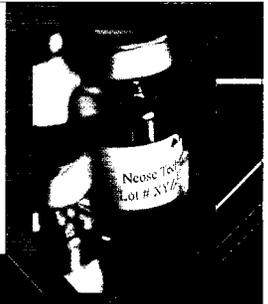




A YEAR OF PROGRESS



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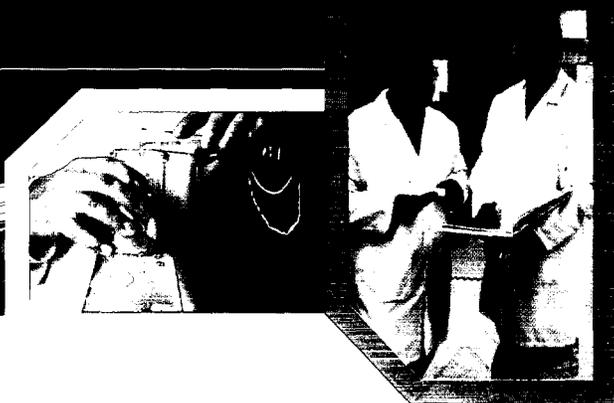
NEOSE TECHNOLOGIES, INC.

LESS THAN TWO YEARS AGO, NEOSE MADE A COMMITMENT TO USE ITS GLYCOADVANCE™ AND GLYCOPEGYLATION™ TECHNOLOGIES TO DEVELOP IMPROVED, NEXT-GENERATION VERSIONS OF CURRENTLY MARKETED THERAPEUTIC PROTEINS FOR THE TREATMENT OF CHRONIC AND LIFE-THREATENING DISEASES. DURING 2003, BASED ON PROMISING RESULTS FROM VARIOUS PROOF OF CONCEPT STUDIES IN MULTIPLE EXPRESSION SYSTEMS ON MANY PROTEINS, WE SELECTED OUR FIRST TWO PROPRIETARY PROTEINS, GLYCOPEG-EPO AND GLYCOPEG-GCSF, AND BEGAN THE PROCESS OF ADVANCING THOSE CANDIDATES TOWARD CLINICAL DEVELOPMENT. OUR WORK UNDER A RESEARCH AND DEVELOPMENT COLLABORATION WITH NOVO NORDISK ENTERED INTO DURING 2002 LED TO LICENSE AGREEMENTS FOR THE DEVELOPMENT OF THREE NEXT-GENERATION PROTEINS. IN ADDITION, WE ENTERED INTO RESEARCH AND DEVELOPMENT COLLABORATIONS TO EXPLORE THE PROMISE OF TWO OTHER PROTEINS. WITH A TOTAL OF SEVEN PROTEINS IN OUR DEVELOPMENT PROGRAMS, ONE OF WHICH IS EXPECTED TO ENTER CLINICAL DEVELOPMENT IN LATE 2004, WE ARE MAKING PROGRESS TOWARD THE COMMERCIAL REALIZATION OF THE PROMISE IMPLICIT IN OUR TECHNOLOGY.

CERTAIN STATEMENTS IN THIS ANNUAL REPORT CONSIST OF FORWARD-LOOKING STATEMENTS THAT INVOLVE RISKS AND UNCERTAINTIES. FOR A DISCUSSION OF THESE RISKS AND UNCERTAINTIES, ANY OF WHICH COULD CAUSE OUR ACTUAL RESULTS TO DIFFER FROM THOSE CONTAINED IN THE FORWARD-LOOKING STATEMENTS, SEE OUR FILINGS WITH THE U.S. SECURITIES AND EXCHANGE COMMISSION, PARTICULARLY THE SECTION ENTITLED "FACTORS AFFECTING THE COMPANY'S PROSPECTS" IN OUR ANNUAL REPORT ON FORM 10-K FOR THE YEAR ENDED DECEMBER 31, 2003.

NEOSE, GLYCOADVANCE AND GLYCOPEGYLATION ARE TRADEMARKS AND SERVICEMARKS OF NEOSE TECHNOLOGIES, INC.





OUR 2003 ACCOMPLISHMENTS

PROPRIETARY PRODUCT PROGRAM

GLYCOPEG-EPO

- > ESTABLISHED PROOF OF CONCEPT & IDENTIFIED EXPRESSION SYSTEM
- > IDENTIFIED SPECIFIC PRODUCT CONCEPT
- > DEFINED INITIAL PROCESS
- > ACHIEVED PROTEIN EXPRESSION LEVELS ADEQUATE TO SUPPORT AT LEAST PHASE I, II

GLYCOPEG-GCSF

- > ESTABLISHED PROOF OF CONCEPT
- > IDENTIFIED EXPRESSION SYSTEM
- > INITIATED PROCESS DEVELOPMENT

STRATEGIC ALLIANCES

NOVO NORDISK A/S — SIGNED TWO RESEARCH, DEVELOPMENT AND LICENSE AGREEMENTS TO USE OUR GLYCOPEGYLATION TECHNOLOGY TO DEVELOP IMPROVED VERSIONS OF THREE PROTEINS WITHIN NOVO'S THERAPEUTIC AREAS, ONE OF WHICH IS CURRENTLY MARKETED BY NOVO.

THE FINANCIAL TERMS INCLUDED A \$4.3 MILLION UPFRONT PAYMENT, \$51.3 MILLION IN POTENTIAL MILESTONES, ROYALTIES ON PRODUCT SALES AND FULL FUNDING FOR OUR RESEARCH AND DEVELOPMENT ACTIVITIES.

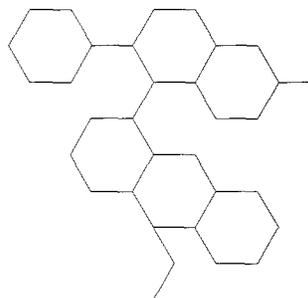
SANDOZ, A NOVARTIS COMPANY — SIGNED COLLABORATION AGREEMENT TO USE OUR TECHNOLOGIES WITH A RECOMBINANT PROTEIN MANUFACTURED AND SUPPLIED BY SANDOZ.

RENTSCHLER BIOTECHNOLOGIE GMBH — SIGNED COLLABORATION AGREEMENT TO USE OUR TECHNOLOGIES TO DEVELOP A THERAPEUTIC PROTEIN USING MATERIAL SUPPLIED BY RENTSCHLER.

TECHNOLOGY EXPANSION

WE IDENTIFIED A NEW APPLICATION OF OUR TECHNOLOGY THAT ALLOWS US TO INITIATE GLYCOSYLATION ON PROTEINS EXPRESSED IN BACTERIAL SYSTEMS. THIS ALLOWS US TO TARGET ADDITIONAL PROTEINS AND GIVES US THE FLEXIBILITY TO USE LESS EXPENSIVE BACTERIAL EXPRESSION SYSTEMS FOR PROTEINS THAT HAVE TRADITIONALLY BEEN EXPRESSED IN MAMMALIAN SYSTEMS.





LETTER TO STOCKHOLDERS

EACH YEAR THAT I WRITE THIS LETTER TO STOCKHOLDERS, I FIND THAT I STRUGGLE TO COMMUNICATE HOW I FEEL ABOUT THE COMPANY AND ITS PROSPECTS WITHOUT TIPPING THE BALANCE IN EITHER THE DIRECTION OF "BOOSTERISM" OR "BANALITY." HOW DO I MAKE YOU UNDERSTAND THE OPPORTUNITIES AND CHALLENGES I BELIEVE WE FACE AS A BIOTECHNOLOGY ENTERPRISE, ALONG WITH THE PROGRESS WE HAVE MADE IN THE LAST TWO YEARS? PERHAPS THE BEST WAY TO DO SO IS BY EXAMINING HOW WE ARE DOING RELATIVE TO A FEW APHORISMS THAT HIGHLIGHT THE MANAGEMENT PRINCIPLES THAT WE ARE SEEKING TO DEPLOY IN SUPPORT OF BUILDING SHAREHOLDER VALUE FOR INVESTORS IN NEOSE TECHNOLOGIES.

APHORISM #1: IF YOU DON'T KNOW WHERE YOU ARE GOING, ANY ROAD WILL GET YOU THERE.

Strategy is crucial to the success of any biotech enterprise. A plan that does not delineate targets of opportunity, allocate resources among targets, and measure progress against objective milestones carries with it little likelihood of success, even if the technology is very promising. For this reason, I am pleased to report to you that the management of Neose is more committed than ever to the business plan we articulated in the spring of 2002.

In 2003, worldwide sales of biologic products amounted to some \$39 billion. Over the next decade, patents on very important drugs that have driven the growth of the segment, drugs like erythropoietin (EPO), granulocyte colony stimulating factor (G-CSF), interferon-alpha and interferon-beta, will begin to lose their patent protection in key jurisdictions. For a company like Neose, which is committed to the development of innovative and improved formulations of these drugs using our GlycoAdvance and GlycoPEGylation technologies, this means that a variety of sources of the native protein may become available without having to secure a license from the pioneer company. In 2003, this meant that we were able to commit to an internally developed source of erythropoietin (manufactured in insect cells) as the basis of our development of an improved product (GlycoPEG-EPO). Similarly, our

research and development collaborations with Sandoz and Rentschler Biotechnologie have secured important sources of protein for the early development activities on two additional proteins from parties not currently involved in the marketing of the protein.

At the same time, market dynamics in key glycoprotein segments continue to demonstrate that the basic technology strategy we are employing (using GlycoAdvance and GlycoPEGylation to optimize the pharmacokinetics of targeted glycoproteins) has significant potential for market penetration. By the end of 2003, longer-acting forms of EPO and G-CSF were selling at an annualized rate of \$2 billion and \$1.5 billion, respectively, in the fourth quarter.

Hence, you see the reason we believe that the strategy we identified in the spring of 2002 remains robust and promising as we move into 2004.

APHORISM #2: IT IS EASIER TO SAY WHERE YOU EXPECT TO BE IN FIVE YEARS THAN IT IS TO SAY WHERE YOU WILL BE IN A YEAR.

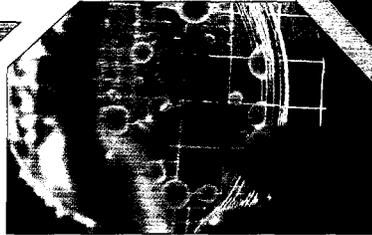
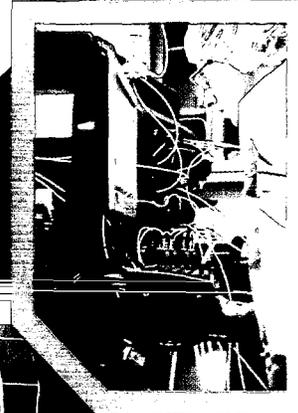
Strictly speaking, this aphorism is not quite true. It is very difficult to say what a company will look like in five years, but its real meaning lies in the fact that few people will remember in five years how far a prediction may have drifted. They will



ACHIEVING OUR OBJECTIVES

2003 _ PROGRESS REPORT

- LEAD EPO CANDIDATE SELECTED ✓ MONOANTENNARY, GLYCOPEGYLATED
- EPO EXPRESSION SYSTEM SELECTED ✓ BACULOVIRUS
- SECOND PROPRIETARY PROTEIN SELECTED ✓ GLYCOPEG-GCSF
- NEW APPLICATION OF TECHNOLOGY IDENTIFIED ✓ INITIATE GLYCOSYLATION IN BACTERIALLY-EXPRESSED PROTEINS
- BUSINESS DEVELOPMENT TRANSACTIONS ✓ NOVO NORDISK, SANDOZ, RENTSCHLER BIOTECHNOLOGIE



remember whether you have achieved your goals over a year. In other words, while people seldom comment on the accuracy of a long-term weather forecast, they will certainly remember when they are caught in a storm with no umbrella when the forecast was for bright sunshine.

For a biotech company like Neose, that means that no matter how well reasoned the strategic business plan may be, in the absence of day-by-day execution, it will ultimately prove to be hollow. It is for that reason that I am pleased to tell you that Neose fulfilled substantially all of its near-term objectives in 2003. On the product development front, we made substantial progress with our GlycoPEG-EPO candidate. We selected the development candidate, selected the expression system, defined the manufacturing process and began to manufacture material for our stability and toxicology studies, all in preparation for an IND later this year. We were also able to fulfill our objective of identifying a second proprietary protein, using new technology developed at Neose. A long-acting G-CSF, or GlycoPEG-GCSF, has been identified as our second proprietary protein, and it was developed using a new version of our technology. Now, we can GlycoPEGgylate proteins expressed in bacterial systems such as *E. coli*, which hitherto would have been impossible. The upshot is that in fulfilling our proprietary protein objectives in 2003, we have now targeted next-generation proteins that will compete in segments comprising \$10.6 billion in sales in 2002.

Key objectives for Neose in 2003 also included our desire to extend the application of our next-generation protein technology to proteins that would be developed by partners. As a result, we were very pleased that our collaboration with Novo Nordisk matured to a full agreement covering three proteins (one currently marketed by Novo Nordisk). The terms of the agreement included an initial upfront payment of \$4.3 million, potential milestones through licensure of \$51.3 million, and

ongoing royalty rates. In addition, Novo Nordisk will provide collaborative research revenues that will offset all costs incurred by Neose in support of these projects. We are extraordinarily pleased to have Novo Nordisk as a partner, and look forward to expeditious development of the subject proteins.

Finally, in addition to the transaction with Novo Nordisk, we were pleased to announce two research collaborations with Sandoz and Rentschler Biotechnologie. These two agreements ensure that we will have sources of two additional proteins for product development and commercialization. If successful, they could serve as the platform for further partnerships or proprietary protein development programs.

In sum, while 2003 was a year in which we strengthened our commitment to our strategic plan, and our strategic vision was reinforced by macro trends, we also were able to achieve the objectives we set for ourselves in 2003. If we have not yet achieved our final developmental objectives, the way stations on our path were very encouraging.

APHORISM #3: A PLAN WITHOUT A CONTINGENCY IS NOT A PLAN.

