reserved 1,848,091 shares of common stock for issuance upon the exercise of a warrant granted on September 1, 1998 to Dow in conjunction with the Dow Collaboration (see Note 8). The warrant was exercisable at $10.14 a share but was not exercised and expired on August 31, 2003.

The Company has reserved 43,983 shares of common stock for issuance upon the exercise of warrants granted during 1988. These warrants are exercisable at $1.59 per share and expire on August 9, 2005.

Employee Stock Awards

Effective July 1, 2002, cash compensation of certain employees of the Company was reduced and replaced by restricted common stock issued under the Company's 2000 Stock Incentive Plan. Those employees received quarterly awards of common stock equal to the reduction in cash compensation divided by the closing price of the Company's common stock on the last trading day of each quarterly period. The awarded shares are vested on July 1 of each year for awards issued during the previous four quarters. The Company maintains the right to repurchase the stock at the original issuance price. The Company's repurchase right lapses if the Company realizes certain positive operating cash flows during the six-months ending June 30, two years after vesting. On the following July 31, the Company either releases the awarded shares from escrow upon the expiration of the repurchase right or pays the original issuance price in cash upon the Company's exercise of the repurchase right.

In 2002, the Company issued 226,003 shares of common stock as stock awards and recorded deferred compensation of $245,000 and compensation expense of $41,000 following the provisions of APB 25. Of the $204,000 deferred compensation balance at December 31, 2002 related to stock awards, $162,000 was expensed during 2003 and the remaining $42,000 was reversed resulting in no deferred compensation balance at December 31, 2003 upon the Company's adoption of SFAS 123. In 2003, the Company issued 607,052 shares of common stock as stock awards and recorded total stock compensation expense for stock awards of $892,000 including the $162,000 mentioned above. The adoption of SFAS 123 resulted in stock awards being recorded as an accrued stock compensation liability in the amount of $708,000 at December 31, 2003.

Employee Stock Purchase Plan

The Company's Employee Stock Purchase Plan ("ESPP") allows employees to purchase shares of the Company's common stock through payroll deductions. The ESPP issued 56,482 and 61,756 shares in 2003 and 2002, respectively. At December 31, 2003, a total of 928,959 shares of common stock were reserved and available for issuance by the ESPP.

Employee Stock Options

Under the Company's 2000 Stock Incentive Plan (the "Plan"), the Company's employees, officers, directors and consultants may be granted options to purchase shares of the Company's common stock. Options granted under the Plan may be either incentive stock options or nonqualified stock options. Incentive stock options may be granted only to Company employees (including officers and directors who are also employees). Nonqualified stock options may be granted to Company employees, directors and consultants. The vesting period and exercise price of the stock options are determined by the Company's Board of Directors. Stock options granted under the Plan are exercisable over a ten-year period from the grant date and have vesting periods ranging from immediate vesting to four years. Incentive and nonqualified stock options granted under the Plan may be granted at exercise prices no less than 100% and 85%, respectively, of the fair value of the Company's common stock on the date of grant. However, an option granted to a 10% shareholder under the Plan shall be granted at an exercise price not less than 110% of the fair value of the Company's common stock on the date of grant. The Plan includes a net exercise provision whereby shares of the Company's common stock that are owned at least one year by options holders can be exchanged at fair market value to pay the option exercise price. Employees and consultants exchanged 70,617 and 8,141 shares of common stock under the net exercise provision during 2002 and 2001, respectively. No shares were exchanged in 2003.

The Company has reserved 9,275,307 shares of common stock for issuance under the Plan. At December 31, 2003, 2,216,238 shares of common stock were available for grant. Outstanding stock options are summarized as follows:

	Number of Options	Weighted Average Exercise Price
Outstanding, December 31, 2000	3,511,281	$ 7.87
Granted	3,391,900	5.42
Exercised	(105,307)	2.54
Forfeited	(387,983)	16.55
Outstanding, December 31, 2001	6,409,891	6.14
Granted	1,742,250	1.28
Exercised	(138,586)	2.05
Forfeited	(1,167,901)	6.29
Outstanding, December 31, 2002	6,845,654	4.96
Granted	1,259,500	1.09
Exercised	(57,167)	.68
Forfeited	(988,918)	4.11
Outstanding, December 31, 2003	7,059,069	4.42
Exercisable options:		
December 31, 2001	3,061,060	6.53
December 31, 2002	3,962,343	6.20
December 31, 2003	5,267,899	5.18

The weighted-average fair value of options granted was $0.81, $1.07 and $4.35 in 2003, 2002 and 2001, respectively. At December 31, 2003, consultants held 913,299 outstanding stock options.