Development and commercialization of new drugs is inherently risky, as is the development of next-generation proteins. These risks are laid out in significant detail in our Annual Report on Form 10-K, and they force upon us the realization that in our business, not everything will necessarily work out as we have planned. Since drugs are developed by focus, and not by dabbling, young companies like Neose often face a dilemma. If they focus all their energy on a single product, they gain in focus, but recovery can be very difficult if something goes seriously wrong. On the other hand, if young companies try to build too many contingencies into their plans, focus is lost, costs can increase and delays become more likely. A solid

response to this dilemma is the *sine qua non* of management of a biotechnology company. Neose's response to this dilemma was articulated in 2003, and, I believe, illustrates the robust potential of our technology and strategy.

Of the approximately 25 proteins each with current sales over \$50 million, we selected seven for further study. To begin with, we understood that the critical early-stage developmental step was to ensure that we industrialized (that is, made at pilot plant scale in a cGMP environment) the enzymes and reagents necessary to remodel existing proteins into "next-generation" proteins. If each protein we evaluated required us to produce entirely new enzymes and reagents, the cost of a broad-based effort would have been economically and managerially prohibitive. However, by selecting GlycoPEG-EPO and GlycoPEG-GCSF as our initial proprietary proteins, we have committed in these two projects to the development of the enzyme and reagent platforms that would be required for all seven proteins being evaluated. In some ways, this approach is analogous to the automobile manufacturer who uses the same chassis for the manufacture of multiple models. Hence, while we remain optimistic about the progress of our two proprietary protein programs, if something unexpected transpired with one or the other, we have built in contingency plans without diluting our focus. From the same enzyme and reagent platform, we can attack all seven proteins, which comprised \$18.1 billion in sales in 2002, without substantially diluting our early development focus.

Of course, a key part of the developmental challenge in next-generation proteins is also a source of GMP protein. Here, too, we have put in place a variety of potential contingencies. In the case of GlycoPEG-EPO, we are developing our own protein for at least the early phases of clinical development; in the case of the Novo Nordisk products, they will supply the proteins. In the case of the remaining three proteins, we have not yet finally decided which source we will use, but as the collaborations with Sandoz and Rentschler suggest, we have begun to make progress in sourcing them as well.

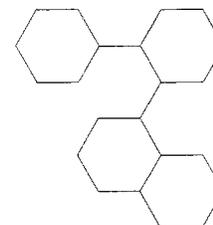
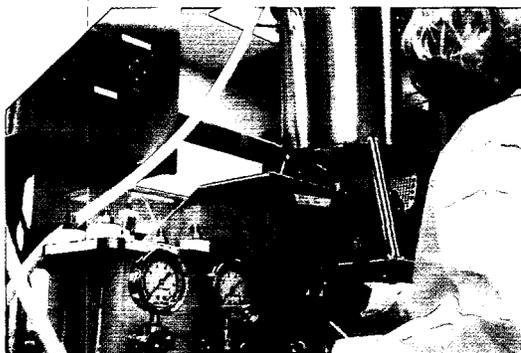
The key conclusion is that because of the unique dimensions of our proprietary approach to the development of next-generation proteins, a young company like Neose was able to continue its focus on rapid development of its lead candidates without eschewing the need for contingencies.



There is much more I could say about 2003. We continued to strengthen our development organization through the recruitment of talented and experienced drug development professionals; we committed to the expansion of our drug development facilities; we were successful in raising the necessary capital to sustain our next generation strategy through two equity offerings and the judicious use of debt and equipment leasing related to our physical assets. More than anything, however, I want to stress that we made progress in implementing the managerial principles highlighted above and did so in a way to lay the foundation for the realization of key objectives in 2004. This time next year, if we achieve the objectives we have set for ourselves, we will have our first product in the clinic, and another on the verge of going into the clinic; we will have also significantly expanded our web of commercial partnerships or licenses. In short, while the core technology will not have changed substantively, we will be a very different Neose. I look forward to continuing the dialog with you in my letter next year.

Sincerely,

C. BOYD CLARKE
PRESIDENT AND CHIEF EXECUTIVE OFFICER



TECHNOLOGIES THAT FUEL OUR PROGRESS

Many of the protein drugs currently on the market will begin to lose patent exclusivity over the next decade or so. A significant opportunity exists for companies with technology to develop competitive, next-generation products. Neose intends to use its GlycoAdvance and GlycoPEGylation technologies to participate in that opportunity.

GLYCOADVANCE

For several years, we have been using GlycoAdvance to modify the carbohydrate structures on glycoproteins. Currently, recombinant glycoprotein drugs are most often produced in mammalian cell culture expression systems, primarily Chinese hamster ovary (CHO) cells. Carbohydrates are added to these proteins during the process of expression. CHO cells, and many other expression systems used for commercial manufacturing of proteins, tend to produce protein molecules with incomplete or inconsistent carbohydrate structures. In the human body, these incompletely glycosylated proteins may be cleared too rapidly, break down too rapidly, and stimulate unwanted antibody responses. Conventional approaches to improving the glycosylation of recombinant protein drugs, such as changing expression cell types, re-engineering the protein, and modifying cell culture conditions or media, are time consuming and frequently provide only partial solutions. When a protein is inconsistently glycosylated, additional purification may be required to remove the incompletely glycosylated drug molecules from the desired drug product, resulting in lower manufacturing yields and increased expense.

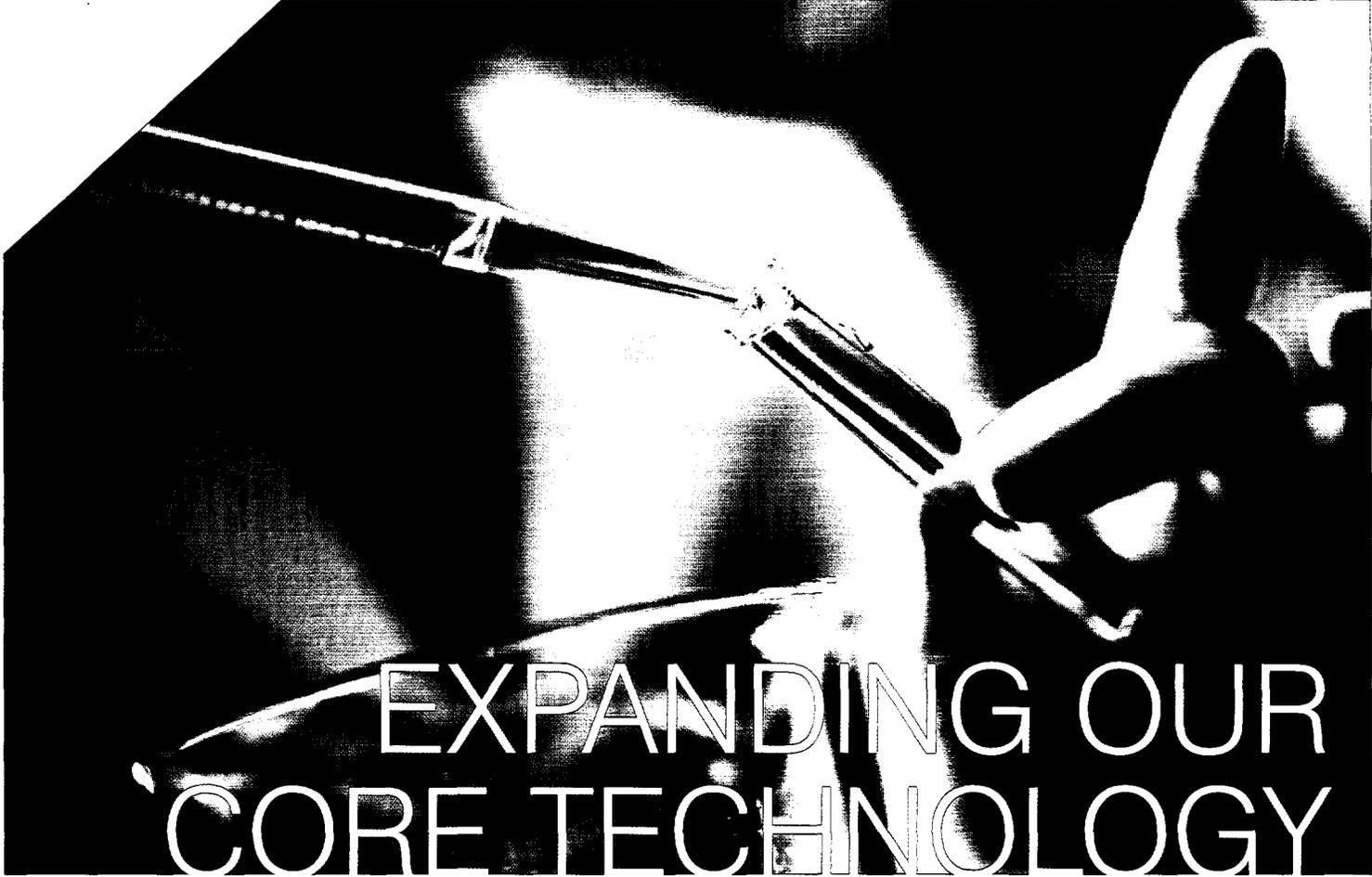
During 2003, we expanded the application of our GlycoAdvance technology to proteins that are not naturally glycosylated, as well as to proteins like G-CSF that may be expressed in bacteria, an expression system that fails to add sugars at natural glycosylation sites. For the first time, we are able to employ enzymes to initiate

glycosylation at engineered or natural acceptor sites on such proteins and to further elaborate these carbohydrate structures with natural or modified sugar units. Using our GlycoAdvance technology to attach and modify carbohydrate structures, we have been able to demonstrate with several drug candidates a prolonged drug effect in animals.

GLYCOPEGYLATION

Common protein drug delivery problems include poor solubility and stability, proteolysis (rapid degradation by proteases), rapid clearance, and immunogenicity. For some proteins, one approach to these problems has been conventional chemical pegylation — the attachment of the large, water-soluble polymer, polyethylene glycol (PEG), directly to the amino acid backbone of the protein. Pegylation increases the effective size of the drug and in some cases improves its solubility, stability, half-life and immunogenicity profile. For some protein drugs, chemical pegylation is ineffective. A possible explanation is that the sites for the attachment of PEG occur at positions where the bulky PEG molecules block access to the active site on the protein or alter the conformation of the protein. This may diminish or eliminate drug activity.

Our GlycoPEGylation technology enables us to attach a sugar molecule linked to PEG to the ends of carbohydrate structures, rather than attaching PEG directly on the protein backbone. Using enzymes, we are able to do this efficiently and selectively. By specifically linking PEG to carbohydrate structures that are remote from the protein's active site, GlycoPEGylation may preserve the bioactivity of the drug and extend its half-life. We believe that significant clinical benefits may be achieved through the application of our GlycoPEGylation technology to proteins.



EXPANDING OUR CORE TECHNOLOGY

DURING 2003, WE DEVELOPED A NEW APPLICATION OF OUR GLYCOADVANCE TECHNOLOGY THAT INCREASES THE NUMBER OF PROTEINS FROM WHICH WE CAN SELECT DEVELOPMENT CANDIDATES AND GIVES US EVEN GREATER FLEXIBILITY IN OUR CHOICE OF EXPRESSION SYSTEM.

DEVELOPING COMPETITIVE, NEXT-GENERATION PROTEINS

PROPRIETARY PRODUCT DEVELOPMENT PROGRAM

		GlycoPEGylate Develop several constructs for evaluation using our GlycoAdvance reagents to build out sugar structures in varying patterns and attaching various molecular weights of polyethylene glycol (PEG)	PK Evaluation Evaluate our constructs in animal models to establish pharmacokinetic profile equal to or better than currently marketed protein
STRATEGY: Develop through Phase II, if necessary, to realize value.	GlycoPEG-EPO For the treatment of anemia associated with oncology chemotherapy, end-stage renal disease and chronic renal insufficiency		
	GlycoPEG-GCSF For the treatment of neutropenia, a serious decrease in neutrophils (a type of white blood cell) associated with oncology chemotherapy		

PARTNER/LICENSING PROGRAM

STRATEGY: License our technology to partners for life cycle management of their products. Early outlicensing of next-generation proteins for which we have established proof of concept.	Novo Nordisk 1 Undisclosed protein, currently marketed by Novo Novo Nordisk 2 Undisclosed, next-generation protein Novo Nordisk 3 Undisclosed, next-generation protein	 <p>MARKET OPPORTUNITY* Multi-billion</p>
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*Based on 2002 sales.

By focusing on the development of improved versions of currently marketed proteins with proven safety and efficacy, we believe we are eliminating some of the risks associated with the development of novel proteins.



<i>in vitro/in vivo activity</i>	Candidate selection	IND	
Establish that our constructs retain their pharmacological activity in standard assays and/or animal models	Determine which construct to move forward into development based on PK and activity study results	File investigational new drug application with regulatory authority	
			IND planned Q3 '04
			MARKET OPPORTUNITY* \$10.6 B
			IND planned Mid '05

EXPLORATORY PROGRAM

<p>STRATEGY: Ensure a source of protein for development.</p> <p>Proceed to co-development with collaborator, license to another company or retain as backup for proprietary development.</p>	<p>Sandoz collaboration Undisclosed, currently marketed protein manufactured and supplied by Sandoz</p>	<p>MARKET OPPORTUNITY* \$5.5 B</p>
	<p>Rentschler collaboration Undisclosed, currently marketed protein manufactured and supplied by Rentschler</p>	



FOCUSED ON CONTINUED GROWTH IN 2004

OUR ACHIEVEMENTS IN 2003 GIVE US A STRONG FOUNDATION FOR GROWTH IN 2004.
THAT GROWTH WILL BE REALIZED BY MEETING THE FOLLOWING OBJECTIVES:

2004 _ OBJECTIVES	ESTIMATED TIMING
SUBMIT IND FOR GLYCOPEG-EPO	Q3_'04
INITIATE CLINICAL TRIALS FOR GLYCOPEG-EPO	Q4_'04
COMPLETE SELECTION OF GLYCOPEG-GCSF DEVELOPMENT CANDIDATE	Q2_'04
FINALIZE GMP PROCESS FOR GLYCOPEG-GCSF	Q4_'04
MEET DEVELOPMENT REQUIREMENTS WITH NOVO NORDISK	Q3_'04
ESTABLISH PRODUCT PROFILES AND COMPLETE PROOF OF CONCEPT ON TWO ADDITIONAL PROTEINS	Q2_'04
ENTER INTO AT LEAST TWO LICENSE AGREEMENTS/COMMERCIAL PARTNERSHIPS ON NEXT-GENERATION PROTEINS	Q1-Q4_'04



FINANCIAL SECTION

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SELECTED FINANCIAL DATA

The following Statements of Operations and Balance Sheet Data for the years ended December 31, 1999, 2000, 2001, 2002, and 2003, and for the period from inception (January 17, 1989) through December 31, 2003, are derived from our audited financial statements. The financial data set forth

below should be read in conjunction with the sections of this Annual Report entitled "Management's Discussion and Analysis of Financial Condition and Results of Operations," and the financial statements and notes included elsewhere in this Annual Report.

(in thousands, except per share data)	Year ended December 31,					Period
	1999	2000	2001	2002	2003	from inception (January 17, 1989) to December 31, 2003
Statements of Operations Data:						
Revenue from collaborative agreements	\$ 422	\$ 4,600	\$ 1,266	\$ 4,813	\$ 1,435	\$ 18,881
Operating expenses:						
Research and development	10,649	12,094	14,857	21,481	26,821	126,499
Marketing, general and administrative	4,520	5,648	9,374	12,510	11,148	60,220
Total operating expenses	15,169	17,742	24,231	33,991	37,969	186,719
Other income	—	—	6,120	1,653	—	7,773
Impairment of equity securities	—	—	—	—	(1,250)	(1,250)
Interest income, net	1,429	4,642	3,516	1,108	103	15,576
Net loss	\$ (13,318)	\$ (8,500)	\$ (13,329)	\$ (26,417)	\$ (37,681)	\$ (145,739)
Basic and diluted net loss per share	\$ (1.25)	\$ (0.63)	\$ (0.95)	\$ (1.85)	\$ (2.14)	
Weighted-average shares outstanding used in computing basic and diluted loss per share	10,678	13,428	14,032	14,259	17,611	

(in thousands)	As of December 31,				
	1999	2000	2001	2002	2003
Balance Sheet Data:					
Cash, cash equivalents and marketable securities	\$ 33,235	\$ 94,762	\$ 76,245	\$ 41,040	\$ 53,060
Total assets	52,239	114,768	105,786	83,092	94,845
Total debt and capital lease obligations	8,300	7,300	6,200	7,411	10,601
Deficit accumulated during the development stage	(59,812)	(68,312)	(81,641)	(108,058)	(145,739)
Total stockholders' equity	40,785	104,868	93,946	70,685	72,213



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

The following discussion should be read in conjunction with our financial statements and related notes included in this Annual Report.

OVERVIEW

We are a biopharmaceutical company focused on improving protein therapeutics using our proprietary technologies. Our core technologies, GlycoAdvance™ and GlycoPEGylation™, enable us to manipulate, enzymatically, the carbohydrate structures of glycoproteins, and thereby pursue the objective of improving the therapeutic profiles of proteins that have already been marketed or substantially developed. Our business strategy is to use our technologies to improve proteins for which there exists a substantial body of data demonstrating safety and efficacy. We intend to apply this strategy to next-generation products that we are developing on our own or in collaboration with others. We also expect to use our technologies, through strategic partners, to improve products of other parties.

We have incurred operating losses each year since our inception. As of December 31, 2003, we had an accumulated deficit of approximately \$145.7 million. We expect additional losses in 2004 and over the next several years as we expand product research and development efforts, increase manufacturing scale up activities and, potentially, begin sales and marketing activities. We have financed our operations through private and public offerings of equity securities, proceeds from debt financings, and revenues from our collaborative agreements.

We believe that our existing cash, cash equivalents, and marketable securities, expected revenue from collaborations and license arrangements, expected proceeds under the credit agreement we entered into in January 2004, and interest income should be sufficient to meet our operating and capital requirements into 2005, although changes in our collaborative relationships or our business, whether or not initiated by us, may cause us to deplete our cash and marketable securities sooner than the above estimate. Under the terms of a credit agreement we entered into in January 2004 to borrow up to \$9.0 million, all of which we expect to borrow during the first quarter of 2004, we have agreed to limit our total outstanding debt to \$22.0 million. After using a portion of the proceeds to repay existing debt, our total debt outstanding will be approximately \$15.7 million. At any time after the fourth year of the ten-year loan period, or if we fail to maintain a minimum required cash and short-term investments balance of at least \$22.0 million, the bank has the option to require additional collateral from us in the form of a letter of credit, which may have the effect of requiring us to repay the outstanding loan balance to the bank, or a security interest in certain cash and short-term investments.

See "Long-term Debt – Other Arrangements – Credit Agreement" in the Liquidity and Capital Resources section of this Annual Report for a description of the material features of this borrowing.

LIQUIDITY AND CAPITAL RESOURCES

> Overview

We had \$53,060,000 in cash, cash equivalents and marketable securities as of December 31, 2003, compared to approximately \$41,040,000 in cash and cash equivalents as of December 31, 2002. The increase for 2003 was primarily attributable to the proceeds of equity and debt financings, which were offset by the use of cash to fund our operating activities, capital expenditures, and debt repayments.

The development of next-generation proprietary protein therapeutics, which we are pursuing both independently and in collaboration with selected partners, will require substantial expenditures by us and our collaborators. To finance those expenditures, we plan to continue financing our operations through private and public offerings of equity securities, proceeds from debt financings, and revenues from existing and future collaborative agreements. Our 2004 revenues are difficult to project and will be largely dependent on entering into new collaborations and on the financial terms of any new collaborations. Other than revenues from our collaboration with Novo Nordisk, and any future collaborations with others, we expect to generate no significant revenues until such time as products incorporating our technologies are commercialized, which is not expected during the next several years. We expect an additional several years to elapse before we can expect to generate sufficient cash flow from operations to fund our operating and investing requirements. Accordingly, we will need to raise substantial additional funds to continue our business activities and fund our operations beyond 2004.

> Significant 2003 Cash Flows and Proceeds from Sales of Equity

During 2003, our operating activities consumed \$27,476,000, which included the receipt of a nonrefundable, upfront fee of \$4,300,000 upon entering into our collaboration with Novo Nordisk. In addition, we invested \$3,455,000 in capital expenditures, and made debt principal repayments of \$2,584,000. To finance these and future expenditures, we received \$38,893,000 from public and private offerings of our common stock and \$4,987,000 in proceeds from debt financings. We also entered into capital lease obligations during 2003 for assets with aggregate book values of \$787,000.



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

In September 2003, we sold 2,655,557 shares of common stock in a registered offering to a group of institutional and individual investors, generating net proceeds of \$22,377,000. In February 2003, we sold 2,866,763 shares of common stock in a private placement to a group of institutional and individual investors, generating net proceeds of \$16,320,000. In addition, employees purchased 25,836 shares of common stock during 2003 pursuant to our employee stock purchase plan, resulting in net proceeds of \$196,000. During 2003, we received proceeds of \$172,000 upon the exercise of options to purchase 62,780 shares of common stock.

> Long-term Debt — Proceeds from 2003 Arrangements

In this section, we describe the material features of our new issuances of debt, and capital lease obligations entered into, during 2003. In the following section, "Long-term Debt – Other Arrangements", we describe the material features of long-term debt arrangements that did not involve new borrowings during 2003, including a significant new agreement that we entered into in January 2004 to borrow up to \$9,000,000, all of which we expect to borrow during the first quarter of 2004.

2003 Equipment Loans

In December 2003, we borrowed \$1,201,000 to finance the purchase of equipment and facility improvements, which collateralize the amount borrowed. The terms of the financing require us to pay monthly principal and interest payments over 48 months at an interest rate of 8.66%. During 2004, we will be required to make principal and interest payments totaling \$335,000 under this agreement.

In September 2003, we borrowed \$831,000 to finance the purchase of equipment and facility improvements, which collateralize the amount borrowed. The terms of the financing require us to pay monthly principal and interest payments over 48 months at an interest rate of 8.35%. During 2004, we will be required to make principal and interest payments totaling \$269,000 under this agreement.

In March 2003, we borrowed \$2,954,000 to finance the purchase of equipment, which collateralize the amount borrowed. The terms of the financing require us to pay monthly principal and interest payments over 42 months at an interest rate of 8.35%. During 2004, we will be required to make principal and interest payments totaling \$976,000 under this agreement.

2003 Capital Lease Obligations

In September 2003, we entered into a capital lease for \$354,000 of equipment. The terms of the lease required us to make an initial payment of \$90,000 followed by monthly payments through September 2006.

During 2004, we will be required to make lease payments totaling \$99,000 under this agreement. We also entered into a capital lease obligation during September 2003 for \$60,000 of software. The terms of the lease require us to make monthly payments through September 2008. During 2004, we will be required to make lease payments totaling \$16,000 under this agreement.

In June 2003, we entered into a capital lease for \$119,000 of equipment. The terms of the lease required us to make an initial payment of \$31,000 followed by monthly payments through June 2006. During 2004, we will be required to make lease payments totaling \$37,000 under this agreement.

In April and May 2003, we entered into capital leases for \$254,000 of equipment. The terms of the leases require us to make monthly payments through April 2006. During 2004, we will be required to make lease payments totaling \$96,000 under these agreements.

> Long-term Debt — Other Arrangements

In this section, we describe the material features of our debt arrangements that did not involve new borrowings during 2003, including a significant new agreement that we entered into in January 2004 to borrow up to \$9,000,000, all of which we expect to borrow during the first quarter of 2004. In the previous section, "Long-term Debt – Proceeds from 2003 Arrangements," we describe the material features of long-term debt arrangements entered into during 2003.

Credit Agreement

In January 2004, we borrowed \$6,200,000 from a bank for the purpose of funding improvements to our leased facility in Horsham, PA. The credit agreement with our bank provides for us to borrow from the bank an additional \$1,800,000 and to utilize \$1,100,000 of our restricted cash for the purpose of paying in full the \$2,900,000 outstanding of our taxable Industrial Development Authority bonds, which payment we expect to occur during the first quarter of 2004. During the first quarter of 2004, we expect to enter into another agreement with the bank for it to acquire and reissue the \$1,000,000 outstanding of our tax-exempt Industrial Development Authority bonds. If the tax-exempt bond acquisition described above does not occur, the existing credit agreement provides for us to borrow an additional \$1,000,000 for the purpose of paying in full the outstanding amount of the tax-exempt Industrial Development Authority bonds.

Initially, the interest rate on the bonds will vary quarterly, depending on LIBOR rates. We will have the option each quarter to bear interest on the outstanding principal at a LIBOR-based variable interest rate or a fixed rate offered by our bank.

If the tax-exempt bond acquisition described above occurs, we will make quarterly, interest-only payments on the related \$1,000,000 debt for ten years followed by a single repayment of principal at the end of the ten-year loan period. For the debt outstanding under the existing credit agreement, we will make quarterly, interest-only payments through March 31, 2005. Commencing on March 31, 2005, we will make quarterly principal and interest payments over the remaining nine years of the ten-year loan period. The outstanding debt will be \$8,000,000 if the tax-exempt bond acquisition described above occurs and \$9,000,000 if the tax-exempt bond acquisition described above does not occur.

To provide credit support for the agreement, we granted a second mortgage to our bank on the land and building where our present headquarters are located, as well as on improvements, certain equipment, and other tangible personal property. The second mortgage will automatically convert to a first mortgage upon payment in full of our Industrial Development Authority Bonds, which payment we expect to occur during the first quarter of 2004. In the credit agreement, we agreed to limit our total outstanding debt to \$22,000,000. After using a portion of the proceeds to repay existing debt, our total debt outstanding will be approximately \$15,700,000. At any time after the fourth year of the loan period, or if we fail to maintain a minimum required cash and short-term investments balance of at least \$22,000,000, the bank has the option to require additional collateral from us in the form of a letter of credit or a security interest in certain cash and short-term investments.

Montgomery County (Pennsylvania) IDA Bonds

In 1997, we issued, through the Montgomery County (Pennsylvania) Industrial Development Authority, \$9,400,000 of taxable and tax-exempt bonds, of which \$3,900,000 remains outstanding as of December 31, 2003. As mentioned above, we expect during the first quarter of 2004 to pay in full the outstanding loan balance of the taxable bonds and to have our bank acquire and reissue the tax-exempt bonds. The bonds were issued to finance the purchase of our headquarters building and the construction of a pilot-scale manufacturing facility within our building. The bonds are supported by an AA-rated letter of credit, and a reimbursement agreement between our bank and the letter of credit issuer. The interest rate on the bonds varies weekly, depending on market rates for AA-rated taxable and tax-exempt obligations, respectively. During 2003, the weighted-average, effective interest rate was 2.7% per year, including letter-of-credit and other fees. The terms of the bond issuance provide for monthly, interest-only payments and a single repayment of principal at the end of the twenty-year life of the bonds. However, under our agreement with our bank, we make monthly payments to an escrow account to provide for an annual prepayment of principal. As of December 31, 2003, we had restricted funds relating to the taxable bonds of \$901,000, which consisted

of our monthly payments to an escrow account plus interest revenue on the balance of the escrow account. During the first quarter of 2004, we expect to use the restricted funds and a portion of the proceeds under the credit agreement we entered into in January 2004 to pay in full the outstanding balance of the taxable bonds.

To provide credit support for this arrangement, we granted a first mortgage on the land, building, improvements, and certain machinery and equipment to our bank. We also agreed to maintain a minimum required cash and short-term investments balance of at least two times the outstanding loan balance. If we fail to comply with this requirement, we are required to deposit with the lender cash collateral up to, but not more than, the unpaid balance of the loan. At December 31, 2003, we were required to maintain \$7,800,000 of cash and short-term investments.