The following table summarizes information about stock options outstanding and exercisable under the Plan at December 31, 2003:

	Outstanding Options			Exercisable Options	
Range of Exercise Prices	Number of Options	Weighted-Average Remaining Contractual Life	Weighted-Average Exercise Price	Number of Options	Weighted-Average Exercise Price
$0.56 to $2.33	2,535,705	8.87	$ 1.21	1,186,949	$ 1.27
$3.00 to $7.50	4,196,315	6.64	5.84	3,772,651	5.91
$8.01 to $22.50	327,049	4.51	11.07	308,299	11.25
	7,059,069	7.34	4.42	5,267,899	5.18

Stock Compensation

Stock compensation expense attributed to options issued to employees and directors during 2003 was $198,000. During 2003, two officers terminated their employment with the Company. The Company's Board of Directors accelerated vesting and extended the exercise date for options previously granted to purchase 525,000 shares of the Company's common stock at exercise prices ranging from $1.23 to $7.50. This modification of the terms of their stock options resulted in a stock compensation charge of $182,000 in 2003.

The Company granted options to consultants to purchase 15,000 and 65,000 shares of the Company's common stock in 2002 and 2001, respectively. No options were granted to consultants in 2003. The exercise prices per share for options granted were $1.46 in 2002 and ranged from $4.75 to $6.19 in 2001. The options have a 10-year life and vest over periods ranging from three to four years. The fair value of each option was estimated on the date of grant and revalued during the vesting period using the Black-Scholes option-pricing model with the following weighted-average assumptions during 2003, 2002 and 2001: expected volatility of 93%, 109% and 98%, respectively; risk-free interest rate of 3.8%, 4.3% and 5.2%, respectively; initial expected life of ten years; and no expected dividend yield. Stock compensation expense of $80,000 and $187,000 was recorded in 2003 and 2001, respectively, and a stock compensation credit of $12,000 was recorded in 2002 resulting from the decline in the price of the Company's common stock.

On November 1, 2001, the Company issued 200,000 shares of common stock to an employee, subject to the Company's right of reversion. In both 2003 and 2002, the Company's right of reversion lapsed for 100,000 shares as those shares vested. The Company recorded deferred compensation of $690,000 on the grant date based upon the fair market value of the Company's common stock of $3.45 per share. At each vesting date, the employee elected to revert a portion of the vested shares to the Company to settle minimum statutory payroll taxes. A total of 43,181 and 42,126 shares were reverted to the Company and deferred compensation was reduced by $149,000 and $145,000 in 2003 and 2002, respectively. Combined expenses for stock compensation and payroll taxes were $347,000, $142,000 and $201,000 in 2003, 2002 and 2001, respectively.

On December 31, 1999, the Company granted options to employees, officers and directors to purchase 1,545,000 shares of the Company's common stock. These options have exercise prices ranging from $6.67 to $7.50 per share, have a 10-year life and were fully vested as of December 31, 2002. Deferred compensation in the amount of $7,809,000 was recorded as the difference between the exercise price and the estimated fair value of the common stock as of December 31, 1999. The deferred compensation was amortized over the three-year vesting period. Stock compensation expense of $2,604,000 was recorded in both 2002 and 2001.

The Company issued 1,065 shares of common stock valued at $7,000 in 2001 to non-employees in exchange for consulting research services.

Stockholders' Notes Receivable

The Company's Board of Directors authorized the issuance of notes receivable prior to 2001, to allow salaried employees, who are not Company officers, to exercise stock options by borrowing the aggregate exercise price from the Company. These notes are recorded as a reduction of stockholders' equity.

11. Employee Benefit Plan

The Company sponsors a 401(k) defined contribution retirement plan covering all employees who meet certain eligibility requirements. The Company makes discretionary matching contributions equal to 25% (50% through June 2002) of employee contributions up to a maximum of 1.5% of an employee's compensation, subject to statutory limits. The Company's

2003 and 2002 reorganizations have decreased the number of employees participating in the plan resulting in a reduced contribution by the Company. The Company's contributions under this plan were $108,000, $221,000 and $264,000 in 2003, 2002 and 2001, respectively.