2002 Arrangements

In December 2002, we borrowed approximately \$2,261,000 to finance the purchase of equipment, which collateralize the amount borrowed. The terms of the financing require us to pay monthly principal and interest payments over 36 months at an interest rate of 8.0%. During 2004, we will be required to make principal and interest payments totaling \$850,000 under this agreement.

In November 2002, we entered into a capital lease for \$50,000 of equipment. The terms of the lease require us to make monthly payments over 36 months. During 2004, we will be required to make payments totaling \$19,000 under this agreement.

> Capital Expenditures

During 2001, 2002, and 2003, we purchased \$9,371,000, \$17,826,000, and \$3,455,000, respectively, of property, equipment, and building improvements. In addition, during 2002 and 2003 we entered into capital lease obligations for assets with aggregate book values of \$50,000 and \$787,000, respectively. Our capital expenditures during 2001 and 2002 consisted largely of the two following facility improvement projects:

- We completed construction in 2002 of a pilot manufacturing facility at our headquarters location for the production of enzymes and sugar nucleotides at commercial-scale in accordance with applicable U.S. Food and Drug Administration's current Good Manufacturing Practices regulations. The facility comprises approximately 20,000 square feet of processing areas and 3,500 square feet of utility space. It has bacterial and fungal fermentation capabilities and houses two 1,500 liter fermenters. We expended approximately \$17,448,000 for this project, of which \$8,197,000 and \$9,251,000 were expended in 2001 and 2002, respectively.



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

• We entered into a lease agreement in 2002 for a 40,000 square foot building, which we intended to convert into laboratory and office space. Later in 2002, we suspended plans to complete these renovations. In November 2003, we reinitiated renovation activities at an expected additional cost of \$6,300,000, which is incremental to \$4,081,000 previously invested in these renovations, on approximately 25,000 square feet of the facility, leaving approximately 15,000 square feet available for future expansion. Our construction-in-progress at December 31, 2002 and 2003 includes \$3,992,000 and \$5,091,000, respectively, in renovations to this facility. In January 2004, we borrowed \$6,200,000 from a bank for the purpose of funding these improvements. See "Long-term Debt - Other

Arrangements - Credit Agreement" in the Liquidity and Capital Resources section of this Annual Report for a description of the material features of this borrowing.

In 2004, we expect our investment in capital expenditures to be approximately \$10.0 million, which includes the impact of resuming the facility renovations described above. In addition to the credit agreement described above, we may finance some or all of these capital expenditures through capital leases or the issuance of new debt or equity. If we issue new debt, we may be required to maintain a minimum cash and investments balance, or to transfer cash into an escrow account to collateralize some portion of the debt, or both.

> Summary of Contractual Obligations

See "Long-term Debt - Other Arrangements - Credit Agreement" in the Liquidity and Capital Resources section of this Annual Report for a description of the material features, including our repayment obligations, of the credit agreement we entered into in January 2004. The following table summarizes our obligations to make future payments under current contracts as of December 31, 2003:

	Total	Payments due by period			
		Less than 1 Year	1 - 3 Years	4 - 5 Years	After 5 Years
Long-term debt ¹	\$ 9,982,000	\$ 2,008,000	\$ 5,400,000	\$ 2,230,000	\$ 344,000
Capital lease obligations ²	619,000	223,000	371,000	25,000	—
Operating leases ³	10,125,000	792,000	1,287,000	899,000	7,147,000
Purchase obligations ⁴	1,999,000	1,660,000	299,000	40,000	—
Other long-term liabilities reflected on our balance sheet under GAAP ⁵	794,000	531,000	263,000	—	—
Total contractual obligations	\$ 23,519,000	\$ 5,214,000	\$ 7,620,000	\$ 3,194,000	\$ 7,491,000

1. See "Long-term Debt" in this Liquidity and Capital Resources section for a description of the material features of our long-term debt. Because we expect to refinance our Industrial Development Authority bonds during the first quarter of 2004 under a credit agreement entered into in January 2004, we have adjusted the minimum principal repayments relating to the bonds to reflect the principal repayment schedule of the new debt. See Note 7 of the Notes to Financial Statements included in this Annual Report.

2. See "Capital Lease Obligations" and Note 7 of the Notes to Financial Statements included in this Annual Report in the Liquidity and Capital Resources section for a description of the material features of our capital lease obligations.

3. See Note 14 of the Notes to Financial Statements included in this Annual Report for a description of our significant operating leases. The obligations presented in this table include \$151,000 of deferred rent, which is included in the Other Liabilities section of our Balance Sheet.

4. Includes our commitments as of December 31, 2003 to purchase goods and services.

5. Represents the present value as of December 31, 2003 of the remaining payments under agreements with two former employees. These agreements are described in Note 12 of the Notes to Financial Statements included in this Annual Report.

OFF-BALANCE SHEET ARRANGEMENTS

We are not involved in any off-balance sheet arrangements that have or are reasonably likely to have a material future effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures, or capital resources.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

Our Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") focuses on our liquidity, capital resources, and financial statements. The financial statements have been prepared in accordance with accounting principles generally accepted in the U.S. The preparation of financial statements requires management to make estimates and assumptions that affect the carrying amounts of assets and liabilities, and the reported amounts of revenues and expenses during the reporting period. These estimates and assumptions are developed and adjusted periodically by management based on historical experience and on various other factors that are believed to be reasonable under the circumstances. Actual results may differ from these estimates.

Our summary of significant accounting policies is described in Note 2 to our financial statements included in this Annual Report. Management considers the following policies and estimates to be the most critical in understanding the more complex judgments that are involved in preparing our financial statements and the uncertainties that could impact our results of operations, financial position, and cash flows. Management has discussed the development and selection of these critical accounting policies and estimates with the audit committee of our board of directors, and the audit committee has reviewed the company's disclosure relating to it in this MD&A.

Valuation of Long-Lived Assets

We evaluate our long-lived assets for impairment whenever indicators of impairment exist. Our history of negative operating cash flows is an indicator of impairment. Accounting standards require that if the sum of the future cash flows expected to result from a company's long-lived asset, undiscounted and without interest charges, is less than the reported value of the asset, an asset impairment must be recognized in the financial statements. The amount of the recognized impairment would be calculated by subtracting the fair value of the asset from the reported value of the asset.

Valuation of Acquired Intellectual Property

The carrying value of acquired intellectual property ("Acquired IP") on our balance sheet as of December 31, 2003 was \$1.9 million. We reviewed our acquired intellectual property ("Acquired IP") for impairment as of

December 31, 2003. Because the undiscounted sum of the estimated future cash flows from the Acquired IP exceeded the carrying value, we have not recognized an impairment.

We believe that the accounting estimate related to asset impairment of our Acquired IP is a "critical accounting estimate" because:

- the accounting estimate is highly susceptible to change from period to period because it requires company management to estimate future cash flows over the life of our Acquired IP by making assumptions about the timing and probability of our success in:
 - entering into new collaborations; and
 - developing and commercializing products that incorporate our technologies, either directly or with collaborators; and
- the recognition of an impairment would have a material impact on the assets reported on our balance sheet as well as our net loss.

Management's assumptions underlying the estimate of cash flows require significant judgment because we have limited experience in entering into collaborations with others to develop products incorporating our technologies. In addition, we have limited experience in developing products incorporating our technologies and we have no experience in commercializing any products.

In estimating the impact of future collaborations, we have made assumptions about the timing of entering into collaborations for potential products, most of which we are not yet developing. We have used data from public and private sources to estimate the types of cash flows that would occur at various stages of development for each product.

As of December 31, 2003, we estimate that our future cash flows, on an undiscounted basis, related to Acquired IP are greater than the current carrying value of the asset. Any decreases in estimated future cash flows could have an impact on the carrying value of the Acquired IP. If we had determined the Acquired IP to be fully impaired as of December 31, 2003, total assets would have been reduced by 2% and net loss would have been increased by 5%.

Valuation of Property and Equipment

Our property and equipment, which have a carrying value of \$37.2 million as of December 31, 2003, have been recorded at cost and are being amortized on a straight-line basis over the estimated useful lives of those assets. Approximately \$5.2 million of the carrying value represents the cost and, we believe, the fair value of construction-in-progress. We believe the remaining property and equipment carrying value of \$32.0 million does not exceed its fair value.



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

Valuation of Investment in Convertible Preferred Stock

In 2000, we made an investment of \$1,250,000 in convertible preferred stock of Neuronix, Inc., and entered into a research and development collaboration with Neuronix for the discovery and development of drugs for treating Parkinson's disease and other neurological diseases. We recorded the equity investment at cost. In October 2003, Neuronix informed us that they had completed an equity financing, under which other Neuronix investors have an aggregate liquidation preference that is senior to our liquidation preference and exceeds the post-money valuation of Neuronix. As a result, we reduced the carrying value of our equity investment to zero as of September 30, 2003 by recording a non-cash charge, which is reflected as an impairment of equity securities in our statements of operations.

Revenue Recognition

Our revenue from collaborative agreements consists of upfront fees, research and development funding, and milestone payments. We recognize revenues consistent with Staff Accounting Bulletin No. 104, "Revenue Recognition" (SAB 104). SAB 104 was issued by the Securities and Exchange Commission in December 2003, and updates the guidance from Staff Accounting Bulletin No. 101, "Revenue Recognition in Financial Statements." Non-refundable upfront fees are deferred and amortized to revenue over the related performance period. We estimate our performance period based on the specific terms of each collaborative agreement, but the actual performance period may vary. We adjust the performance periods based on available facts and circumstances. Periodic payments for research and development activities are recognized over the period that we perform those activities under the terms of each agreement. Revenue resulting from the achievement of milestone events stipulated in the agreements is recognized when the milestone is achieved. Milestones are based on the occurrence of a substantive element specified in the contract or as a measure of substantive progress towards completion under the contract.

In November 2003, we entered into two research, development and license agreements with Novo Nordisk A/S to use our GlycoPEGylation™ technology to develop three next-generation proteins within Novo Nordisk's therapeutic areas, one of which is currently marketed by them. Under the terms of the new agreements, we received a non-refundable, upfront fee of \$4,300,000. As required under SAB 104, we deferred the upfront fee and will amortize this amount over an expected performance period of five years. Our estimate of the performance period is a "critical accounting estimate" because:

- the accounting estimate is highly susceptible to change from period to period (because the estimate depends on the preclinical and clinical progress of the three next-generation proteins); and

- a change in the expected performance period could have a material impact on the deferred revenue reported on our balance sheet as well as our net loss.

Stock-based Employee Compensation

We apply APB Opinion No. 25, "Accounting for Stock Issued to Employees" (APB 25), and related interpretations in accounting for all stock-based employee compensation. We record deferred compensation for option grants to employees for the amount, if any, by which the market price per share exceeds the exercise price per share. We amortize deferred compensation over the vesting periods of each option.

We have elected to adopt only the disclosure provisions of Statement of Financial Accounting Standards No. 123, "Accounting for Stock-Based Compensation" (SFAS 123), as amended by Statement of Financial Accounting Standards No. 148, "Accounting for Stock-Based Compensation - Transition and Disclosure." The following table illustrates the effect on our net loss and basic and diluted net loss per share if we had recorded compensation expense for the estimated fair value of our stock-based employee compensation, consistent with SFAS 123 (in thousands, except per share data):

Year Ended December 31,	2001	2002	2003
Net loss — as reported	\$(13,329)	\$ (26,417)	\$ (37,681)
Add: Stock-based employee compensation expense included in reported net loss	125	171	100
Deduct: Total stock-based employee compensation expense determined under fair value-based method for all awards	(8,179)	(15,588)	(11,893)
Net loss — pro forma	\$(21,383)	\$ (41,834)	\$ (49,474)
Basic and diluted net loss per share — as reported	\$ (0.95)	\$ (1.85)	\$ (2.14)
Basic and diluted net loss per share — pro forma	\$ (1.52)	\$ (2.94)	\$ (2.81)

RESULTS OF OPERATIONS

> Years Ended December 31, 2003 and 2002 and Outlook for 2004

Our net loss for the year ended December 31, 2003 was \$37,681,000 compared to \$26,417,000 for the corresponding period in 2002. The following section explains the trends within each component of net loss for 2003 compared to 2002 and provides our estimate of trends for 2004 for each component.

Revenue from Collaborative Agreements. Revenues from collaborative agreements decreased to \$1,435,000 in 2003 from \$4,813,000 in 2002. Our revenues from collaborative agreements have historically been derived from a few major collaborators. Our collaborative agreements provide for some or all of the following elements: upfront fees, research and development funding, milestone revenues, and royalties on product sales.

In November 2003, we entered into two research, development and license agreements with Novo Nordisk A/S. Under the terms of the new agreements, we received a non-refundable, upfront fee of \$4,300,000. As required under SAB 104, we deferred the upfront fee and will amortize this amount over an average expected performance period of five years. During the year ended December 31, 2003, Novo Nordisk accounted for \$694,000 of our revenues, of which \$107,000 represented amortization of the upfront fee.

During 2002 and 2003, Wyeth accounted for revenues of \$4,472,000 and \$250,000, respectively. Our collaboration with Wyeth Pharmaceuticals was terminated in September 2002, and we expect to receive no further revenues under this agreement. During 2003, we completed activities related to our Wyeth Nutrition collaboration and recorded as revenue the last scheduled payment for research and development funding of \$250,000, which we received in October 2002. Separately, we recognized revenue during 2003 of \$400,000 under a license agreement.

Because our 2004 revenues could be substantially affected by entering into new collaborations and on the financial terms of any new collaborations, we cannot estimate our 2004 revenues.

Research and Development Expense. In January 2003, we announced the selection of an improved erythropoietin (EPO) as the target for our first proprietary drug development project. EPO is prescribed to stimulate production of red blood cells, and is approved for sale in major markets around the world for the treatment of anemia associated with oncology chemotherapy, end stage renal disease, and chronic renal insufficiency. Based on proof-of-concept data, we believe it is feasible to develop a long

acting EPO through GlycoPEGylation. We expect to complete various preclinical activities during the first half of 2004, and our goal is to initiate clinical trials by the end of 2004.

In October 2003, we announced the selection of an improved granulocyte colony stimulating factor (G-CSF) as the target for our second proprietary drug development project. G-CSF is prescribed to stimulate production of neutrophils (a type of white blood cell), and is approved for sale in major markets around the world for treatment of neutropenia associated with oncology chemotherapy. Based on proof-of-concept data, we believe it is feasible to develop a long acting G-CSF through GlycoPEGylation. We are planning to continue various preclinical development activities during 2004, with the goal of initiating clinical trials by the end of 2005.

We are working in collaboration with Novo Nordisk to incorporate our technology in three next-generation versions of marketed proteins, one of which is currently marketed by Novo Nordisk. We are also conducting exploratory research, both independently and with collaborators, to identify proteins that are likely candidates for development using our technologies, which may be advanced for development through our own proprietary drug program or through our partnering and licensing program. We are continuing some work on the development of our other programs, including new applications of our GlycoPEGylation and GlycoConjugation technologies.

Our current research and development projects are divided between two categories: (i) GlycoAdvance and GlycoPEGylation and (ii) Other Glycotechnology Programs, which includes projects investigating other applications of our intellectual property. We are exploring the most cost-effective means of continuing some of the projects classified as Other Glycotechnology Programs. The following chart sets forth our projects in each of these categories and the stage to which each has been developed:

	Development Stage	Status
GlycoAdvance and GlycoPEGylation		
Improved erythropoietin	Preclinical	Active
Improved granulocyte colony stimulating factor	Preclinical	Active
Other protein projects	Research	Active
Other Glycotechnology Programs		
Non-protein therapeutic applications	Research	Active
Nutritional applications	N/A	Evaluating outlicensing opportunities



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

For each of our research and development projects, we incur both direct and indirect expenses. Direct expenses include salaries and other costs of personnel, raw materials, and supplies for each project. We may also incur third-party costs related to these projects, such as contract research, consulting and preclinical development costs. Indirect expenses include depreciation expense and the costs of operating and maintaining our facilities, property, and equipment, to the extent used for our research and development projects, as well as the costs of general management of our research and development projects.

Our research and development expenses increased to \$26,821,000 in 2003 from \$21,481,000 in 2002. We expect our research and development expenses to be significantly greater in 2004 than they were in 2003, as a result of the development, preclinical and clinical activities we plan to conduct during the year. The following table illustrates research and development expenses incurred during 2002 and 2003 in each period for our significant groups of research and development projects (in thousands).

Year Ended December 31,	2002	2003
GlycoAdvance and GlycoPEGylation	\$ 7,082	\$ 10,012
Other Glycotechnology Programs	1,779	486
Indirect expenses	12,620	16,323
	\$ 21,481	\$ 26,821

GlycoAdvance and GlycoPEGylation

Our GlycoAdvance and GlycoPEGylation research and development expenses increased during 2003, compared to 2002, primarily due to increased preclinical development costs associated with our improved EPO, purchases of laboratory services and research supplies, including proteins, and the reallocation of resources from our Other Glycotechnology Programs.

Other Glycotechnology Programs

Research and development expenses related to our Other Glycotechnology Programs decreased during 2003, compared to 2002, consistent with our decision during 2002 to focus our resources on our GlycoAdvance and GlycoPEGylation programs.

Indirect expenses

Our indirect research and development expenses increased during 2003, compared to 2002, primarily due to increases related to depreciation of pilot manufacturing facility improvements, which were placed in service in January 2003, additional personnel, and the purchase of more supplies and outside services than in 2002. Substantially offsetting these increases was a reduction in severance expense during 2003 of \$2,294,000, of which

\$1,608,000 was a non-cash charge, related to an agreement entered into during the first quarter of 2002 with one of our former executive officers.

The process of bringing drugs from the preclinical research and development stage through Phase I, Phase II, and Phase III clinical trials and FDA approval is a time consuming and expensive process. Because our announced product candidates are currently in the preclinical stage and there are a variety of potential intermediate clinical outcomes that are inherent in drug development, we cannot reasonably estimate the timing and costs we will incur to complete these research and development projects. In addition, the timing and costs to complete our research and development projects will be affected by the timing and nature of any collaboration agreements we may enter into with a third party, neither of which we can currently estimate.

Material cash inflows from proprietary drug development projects are highly uncertain, and we cannot reasonably estimate the period in which we will begin to receive material net cash inflows from our major research and development projects. Cash inflows from development-stage products are dependent on several factors, including entering into collaborative agreements, the achievement of certain milestones, and regulatory approvals. We may not receive milestone payments from any existing or future collaborations if a development-stage product fails to meet technical or performance targets or fails to obtain the required regulatory approvals. Further, our revenues from collaborations will be affected by the level of efforts committed and made by our collaborative partners. Even if we achieve technical success in developing drug candidates, our collaborative partners may not devote the resources necessary to complete development and commence marketing of these products or they may not successfully market potential products.

Marketing, General and Administrative Expense. Marketing, general and administrative expenses for the year ended December 31, 2003 were \$11,148,000, compared to \$12,510,000 for the corresponding period in 2002. The 2002 period contained higher consulting expenses and costs associated with executive recruitment and relocation than the comparable 2003 period. The decreases in those expenses during 2003 were partly offset by increases in payroll. During 2004, we expect our marketing, general and administrative expenses to increase by less than 10% over 2003.

Other Income and Expense. During the year ended December 31, 2003, we recorded a non-cash impairment charge of \$1,250,000 relating to our investment in Series A convertible preferred stock of Neuronix, Inc. We recorded the equity investment, which was made in 2000, at cost. In October 2003, Neuronix informed us they were nearing completion of a

Series C equity financing, under which Series C and Series B Neuronix investors would have an aggregate liquidation preference that is senior to the Series A liquidation preference and exceeds the assumed post-money valuation of Neuronix. As a result, we reduced the carrying value of our equity investment to zero as of September 30, 2003 by recording the non-cash impairment charge.

During the year ended December 31, 2002, we recognized \$1,653,000 of other income upon receipt from Genzyme General of a contract payment, which was due as a result of the restructuring of our agreement with Novazyme Pharmaceuticals, Inc. in March 2001. In September 2001, Genzyme acquired Novazyme, and assumed Novazyme's contractual obligation to us. We did not recognize any other income during 2003.

Interest income for the year ended December 31, 2003 was \$564,000, compared to \$1,108,000 for the corresponding period in 2002. The decrease was due to lower average cash and cash equivalents and marketable securities balances, as well as lower interest rates, during 2003. Our interest income during 2004 is difficult to project, and will depend largely on prevailing interest rates and whether we complete any collaborative agreements and any additional equity or debt financings during the year.

Interest expense for the year ended December 31, 2003 was \$461,000, compared to zero for the corresponding period in 2002. In 2002, we capitalized \$150,000 of interest expense on our two capital construction projects, as discussed in the Liquidity and Capital Resources section of this MD&A. In accordance with GAAP, we recognized capitalized interest for these projects only to the extent of our actual interest expense, resulting in no reported interest expense for 2002. We expect our interest expense during 2004 to increase due to our entering into an agreement in January 2004 to borrow up to \$9,000,000, all of which we expect to borrow during the first quarter of 2004. See "Long-term Debt – Other Arrangements – Credit Agreement" in the Liquidity and Capital Resources section of this Annual Report for a description of the material features of this debt financing.

Years Ended December 31, 2002 and 2001

Our net loss for the year ended December 31, 2002 was \$26,417,000 compared to \$13,329,000 for the corresponding period in 2001. The following section explains the trends within each component of net loss for 2002 compared to 2001.

Revenue from Collaborative Agreements. Revenues from collaborative agreements increased to \$4,813,000 in 2002 from \$1,266,000 in 2001. The increase in revenues during 2002 was primarily a result of our Wyeth

Pharmaceuticals collaboration, which was terminated in the third quarter of 2002. Of the increase, \$1,000,000 was non-cash, and represented the remaining amortization of the upfront fee that Wyeth paid in December 2001. As required under SAB 101, we deferred the upfront fee and began to amortize this amount as revenue over the expected performance period of the Wyeth agreement. Upon termination of the Wyeth agreement, the unamortized portion of the upfront fee was recognized as revenue.

Research and Development Expense. Research and development expenses for the year ended December 31, 2002 were \$21,481,000, compared to \$14,857,000 for the year ended December 31, 2001. The following table illustrates research and development expenses incurred during 2001 and 2002 in each period for our significant groups of research and development projects (in thousands).

Year Ended December 31,	2001	2002
GlycoAdvance and GlycoPEGylation	\$ 3,066	\$ 7,082
Other Glycotechnology Programs	2,690	1,779
Indirect expenses	9,101	12,620
	\$ 14,857	\$ 21,481

GlycoAdvance and GlycoPEGylation

Our GlycoAdvance and GlycoPEGylation research and development expenses increased during 2002, compared to 2001, primarily due to increased purchases of proteins, hiring of employees, and the reallocation of resources from our Other Glycotechnology Programs.

Other Glycotechnology Programs

Research and development expenses related to our Other Glycotechnology Programs decreased during 2002, compared to 2001, consistent with our decision during 2002 to focus our resources on our GlycoAdvance and GlycoPEGylation programs.

Indirect expenses

Our indirect research and development expenses increased during 2002, compared to 2001, primarily due to increases related to severance expense and costs associated with employee recruitment and relocation. During 2002, we recorded severance expense related to research and development personnel of \$2,294,000, of which \$1,608,000 was a non-cash charge, related to an agreement entered into during the first quarter of 2002 with one of our former executive officers.

Marketing, General and Administrative Expense. Marketing, general and administrative expenses for the year ended December 31, 2002 were \$12,510,000, compared to \$9,374,000 for the corresponding period in 2001.



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

The 2002 period contained higher personnel costs (including payroll, recruiting, and relocation), legal, and consulting expenses than the comparable 2001 period, which increases resulted primarily from recruiting of senior executives and focusing our business on the development of next-generation proprietary protein therapeutics.

Other Income and Expense. During the year ended December 31, 2002, we recognized \$1,653,000 of other income upon receipt from Genzyme General of a contract payment, which was due as a result of the restructuring of our agreement with Novazyme Pharmaceuticals, Inc. in March 2001. In September 2001, Genzyme acquired Novazyme, and assumed Novazyme's contractual obligation to us.

Interest income for the year ended December 31, 2002 was \$1,108,000, compared to \$3,704,000 for the corresponding period in 2001. The decrease was due to lower average cash and cash equivalents and marketable securities balances, as well as lower interest rates, during 2002.

Interest expense for the year ended December 31, 2002 was zero, compared to \$188,000 for the corresponding period in 2001. The decrease was due to the fact that in 2002 we capitalized \$150,000 of interest expense on our two capital construction projects, as discussed in the Liquidity and Capital Resources section of this MD&A. In accordance with GAAP, we recognized capitalized interest for these projects only to the extent of our actual interest expense, resulting in no reported interest expense for 2002.

RECENT ACCOUNTING PRONOUNCEMENTS

In April 2003, the Financial Accounting Standards Board (FASB) issued Statement of Financial Accounting Standards No. 149, "Amendment of Statement 133 on Derivative Instruments and Hedging Activities" (SFAS No. 149). This Statement amends and clarifies accounting for derivative instruments, including certain derivative instruments embedded in other contracts, and for hedging activities under SFAS No. 133. SFAS No. 149 was effective for contracts entered into or modified after June 30, 2003, for hedging relationships designated after June 30, 2003, and to certain preexisting contracts. The adoption of SFAS No. 149 did not have a material impact on our financial statements.

In May 2003, the FASB issued SFAS No. 150, "Accounting for Certain Financial Instruments with Characteristics of both Liabilities and Equity". This Statement establishes standards for how an issuer classifies and measures certain financial instruments with characteristics of both liabilities and equity. SFAS No. 150 was effective for financial instruments entered into or modified after May 31, 2003, and is otherwise effective July 1, 2003. The adoption of SFAS No. 150 did not have an impact on our financial statements as we do not have any instruments that are within the scope of this statement.

In December 2003, the FASB issued FASB Interpretation No. 46 (revised December 2003), "Consolidation of Variable Interest Entities" (FIN 46R), which addresses how a business enterprise should evaluate whether it has a controlling financial interest in an entity through means other than voting rights and accordingly should consolidate the entity. FIN 46R replaces FASB Interpretation No. 46, "Consolidation of Variable Interest Entities," which was issued in January 2003. We will be required to apply FIN 46R to variable interests in variable interest entities created after December 31, 2003. We do not have any variable interests in variable interest entities.



INDEPENDENT AUDITORS' REPORT

The Stockholders

Neose Technologies, Inc.:

We have audited the accompanying balance sheets of Neose Technologies, Inc. (a development-stage company) as of December 31, 2003 and 2002, and the related statements of operations, stockholders' equity and comprehensive loss, and cash flows for each of the years in the two-year period ended December 31, 2003, and for the period from January 17, 1989 (inception) to 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. The financial statements of Neose Technologies, Inc. for the year ended December 31, 2001 and for the period from January 17, 1989 (inception) through December 31, 2003, to the extent related to the period from January 17, 1989 (inception) to December 31, 2001, were audited by other auditors who have ceased operations. Those auditors expressed an unqualified opinion on those financial statements in their report dated January 25, 2002. Our opinion on the statements of operations, stockholders' equity and comprehensive loss, and cash flows, insofar as it relates to the amounts included for the period from January 17, 1989 (inception) to December 31, 2001, is based solely on the report of the other auditors.

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, based on our audits and the report of other auditors, the financial statements referred to above present fairly, in all material respects, the financial position of Neose Technologies, Inc. (a development-stage company) as of December 31, 2003 and 2002, and the results of its operations and its cash flows for each of the years in the two-year period ended December 31, 2003, and for the period from January 17, 1989 (inception) to December 31, 2003, in conformity with accounting principles generally accepted in the United States of America.

KPMG LLP

Philadelphia, Pennsylvania
February 3, 2004



REPORT OF INDEPENDENT PUBLIC ACCOUNTANTS

The following is a copy of a report issued by Arthur Andersen LLP and included in the 2001 Form 10-K/A report for the fiscal year ended December 31, 2001 filed on April 30, 2002. This report has not been reissued by Arthur Andersen LLP, and Arthur Andersen LLP has not consented to its use in this Annual Report. For further discussion, see Exhibit 23.2 to our Annual Report on Form 10-K.