12. Income Taxes

The provision for income taxes differs from the amount computed by applying the statutory Federal income tax rate as follows:

	Year Ended December 31,		
	2003	2002	2001
Federal income tax benefit at statutory rate	(34.0)%	(34.0)%	(34.0)%
State income tax benefit, net of federal expense	(5.5)	(5.6)	(5.7)
Research and development credits	(2.7)	(2.0)	(4.3)
Change in valuation allowance for income taxes	41.6	40.9	43.6
Other	0.6	0.7	0.4
	0.0%	0.0%	0.0%

The significant components of net deferred income tax assets are:

	December 31,	
	2003	2002
Deferred tax assets:		
Net operating loss carryforwards	46,279,000	39,186,000
Tax credit carryforwards	8,430,000	7,766,000
Deferred compensation	4,527,000	3,798,000
Capitalized project costs	557,000	551,000
Other	3,303,000	1,439,000
Total deferred tax assets	63,096,000	52,740,000
Deferred tax liabilities—intangible assets	(743,000)	(904,000)
Valuation allowance	(62,353,000)	(51,836,000)
Net deferred income tax asset	$ —	$ —

At December 31, 2003, the Company had net operating loss carryforwards of $124,230,000 and $77,121,000 available to reduce future Federal and state taxable income, respectively. These net operating loss carryforwards expire between 2009 and 2023 for Federal income tax purposes and expire between 2005 and 2013 for state income tax purposes. The difference between the Federal and state net operating loss carryforwards is due to the California limitation on loss carryforwards (60%, 60% and 55% in 2003, 2002 and 2001, respectively) and the capitalization of certain research costs for state income tax purposes. Additionally, at December 31, 2003, the Company had research and other tax credit carryforwards of $5,432,000 and $4,542,000 available to reduce future Federal and state income taxes, respectively. These tax credits expire between 2004 and 2023 for Federal income tax purposes and have no date of expiration for state income tax purposes. A valuation allowance is provided when it is more likely than not that some portion of the deferred tax asset will not be realized.

The extent to which the net operating loss carryforwards can be used to offset future taxable income may be limited if changes in the Company's stock ownership exceed certain defined limits.

13. Supplemental Cash Flow Disclosures

In 2003, 2002 and 2001, the Employee Stock Purchase Plan issued 56,482, 61,756 and 48,433 shares of Company common stock, valued at $53,000, $135,000 and $389,000, respectively, to employees.

In 2002, the Company recorded deferred compensation of $245,000 related to stock granted to employees. The Company adopted SFAS 123 in 2003, which resulted in the reversal of $42,000 of deferred compensation during 2003.

14. Related Party Transactions

In 1999, the Company entered into a license agreement with Icon Genetics Inc., an affiliate of Icon Genetics AG ("Icon") and the International Institute of Cell Biology, National Academy of Sciences of Ukraine (the "Institute"). The Company's Chairman of the Board of Directors serves as Chairman of the Supervisory Board of Icon. The license provides the Company an exclusive, worldwide license to specified technology for a paid license fee of $300,000. The Company was also granted a worldwide, non-exclusive license to specified technology for a 2% royalty on the sale of products developed with such technology. An additional $200,000 was paid by the Company upon achievement of milestones specified in the license agreement. In 2000, the Company entered into a one-year research services agreement with Icon that provided for cumulative payments of $200,000 to Icon. In 2001, the Company entered into another license agreement with Icon for the worldwide, non-exclusive license to specified technology for a paid license fee of $500,000. Under these agreements, the Company paid a combined total of $537,500 in 2001 to Icon Genetics Inc., Icon and the Institute.

In 1999, pursuant to an employment agreement with a founder of the Germantown proteomics business, the Company paid the employee $500,000 over two years for a five-year non-compete agreement. In addition, the Company entered into a license and consulting agreement with the employee covering certain biochip technology developed by him. The license is a worldwide, exclusive, non-royalty bearing license to the biochip technology. This agreement required monthly payments of $4,000 and $6,667 for consulting services over two years and for license fees over five years, respectively. The balance payable of the license fee was accelerated in June 2002 in conjunction with the employee's termination from the Company. Expenses related to these agreements were $173,000 and $188,000 in, 2002 and 2001, respectively.