To Neose Technologies, Inc.:

We have audited the accompanying consolidated balance sheets of Neose Technologies, Inc. (a Delaware corporation in the development stage) and subsidiaries as of December 31, 2000 and 2001, and the related consolidated statements of operations, stockholders' equity and comprehensive loss, and cash flows for each of the three years in the period ended December 31, 2001, and for the period from inception (January 17, 1989) to December 31, 2001. 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. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Neose Technologies, Inc. and subsidiaries as of December 31, 2000 and 2001, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2001, and for the period from inception (January 17, 1989) to December 31, 2001, in conformity with accounting principles generally accepted in the United States.

ARTHUR ANDERSEN LLP

Philadelphia, Pennsylvania
January 25, 2002



BALANCE SHEETS

(in thousands, except per share amounts)	December 31,	
	2002	2003
Assets		
Current assets:		
Cash and cash equivalents	\$ 31,088	\$ 48,101
Marketable securities	9,952	4,959
Restricted funds	977	901
Prepaid expenses and other current assets	558	917
Total current assets	42,575	54,878
Property and equipment, net	36,508	37,192
Acquired intellectual property, net	2,507	1,910
Other assets	1,502	865
Total assets	\$ 83,092	\$ 94,845
Liabilities and Stockholders' Equity		
Current liabilities:		
Current portion of long-term debt and capital lease obligations	\$ 1,851	\$ 2,231
Accounts payable	1,127	2,342
Accrued compensation	1,339	2,510
Accrued expenses	1,880	2,433
Deferred revenue	320	4,333
Total current liabilities	6,517	13,849
Long-term debt and capital lease obligations	5,560	8,370
Other liabilities	330	413
Total liabilities	12,407	22,632
Commitments (Note 14)		
Stockholders' equity:		
Preferred stock, \$.01 par value, 5,000 shares authorized, none issued	—	—
Common stock, \$.01 par value, 30,000 shares authorized; 14,330 and 19,935 shares issued; 14,324 and 19,935 shares outstanding	143	199
Additional paid-in capital	178,945	217,849
Treasury stock, 6 shares at cost	(175)	—
Deferred compensation	(170)	(96)
Deficit accumulated during the development-stage	(108,058)	(145,739)
Total stockholders' equity	70,685	72,213
Total liabilities and stockholders' equity	\$ 83,092	\$ 94,845

The accompanying notes are an integral part of these financial statements.



STATEMENTS OF OPERATIONS

(in thousands, except per share amounts)	Year Ended December 31,			Period
	2001	2002	2003	from inception (January 17, 1989) to December 31, 2003
Revenue from collaborative agreements	\$ 1,266	\$ 4,813	\$ 1,435	\$ 18,881
Operating expenses:				
Research and development	14,857	21,481	26,821	126,499
Marketing, general and administrative	9,374	12,510	11,148	60,220
Total operating expenses	24,231	33,991	37,969	186,719
Operating loss	(22,965)	(29,178)	(36,534)	(167,838)
Other income	6,120	1,653	—	7,773
Impairment of equity securities	—	—	(1,250)	(1,250)
Interest income	3,704	1,108	564	19,342
Interest expense	(188)	—	(461)	(3,766)
Net loss	\$ (13,329)	\$ (26,417)	\$ (37,681)	\$ (145,739)
Basic and diluted net loss per share	\$ (0.95)	\$ (1.85)	\$ (2.14)	
Weighted-average shares outstanding used in computing basic and diluted net loss per share	14,032	14,259	17,611	

The accompanying notes are an integral part of these financial statements.



STATEMENTS OF STOCKHOLDERS' EQUITY AND COMPREHENSIVE LOSS

(in thousands)	Convertible Preferred Stock		Common Stock		Additional paid-in capital	Treasury stock	Deferred compensation	Deficit accumulated during the development stage	Unrealized gains on marketable securities	Comprehensive loss accumulated during the development stage
	Shares	Amount	Shares	Amount						
Balance, January 17, 1989 (inception)	—	\$ —	—	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
Initial issuance of common stock	—	—	1,302	13	(3)	—	—	—	—	—
Shares issued pursuant to consulting, licensing, and antidilutive agreements	—	—	329	3	(1)	—	—	—	—	—
Sale of common stock	—	—	133	1	1	—	—	—	—	—
Net loss	—	—	—	—	—	—	—	(460)	—	(460)
Balance, December 31, 1990	—	—	1,764	17	(3)	—	—	(460)	—	(460)
Sale of stock	1,517	15	420	4	4,499	—	(7)	—	—	—
Shares issued pursuant to consulting and antidilutive agreements	—	—	145	1	—	—	—	—	—	—
Capital contributions	—	—	—	—	10	—	—	—	—	—
Dividends on preferred stock	—	—	—	—	(18)	—	—	—	—	—
Net loss	—	—	—	—	—	—	—	(1,865)	—	(1,865)
Balance, December 31, 1991	1,517	15	2,329	22	4,488	—	(7)	(2,325)	—	(2,325)
Sale of stock	260	2	17	—	2,344	—	—	—	—	—
Shares issued pursuant to redemption of notes payable	—	—	107	1	682	—	—	—	—	—
Exercise of stock options and warrants	—	—	21	—	51	—	—	—	—	—
Amortization of deferred compensation	—	—	—	—	—	—	5	—	—	—
Dividends on preferred stock	—	—	—	—	(36)	—	—	—	—	—
Net loss	—	—	—	—	—	—	—	(3,355)	—	(3,355)
Balance, December 31, 1992	1,777	17	2,474	23	7,529	—	(2)	(5,680)	—	(5,680)
Sale of preferred stock	250	3	—	—	1,997	—	—	—	—	—
Shares issued to licensor	—	—	3	—	—	—	—	—	—	—
Shares issued to preferred stockholder in lieu of cash dividends	—	—	1	—	18	—	—	—	—	—
Amortization of deferred compensation	—	—	—	—	—	—	2	—	—	—
Dividends on preferred stock	—	—	—	—	(36)	—	—	—	—	—
Net loss	—	—	—	—	—	—	—	(2,423)	—	(2,423)
Balance, December 31, 1993	2,027	20	2,478	23	9,508	—	—	(8,103)	—	(8,103)
Sale of preferred stock	2,449	25	—	—	11,040	—	—	—	—	—
Exercise of stock options	—	—	35	1	14	—	—	—	—	—
Shares issued to preferred stockholder in lieu of cash dividends	—	—	10	1	53	—	—	—	—	—
Dividends on preferred stock	—	—	—	—	(18)	—	—	—	—	—
Net loss	—	—	—	—	—	—	—	(6,212)	—	(6,212)
Balance, December 31, 1994	4,476	\$ 45	2,523	\$ 25	\$ 20,597	\$ —	\$ —	\$ (14,315)	\$ —	\$ (14,315)

The accompanying notes are an integral part of these financial statements.

CONTINUED

STATEMENTS OF STOCKHOLDERS' EQUITY AND COMPREHENSIVE LOSS CONTINUED

(in thousands)	Convertible Preferred Stock		Common Stock		Additional paid-in capital	Treasury stock	Deferred compensation	Deficit accumulated during the development stage	Unrealized gains on marketable securities	Comprehensive loss accumulated during the development stage
	Shares	Amount	Shares	Amount						
Sale of preferred stock	2,721	\$ 27	—	\$ —	\$ 10,065	\$ —	\$ —	\$ —	\$ —	\$ —
Exercise of stock options and warrants	—	—	116	1	329	—	—	—	—	—
Shares issued to employees in lieu of cash compensation	—	—	8	—	44	—	—	—	—	—
Deferred compensation related to grant of stock options	—	—	—	—	360	—	(360)	—	—	—
Shares issued to stockholder related to the initial public offering	—	—	23	—	—	—	—	—	—	—
Shares issued to preferred stockholder in lieu of cash dividends	—	—	3	—	18	—	—	—	—	—
Dividends on preferred stock	—	—	—	—	(36)	—	—	—	—	—
Conversion of preferred stock into common stock	(1,417)	(14)	472	5	9	—	—	—	—	—
Net loss	—	—	—	—	—	—	—	(5,067)	—	(5,067)
Balance, December 31, 1995	5,780	58	3,145	31	31,386	—	(360)	(19,382)	—	(19,382)
Dividends on preferred stock	—	—	—	—	(18)	—	—	—	—	—
Sale of common stock in initial public offering	—	—	2,588	26	29,101	—	—	—	—	—
Conversion of preferred stock into common stock	(5,780)	(58)	2,411	24	34	—	—	—	—	—
Exercise of stock options and warrants	—	—	65	1	162	—	—	—	—	—
Shares issued pursuant to employee stock purchase plan	—	—	6	—	60	—	—	—	—	—
Stock-based compensation related to modification of options	—	—	—	—	106	—	—	—	—	—
Amortization of deferred compensation	—	—	—	—	—	—	90	—	—	—
Net loss	—	—	—	—	—	—	—	(6,141)	—	(6,141)
Balance, December 31, 1996	—	—	8,215	82	60,831	—	(270)	(25,523)	—	(25,523)
Sale of common stock in public offering	—	—	1,250	13	20,326	—	—	—	—	—
Exercise of stock options and warrants	—	—	42	—	139	—	—	—	—	—
Shares issued pursuant to employee stock purchase plan	—	—	18	—	189	—	—	—	—	—
Deferred compensation related to grants of stock options	—	—	—	—	322	—	(322)	—	—	—
Amortization of deferred compensation	—	—	—	—	—	—	231	—	—	—
Net loss	—	—	—	—	—	—	—	(9,064)	—	(9,064)
Balance, December 31, 1997	—	\$ —	9,525	\$95	\$ 81,807	\$ —	\$(361)	\$(34,587)	\$ —	\$ (34,587)

The accompanying notes are an integral part of these financial statements.

CONTINUED



STATEMENTS OF STOCKHOLDERS' EQUITY AND COMPREHENSIVE LOSS CONTINUED

(in thousands)	Convertible Preferred Stock	Common Stock	Additional paid-in capital	Treasury stock	Deferred compensation	Deficit accumulated during the development stage	Unrealized gains on marketable securities	Comprehensive loss accumulated during the development stage
	Shares Amount	Shares Amount						
Exercise of stock options	— \$ —	49 \$ 1	\$ 261	\$ —	\$ —	\$ —	\$ —	\$ —
Shares issued pursuant to employee stock purchase plan	— —	15 —	171	—	—	—	—	—
Deferred compensation related to grants of stock options	— —	— —	161	—	(161)	—	—	—
Amortization of deferred compensation	— —	— —	—	—	311	—	—	—
Unrealized gains on marketable securities	— —	— —	—	—	—	—	222	222
Net loss	— —	— —	—	—	—	(11,907)	—	(11,907)
Balance, December 31, 1998	— —	9,589 96	82,400	—	(211)	(46,494)	222	(46,272)
Sales of common stock in private placements	— —	1,786 18	17,398	—	—	—	—	—
Exercise of stock options and warrants	— —	43 —	263	—	—	—	—	—
Shares issued pursuant to employee stock purchase plan	— —	16 —	156	—	—	—	—	—
Deferred compensation related to grants of stock options	— —	— —	796	—	(796)	—	—	—
Amortization of deferred compensation	— —	— —	—	—	477	—	—	—
Unrealized losses on marketable securities	— —	— —	—	—	—	—	(222)	(222)
Net loss	— —	— —	—	—	—	(13,318)	—	(13,318)
Balance, December 31, 1999	— —	11,434 114	101,013	—	(530)	(59,812)	—	(59,812)
Sale of common stock in public offering	— —	2,300 23	68,582	—	—	—	—	—
Exercise of stock options and warrants	— —	247 3	2,735	—	—	—	—	—
Shares issued pursuant to employee stock purchase plan	— —	11 —	157	—	—	—	—	—
Deferred compensation related to grants of employee stock options	— —	— —	70	—	(70)	—	—	—
Deferred compensation related to non-employee stock options	— —	— —	1,200	—	(1,200)	—	—	—
Amortization of deferred compensation related to:								
Employee options	— —	— —	—	—	70	—	—	—
Non-employee options	— —	— —	—	—	1,013	—	—	—
Net loss	— —	— —	—	—	—	(8,500)	—	(8,500)
Balance, December 31, 2000	— \$ —	13,992 \$140	\$173,757	\$ —	\$ (717)	\$(68,312)	\$ —	\$ (68,312)

The accompanying notes are an integral part of these financial statements.

CONTINUED



STATEMENTS OF STOCKHOLDERS' EQUITY AND COMPREHENSIVE LOSS CONTINUED

(in thousands)	Convertible Preferred Stock		Common Stock		Additional paid-in capital	Treasury stock	Deferred compensation	Deficit accumulated during the development stage	Unrealized gains on marketable securities	Comprehensive loss accumulated during the development stage
	Shares	Amount	Shares	Amount						
Exercise of stock options and warrants	—	\$ —	79	\$ 1	\$ 867	\$ —	\$ —	\$ —	\$ —	\$ —
Shares issued pursuant to employee stock purchase plan	—	—	18	—	335	—	—	—	—	—
Acquisition of treasury stock, 6 shares at cost	—	—	(6)	—	—	(175)	—	—	—	—
Deferred compensation related to grants of employee stock options	—	—	—	—	299	—	(299)	—	—	—
Deferred compensation related to non-employee stock options	—	—	—	—	75	—	(75)	—	—	—
Stock-based compensation related to modifications of options	—	—	—	—	791	—	—	—	—	—
Amortization of deferred compensation related to:										
Employee options	—	—	—	—	—	—	125	—	—	—
Non-employee options	—	—	—	—	—	—	463	—	—	—
Net loss	—	—	—	—	—	—	—	(13,329)	—	(13,329)
Balance, December 31, 2001	—	—	14,083	141	176,124	(175)	(503)	(81,641)	—	(81,641)
Exercise of stock options	—	—	209	2	1,575	—	—	—	—	—
Shares issued pursuant to employee stock purchase plan	—	—	32	—	384	—	—	—	—	—
Deferred compensation related to grants of employee stock options	—	—	—	—	118	—	(118)	—	—	—
Deferred compensation related to non-employee stock options	—	—	—	—	(878)	—	878	—	—	—
Stock-based compensation related to modification of options	—	—	—	—	1,622	—	—	—	—	—
Amortization of deferred compensation related to:										
Employee options	—	—	—	—	—	—	171	—	—	—
Non-employee options	—	—	—	—	—	—	(598)	—	—	—
Net loss	—	—	—	—	—	—	—	(26,417)	—	(26,417)
Balance, December 31, 2002	—	\$ —	14,324	\$143	\$178,945	\$(175)	\$(170)	\$(108,058)	\$ —	\$ (108,058)

The accompanying notes are an integral part of these financial statements.

CONTINUED



STATEMENTS OF STOCKHOLDERS' EQUITY AND COMPREHENSIVE LOSS CONTINUED

(in thousands)	Convertible Preferred Stock		Common Stock		Additional paid-in capital	Treasury stock	Deferred compensation	Deficit accumulated during the development stage	Unrealized gains on marketable securities	Comprehensive loss accumulated during the development stage
	Shares	Amount	Shares	Amount						
Sale of common stock in a registered offering	—	\$ —	2,655	\$26	\$ 22,351	\$ —	\$ —	\$ —	\$ —	\$ —
Sale of common stock in a private placement	—	—	2,867	29	16,291	—	—	—	—	—
Exercise of stock options	—	—	63	1	171	—	—	—	—	—
Shares issued pursuant to employee stock purchase plan	—	—	26	—	21	175	—	—	—	—
Deferred compensation related to grants of employee stock options	—	—	—	—	56	—	(56)	—	—	—
Deferred compensation related to non-employee stock options	—	—	—	—	14	—	(14)	—	—	—
Amortization of deferred compensation related to:										
Employee options	—	—	—	—	—	—	100	—	—	—
Non-employee options	—	—	—	—	—	—	44	—	—	—
Net loss	—	—	—	—	—	—	—	(37,681)	—	(37,681)
Balance, December 31, 2003	—	\$ —	19,935	\$199	\$217,849	\$ —	\$(96)	\$(145,739)	\$ —	\$(145,739)

The accompanying notes are an integral part of these financial statements.



STATEMENTS OF CASH FLOWS

(in thousands)	Year ended December 31,			Period
	2001	2002	2003	from inception (January 17, 1989) to December 31, 2003
Cash flows from operating activities:				
Net loss	\$ (13,329)	\$(26,417)	\$ (37,681)	\$(145,739)
Adjustments to reconcile net loss to cash used in operating activities:				
Depreciation and amortization	2,422	2,376	4,818	17,927
Loss on disposition of property and equipment	—	—	264	264
Non-cash compensation	1,379	1,195	144	4,917
Common stock issued for non-cash and other charges	—	—	—	35
Changes in operating assets and liabilities:				
Prepaid expenses and other current and non-current assets	(1,052)	825	(421)	(1,231)
Accounts payable	636	408	1,215	2,342
Accrued compensation	254	484	708	2,091
Accrued expenses	(208)	734	(200)	1,578
Deferred revenue	833	(902)	4,013	4,333
Other liabilities	—	330	(336)	(6)
Net cash used in operating activities	(9,065)	(20,967)	(27,476)	(113,489)
Cash flows from investing activities:				
Purchases of property and equipment	(9,371)	(17,826)	(3,455)	(50,563)
Proceeds from sale-leaseback of equipment	—	—	—	1,382
Purchases of marketable securities	(103,465)	(60,411)	(38,569)	(423,307)
Proceeds from sales of marketable securities	—	—	18,219	29,686
Proceeds from maturities of and other changes in marketable securities	131,238	51,000	25,500	389,360
Purchase of acquired technology	—	—	—	(4,550)
Investment in equity securities	—	—	—	(1,250)
Impairment of equity securities	—	—	1,250	1,250
Net cash provided by (used in) investing activities	18,402	(27,237)	2,945	(57,992)
Cash flows from financing activities:				
Proceeds from issuance of debt	—	2,261	4,987	19,203
Repayments of debt	(1,100)	(1,100)	(2,584)	(10,736)
Restricted cash related to debt	(9)	(75)	76	(830)
Proceeds from issuance of preferred stock, net	—	—	—	29,497
Proceeds from issuance of common stock, net	335	384	38,893	176,117
Proceeds from exercise of stock options and warrants	868	1,577	172	6,578
Acquisition of treasury stock	(175)	—	—	(175)
Dividends paid	—	—	—	(72)
Net cash provided by (used in) financing activities	(81)	3,047	41,544	219,582
Net increase (decrease) in cash and cash equivalents	9,256	(45,157)	17,013	48,101
Cash and cash equivalents, beginning of period	66,989	76,245	31,088	—
Cash and cash equivalents, end of period	\$ 76,245	\$ 31,088	\$ 48,101	\$ 48,101

The accompanying notes are an integral part of these financial statements.



NOTES TO FINANCIAL STATEMENTS

NOTE 1. BACKGROUND

We are a biopharmaceutical company focused on improving protein therapeutics using our proprietary technologies. Our core technologies, GlycoAdvance™ and GlycoPEGylation™, enable us to manipulate, enzymatically, the carbohydrate structures of glycoproteins, and thereby pursue the objective of improving the therapeutic profiles of proteins that have already been marketed or substantially developed. Our business strategy is to use our technologies to improve proteins for which there exists a substantial body of data demonstrating safety and efficacy. We intend to apply this strategy to next-generation products that we are developing on our own or in collaboration with others. We also expect to use our technologies, through strategic partners, to improve products of other parties. Neose was initially incorporated in January 1989, and began operations in October 1990.

NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

> Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires us to make estimates and assumptions. Those estimates and assumptions affect the reported amounts of assets and liabilities as of the date of the financial statements, the disclosure of contingent assets and liabilities as of the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

> Cash and Cash Equivalents

We consider all highly liquid investments with a maturity of three months or less on the date of purchase to be cash equivalents. As of December 31, 2002 and 2003, cash equivalents consisted of securities and obligations of either the U.S. Treasury or U.S. government agencies. Our cash balances have been kept on deposit primarily at one bank and in amounts greater than \$100,000, which is the limit of insurance provided by the Federal Deposit Insurance Corporation.

> Marketable Securities

Marketable securities consist of investments that have a maturity of more than three months on the date of purchase. To help maintain the safety and liquidity of our marketable securities, we have established guidelines for the concentration, maturities, and credit ratings of our investments. We determine the appropriate classification of our debt securities at the time

of purchase and re-evaluate such designation as of each balance sheet date. Marketable securities that we have the positive intent and ability to hold to maturity are classified as held-to-maturity securities and recorded at amortized cost.

As of December 31, 2003, we held a marketable security that was an obligation of a U.S. government agency. The security, which is classified as held-to-maturity, had an original maturity of 11 months. As of December 31, 2003, the security's amortized cost was \$4,959,000, which included \$15,000 of accrued interest, and the fair value was \$4,961,000. During 2003, there was \$342,000 of interest earned on securities that matured during the year.

> Restricted Funds

Under the terms of our Montgomery County (Pennsylvania) Industrial Development Authority taxable bonds, we are required to make monthly payments to an escrow account to provide for an annual prepayment of principal. As of December 31, 2003, we had restricted funds of \$901,000, which consisted of our monthly payments plus interest earned on the balance of the account. During the first quarter of 2004, we expect to use the restricted funds and a portion of the proceeds under the credit agreement we entered into in January 2004 to pay in full the outstanding balance of the taxable bonds. See Note 7 for a description of the credit agreement.

> Property and Equipment

Property and equipment are stated at cost. Property and equipment capitalized under capital leases are recorded at the present value of the minimum lease payments due over the lease term. Depreciation and amortization are provided using the straight-line method over the estimated useful lives of the related assets or the lease term, whichever is shorter. We use depreciable lives of three to seven years for laboratory and office equipment, and three to twenty years for building and improvements. Expenditures for maintenance and repairs are charged to expense as incurred, and expenditures for major renewals and improvements are capitalized.

> Impairment of Long-Lived Assets

We assess the recoverability of long-lived assets for which an indicator of impairment exists. Specifically, we calculate, and recognize, any impairment losses by comparing the carrying value of these assets to our estimate of the undiscounted future operating cash flows. Although our current and historical negative cash flows are indicators of impairment, we believe the future cash flows to be received from our long-lived assets will exceed the assets' carrying value. Accordingly, we have not recognized any impairment losses through December 31, 2003.

> Revenue Recognition

Revenue from collaborative agreements consists of upfront fees, research and development funding, and milestone payments. Non-refundable upfront fees are deferred and amortized to revenue over the related estimated performance period. Periodic payments for research and development activities are recognized over the period in which we perform those activities under the terms of each agreement. Revenue resulting from the achievement of milestone events stipulated in the agreements is recognized when the milestone is achieved.

> Research and Development

Research and development costs are charged to expense as incurred.

> Income Taxes

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

> Net Loss Per Share

Basic loss per share is computed by dividing net loss by the weighted-average number of common shares outstanding for the period. Diluted loss per share reflects the potential dilution from the exercise or conversion of securities into common stock. For the years ended December 31, 2001, 2002, and 2003, the effects of the exercise of outstanding stock options were antidilutive; accordingly, they were excluded from the calculation of diluted earnings per share. See Note 10 for a summary of outstanding options.

> Comprehensive Loss

Our comprehensive loss for the years ended December 31, 2001, 2002, and 2003 is comprised only of our net loss, and was \$13,329,000, \$26,417,000, and \$37,681,000, respectively.

> Fair Value of Financial Instruments

As of December 31, 2003, the carrying values of cash and cash equivalents, restricted funds, accounts receivable, accounts payable, accrued expenses, and accrued compensation approximate their respective fair values. In addition, we believe the carrying value of our debt instruments, which do not have readily ascertainable market values, approximates their fair values.

> Stock-based Compensation

We apply the intrinsic value method of accounting for all stock-based employee compensation in accordance with APB Opinion No. 25, "Accounting for Stock Issued to Employees" (APB 25), and related interpretations. We record deferred compensation for option grants to employees for the amount, if any, by which the market price per share exceeds the exercise price per share. In addition, we apply fair value accounting for option grants to non-employees in accordance with Statement of Financial Accounting Standards No. 123, "Accounting for Stock-Based Compensation" (SFAS No. 123), and Emerging Issues Task Force Issue 96-18, "Accounting for Equity Instruments That Are Issued to Other Than Employees for Acquiring, or in Conjunction with Selling, Goods or Services" (EITF 96-18).

We have elected to adopt only the disclosure provisions of Statement of Financial Accounting Standards No. 148, "Accounting for Stock-Based Compensation – Transition and Disclosure, an amendment of FASB Statement No. 123." The following table illustrates the effect on our net loss and basic and diluted net loss per share if we had recorded compensation expense for the estimated fair value of our stock-based employee compensation, consistent with SFAS No. 123 (in thousands, except per share data):

Year Ended December 31,	2001	2002	2003
Net loss – as reported	\$(13,329)	\$ (26,417)	\$ (37,681)
Add: Stock-based employee compensation expense included in reported net loss	125	171	100
Deduct: Total stock-based employee compensation expense determined under fair value-based method for all awards	(8,179)	(15,588)	(11,893)
Net loss – pro forma	\$(21,383)	\$ (41,834)	\$ (49,474)
Basic and diluted net loss per share – as reported	\$ (0.95)	\$ (1.85)	\$ (2.14)
Basic and diluted net loss per share – pro forma	\$ (1.52)	\$ (2.94)	\$ (2.81)



NOTES TO FINANCIAL STATEMENTS CONTINUED

> **Recent Accounting Pronouncements**

In April 2003, the Financial Accounting Standards Board (FASB) issued Statement of Financial Accounting Standards No. 149, "Amendment of Statement 133 on Derivative Instruments and Hedging Activities" (SFAS No. 149). This Statement amends and clarifies accounting for derivative instruments, including certain derivative instruments embedded in other contracts, and for hedging activities under SFAS No. 133. SFAS No. 149 was effective for contracts entered into or modified after June 30, 2003, for hedging relationships designated after June 30, 2003, and to certain preexisting contracts. The adoption of SFAS No. 149 did not have an impact on our financial statements.

In May 2003, the FASB issued SFAS No. 150, "Accounting for Certain Financial Instruments with Characteristics of both Liabilities and Equity". This Statement establishes standards for how an issuer classifies and measures certain financial instruments with characteristics of both liabilities and equity. SFAS No. 150 was effective for financial instruments entered into or modified after May 31, 2003, and is otherwise effective

July 1, 2003. The adoption of SFAS No. 150 did not have an impact on our financial statements as we do not have any instruments that are within the scope of this statement.

In December 2003, the FASB issued FASB Interpretation No. 46 (revised December 2003), "Consolidation of Variable Interest Entities" (FIN 46R), which addresses how a business enterprise should evaluate whether it has a controlling financial interest in an entity through means other than voting rights and accordingly should consolidate the entity. FIN 46R replaces FASB Interpretation No. 46, "Consolidation of Variable Interest Entities," which was issued in January 2003. We will be required to apply FIN 46R to variable interests in variable interest entities created after December 31, 2003. We do not have any variable interests in variable interest entities.

> **Reclassification**

Certain prior year amounts have been reclassified to conform to our current year presentation.

NOTE 3. SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION

The following table contains additional cash flow information for the periods reported.