Two of the Company's former directors are managing directors of Technology Directors, Inc. ("TDI"). In 1998, the Company entered into a consulting and business development arrangement with TDI whereby TDI provided management advisory services to the Company. Compensation received by TDI for the management advisory services included a fee based upon amounts received by the Company from Dow under a collaboration agreement (see Note 8). Expenses related to this agreement were $66,000 in 2001.

15. Quarterly Results of Operations (Unaudited)

The following table presents the Company's 2003 and 2002 quarterly results of operations:

	Three Months Ended			
	December 31	September 30	June 30	March 31
2003				
Revenues	$ 621,000	$ 1,192,000	$ 903,000	$ 854,000
Loss from operations	(7,171,000)	(4,339,000)	(6,255,000)	(7,705,000)
Net loss	(7,145,000)	(4,306,000)	(6,207,000)	(7,635,000)
Net loss per share—basic and diluted	(0.28)	(0.17)	(0.24)	(0.30)
2002				
Revenues	$ 997,000	$ 710,000	$ 490,000	$ 425,000
Loss from operations	(7,423,000)	(6,920,000)	(9,760,000)	(9,771,000)
Net loss	(7,320,000)	(6,764,000)	(9,554,000)	(9,546,000)
Net loss per share—basic and diluted	(0.29)	(0.27)	(0.38)	(0.38)

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 29, 2003.

LARGE SCALE BIOLOGY CORPORATION

By: /s/ KEVIN J. RYAN
Kevin J. Ryan
President and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this Report has been signed below by the following persons, on behalf of the Registrant and in the capacities indicated on March 29, 2003.

Name	Title
/s/ KEVIN J. RYAN **Kevin J. Ryan**	President and Chief Executive Officer (Principal Executive Officer)
/s/ RONALD J. ARTALE **Ronald J. Artale**	Senior Vice President, Chief Operating Officer and Chief Financial Officer (Principal Financial Officer)
/s/ MICHAEL D. CENTRON **Michael D. Centron**	Vice President, Finance and Administration (Principal Accounting Officer)
/s/ ROBERT L. ERWIN **Robert L. Erwin**	Chairman of the Board
/s/ MARVYN CARTON **Marvyn Carton**	Director
/s/ BERNARD I. GROSSER **Bernard I. Grosser, M.D.**	Director
/s/ SOL LEVINE **Sol Levine**	Director

Exhibit Index

Exhibit Number	Exhibit Title or Description
4.1	Securities Purchase Agreement dated March 8, 2004 by the registrant and investors.
4.2	Registration Rights Agreement dated March 8, 2004 by the registrant and investors.
4.3	Common Stock Purchase Warrant agreements to purchase 1,492,044 shares of common stock dated March 8, 2004 by the registrant to investors.
4.4	Amendment to warrant as of March 8, 2004 by the registrant and investors.
21.1	Large Scale Biology Corporation Subsidiaries.
23.1	Independent Auditors' Consent.
31.1	Certification of the Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of the Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification of the Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification of the Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

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Large Scale Biology Corporation
Company Information

Officers

Kevin J. Ryan
President and Chief Executive Officer

Ronald J. Artale
Senior Vice President, Chief Operating Officer and Chief Financial Officer

Michael D. Centron
Vice President, Finance and Administration

Laurence K. Grill, Ph.D.
Senior Vice President, Research and Chief Scientific Officer

John S. Rakitan
Senior Vice President and General Counsel

Daniel Tusé, Ph.D.
Vice President, Business Development

Board of Directors

Robert L. Erwin
Chairman of the Board

Kevin J. Ryan
President and Chief Executive Officer

Marvyn Carton
Executive Vice President and Director (Retired), Allen & Company

Bernard I. Grosser, M.D.
Professor and Chairman, Department of Psychiatry
University of Utah School of Medicine

Sol Levine
Former President, Revlon, Inc.

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Investor Relations
Additional copies of this annual report are available without charge upon request from LSBC Investor Relations.
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e-mail: irinfo@lsbc.com

This annual report, as well as other financial information, are also available on our web site at www.lsbc.com (select Investor Info).

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Transfer & Trust Co.
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Phone: 800-937-5449
www.amstock.com

Annual Meeting
Our annual meeting of stockholders will be held on Wednesday, May 26, 2004 at 10 a.m. local time, at Travis Credit Union, Room B,
One Travis Way
Vacaville, California