(in thousands)	Year ended December 31,			Period from inception
	2001	2002	2003	(January 17, 1989) to December 31, 2003
Supplemental disclosure of cash flow information:				
Cash paid for interest	\$ 284	\$ 142	\$ 465	\$ 3,910
Non-compete agreement	\$ —	\$ —	\$ 882	\$ 882
Non-cash investing activities:				
Increase (decrease) in accrued property and equipment	\$ 1,525	\$ (1,698)	\$ 753	\$ 855
Assets acquired under capital leases	\$ —	\$ 50	\$ 787	\$ 837
Non-cash financing activities:				
Issuance of common stock for dividends	\$ —	\$ —	\$ —	\$ 90
Issuance of common stock to employees in lieu of cash compensation	\$ —	\$ —	\$ —	\$ 44

NOTE 4. PROPERTY AND EQUIPMENT

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

December 31,	2002	2003
Building and improvements	\$ 14,872	\$ 27,989
Laboratory and office equipment	8,964	16,024
Land	700	700
Construction-in-progress	21,440	5,217
	45,976	49,930
Less accumulated depreciation	(9,468)	(12,738)
	\$ 36,508	\$ 37,192

The construction-in-progress as of December 31, 2002 represents amounts incurred related to improvements to our owned facility in Horsham, PA. and our leased facility in Horsham, PA. During 2001 and 2002, we incurred \$17,448,000 for the construction and validation of our cGMP facility at our existing Horsham location. Our cGMP facility was placed in-service in January 2003. Of the total project cost, \$12,488,000 is considered building improvements and will be depreciated over 20 years and \$4,960,000 is laboratory equipment and will be depreciated over seven years. Separately, in 2002 we incurred \$3,992,000 for the design and renovations of our leased facility in Horsham. Later in 2002, we suspended plans to complete these renovations. In November 2003, we reinitiated renovation activities at an expected additional cost of \$6,300,000, which is incremental to the \$4,081,000 previously invested in these renovations, on approximately 25,000 square feet of the facility, leaving approximately 15,000 square feet available for future expansion. Our construction-in-progress at December 31, 2002 and 2003 includes \$3,992,000 and \$5,091,000, respectively, in renovations to this facility.

During the years ended December 31, 2001, 2002, and 2003, we capitalized \$70,000, \$150,000, and \$42,000, respectively, of interest expense in connection with our facility improvement projects. Depreciation expense was \$1,825,000, \$2,311,000, and \$4,047,000 for the years ended December 31, 2001, 2002, and 2003, respectively. During the year ended December 31, 2003, we recorded a loss on disposition of property and equipment of \$264,000.

NOTE 5. ACQUIRED INTELLECTUAL PROPERTY

In 1999, we acquired the carbohydrate-manufacturing patents, licenses, and other intellectual property of Cytel Corporation for aggregate consideration of \$4,750,000. The acquired intellectual property consists of core technology with alternative future uses. The acquired intellectual

property balance is being amortized to research and development expense in our statements of operations over eight years, which is the estimated useful life of the technology. Amortization expense relating to the acquired intellectual property was \$598,000, \$598,000, and \$597,000, respectively, for each of the years ended December 31, 2001, 2002, and 2003.

NOTE 6. OTHER ASSETS**> Investment in Convertible Preferred Stock**

In 2000, we made an investment of \$1,250,000 in Series A convertible preferred stock of Neuronix, Inc., and entered into a research and development collaboration with Neuronix for the discovery and development of drugs for treating Parkinson's disease and other neurological diseases. The collaboration agreement provides for each of Neose and Neuronix to perform and fund specific tasks, and to share in any financial benefits of the collaboration. During the year ended December 31, 2003, we did not incur any research and development expense related to this collaboration. We incurred research and development expense related to this collaboration of \$1,045,000 and \$297,000 during the years ended December 31, 2001 and 2002, respectively. We recorded the equity investment at cost. In October 2003, Neuronix informed us that they were nearing completion of a Series C equity financing, under which Series C and Series B Neuronix investors would have an aggregate liquidation preference that is senior to the Series A liquidation preference and exceeds the assumed post-money valuation of Neuronix. As a result, we reduced the carrying value of our equity investment to zero as of September 30, 2003 by recording a non-cash charge, which is reflected as an impairment of equity securities in our statements of operations.

> Receivable from Related Party

In 2001, we entered into a tuition reimbursement agreement with an employee who subsequently became an executive officer. Under the agreement, we agreed to lend the amounts necessary to pay for the employee's tuition payments and related costs and fees. Interest accrues on the loan at 4.71% per year, and is payable annually beginning in May 2002. We have agreed to forgive repayment of the principal amount outstanding in four equal, annual installments commencing in May 2004 if the employee remains employed by us on each forgiveness date. We will forgive the accrued interest on its annual due date and, if the employee is terminated without cause, we will forgive all outstanding principal and interest. During 2003, we forgave accrued interest of \$8,000. As of December 31, 2002 and 2003, the amounts outstanding under the agreement, including accrued interest, were \$121,000 and \$118,000, respectively.



NOTES TO FINANCIAL STATEMENTS CONTINUED

NOTE 7. LONG-TERM DEBT AND CAPITAL LEASE OBLIGATIONS

Long-term debt and capital lease obligations consisted of the following (in thousands):

December 31,	2002	2003
Industrial development authority bonds	\$ 5,100	\$ 3,900
Equipment loans	2,261	6,082
Capital lease obligations	50	619
	7,411	10,601
Less current portion	(1,851)	(2,231)
	\$ 5,560	\$ 8,370

Minimum principal repayments of long-term debt and capital lease obligations as of December 31, 2003 were as follows (in thousands): 2004—\$2,231; 2005—\$3,335; 2006—\$2,436; 2007—\$1,328; 2008—\$927; and thereafter—\$344. Because we expect to refinance our Industrial Development Authority bonds during the first quarter of 2004 under a credit agreement entered into in January 2004, we have adjusted the minimum principal repayments relating to the bonds to reflect principal repayment schedule of the new debt. Pursuant to Statement of Financial Accounting Standards No. 6, "Classification of Short-Term Obligations Expected to Be Refinanced (SFAS No. 6)," short-term obligations, such as the \$1,200,000 principal payment due during 2004 under the terms of our taxable Industrial Development Authority bonds, should be excluded from current liabilities if a financing agreement for refinancing of the short-term agreement meets certain criteria. The existing credit agreement with our bank meets the criteria specified in SFAS No. 6. Therefore, we reclassified the \$1,200,000 due in 2004 under the terms of the taxable bonds as a long-term liability.

> Credit Agreement

In January 2004, we borrowed \$6,200,000 from a bank for the purpose of funding improvements to our leased facility in Horsham, PA. The credit agreement with our bank provides for us to borrow from the bank an additional \$1,800,000 and to utilize \$1,100,000 of our restricted cash for the purpose of paying in full the \$2,900,000 outstanding of our taxable Industrial Development Authority bonds, which payment we expect to occur during the first quarter of 2004. During the first quarter of 2004, we expect to enter into another agreement with the bank for it to acquire and reissue the \$1,000,000 outstanding of our tax-exempt Industrial Development Authority bonds. If the tax-exempt bond acquisition described above does not occur, the existing credit agreement provides for us to borrow an additional \$1,000,000 for the purpose of paying in full the outstanding amount of the tax-exempt Industrial Development Authority bonds.

Initially, the interest rate on the bonds will vary quarterly, depending on LIBOR rates. We will have the option each quarter to incur interest on the outstanding principal at a LIBOR-based variable interest rate or a fixed rate offered by our bank.

If the tax-exempt bond acquisition described above occurs, we will make quarterly, interest-only payments on the related \$1,000,000 debt for ten years followed by a single repayment of principal at the end of the ten-year loan period. For the debt outstanding under the existing credit agreement, we will make quarterly, interest-only payments through March 31, 2005. Commencing on March 31, 2005, we will make quarterly principal and interest payments over the remaining nine years of the ten-year loan period. The outstanding debt will be \$8,000,000 if the tax-exempt bond acquisition described above occurs and \$9,000,000 if the tax-exempt bond acquisition described above does not occur.

To provide credit support for the agreement, we granted a second mortgage to our bank on the land and building where our present headquarters are located, as well as on improvements, certain equipment, and other tangible personal property. The second mortgage will automatically convert to a first mortgage upon payment in full of our Industrial Development Authority Bonds, which payment we expect to occur during the first quarter of 2004. In the credit agreement, we agreed to limit our total outstanding debt to \$22,000,000. After using a portion of the proceeds to repay existing debt, our total debt outstanding will be approximately \$15,700,000. At any time after the fourth year of the loan period, or if we fail to maintain a minimum required cash and short-term investments balance of at least \$22,000,000, our bank has the option to require additional collateral from us in the form of a letter of credit or a security interest in certain cash and short-term investments.

> Industrial Development Authority Bonds

In 1997, we issued, through the Montgomery County (Pennsylvania) Industrial Development Authority, \$9,400,000 of taxable and tax-exempt bonds, of which \$3,900,000 was outstanding as of December 31, 2003. As mentioned above, we expect during the first quarter of 2004 to pay in full the outstanding loan balance of the taxable bonds and to have our bank acquire and reissue the tax-exempt bonds.

Pursuant to Statement of Financial Accounting Standards No. 6, "Classification of Short-Term Obligations Expected to Be Refinanced (SFAS No. 6)," short-term obligations, such as the \$1,200,000 principal payment due during 2004 under the terms of our taxable Industrial Development Authority bonds, should be excluded from current liabilities if a financing agreement for refinancing of the short-term agreement meets certain criteria. The existing credit agreement with our bank meets

the criteria specified in SFAS No. 6. Therefore, we reclassified the \$1,200,000 due in 2004 under the terms of the taxable bonds as a long-term liability.

The bonds are supported by an AA-rated letter of credit, and a reimbursement agreement between our bank and the letter of credit issuer. The interest rate on the bonds varies weekly, depending on market rates for AA-rated taxable and tax-exempt obligations, respectively. During 2001, 2002, and 2003, the weighted-average, effective interest rate was 5.3%, 3.3%, and 2.7% per year, including letter-of-credit and other fees.

The terms of the bond issuance provide for monthly, interest-only payments and a single repayment of principal at the end of the twenty-year life of the bonds. However, under our agreement with our bank, we make monthly payments to an escrow account to provide for an annual prepayment of principal. As of December 31, 2003, we had restricted funds relating to the taxable bonds of \$901,000, which consisted of our monthly payments to an escrow account plus interest earned on the balance of the escrow account. During the first quarter of 2004, we expect to use the restricted funds and a portion of the proceeds under the credit agreement we entered into in January 2004 to pay in full the outstanding loan balance of the taxable bonds.

To provide credit support for this arrangement, we granted a first mortgage on land, building, improvements, and certain equipment to our bank. The net book value of the pledged assets was \$20,899,000 as of December 31, 2003. We also agreed to maintain a minimum required cash and short-term investments balance of at least two times the outstanding loan balance. If we fail to comply with this covenant, we are required to deposit with the lender cash collateral up to, but not more than, the unpaid balance of the loan. At December 31, 2003, we were required to maintain \$7,800,000 of cash and short-term investments.

> Equipment Loans

In December 2003, we borrowed \$1,201,000 secured by laboratory equipment and facility improvements, which had a book value of \$1,207,000 as of December 31, 2003. The terms of the financing require us to pay monthly principal and interest payments over 48 months at an interest rate of 8.66%.

In September 2003, we borrowed \$831,000 secured by laboratory equipment and facility improvements, which had a book value of \$712,000 as of December 31, 2003. The terms of the financing require us to pay monthly principal and interest payments over 48 months at an interest rate of 8.35%.

In March 2003, we borrowed \$2,954,000 secured by laboratory equipment, which had a book value of \$2,703,000 as of December 31, 2003. The terms of the financing require us to pay monthly principal and interest payments over 42 months at an annual interest rate of 8.35%.

During 2002, we borrowed \$2,261,000 secured by laboratory equipment, which had a book value of \$1,868,000 as of December 31, 2003. We are required to make monthly principal and interest payments at an annual interest rate of 8.00% over a three-year period ending January 2006.

> Capital Lease Obligations

In September 2003, we entered into a capital lease obligation for equipment with a book value of \$354,000, which was calculated using an assumed incremental annual borrowing rate of 7.96%. The terms of the lease required us to make an initial payment of \$90,000 followed by monthly payments through September 2006. This equipment had an aggregate net book value of \$325,000 as of December 31, 2003. We also entered into a capital lease obligation during September 2003 for software with a fair value of \$60,000. The terms of the lease require us to make monthly payments through September 2008. As of December 31, 2003, this software had a net book value of \$57,000.

During the quarter ended June 30, 2003, we entered into various capital lease obligations for equipment and software with an aggregate book value of \$373,000, which was calculated using an assumed incremental annual borrowing rate of 8.35%. We are required to make monthly payments on each lease. The leases have expiration dates ranging from April 2006 to June 2006. As of December 31, 2003, the aggregate net book value of the assets under these leases was \$57,000.

In November 2002, we entered into a capital lease obligation for computer equipment that had a book value of \$50,000. The lease has an imputed interest rate of 6.2%. We are required to make monthly payments over a three-year period ending November 2005. As of December 31, 2003, this computer equipment had an aggregate net book value of \$33,000.



NOTES TO FINANCIAL STATEMENTS CONTINUED

NOTE 8. ACCRUED EXPENSES

Accrued expenses consisted of the following (in thousands):

December 31,	2002	2003
Property and equipment	\$ 102	\$ 855
Professional fees	500	444
Employee relocation	315	349
Outside research expenses	573	142
Other expenses	390	643
	\$ 1,880	\$ 2,433

NOTE 9. STOCKHOLDERS' EQUITY

> Common Stock

In September 2003, we sold 2,655,557 shares of common stock in a registered offering to a group of institutional and individual investors at a price of \$9.00 per share, generating net proceeds of \$22,377,000.

In February 2003, we sold 2,866,763 shares of common stock in a private placement to a group of institutional and individual investors at a price of \$6.00 per share, generating net proceeds of \$16,320,000.

In March 2000, we offered and sold 2,300,000 shares of our common stock at a public offering price of \$32.00 per share. Our net proceeds from the offering after the payment of underwriting fees and offering expenses were \$68,605,000.

In June 1999, we sold 1,500,000 shares of common stock in a private placement to a group of institutional and individual investors at a price of \$9.50 per share, generating net proceeds of \$13,416,000. In January 1999, we sold 286,097 shares of common stock to Johnson & Johnson Development Corporation at a price of \$13.98 per share, generating net proceeds of \$4,000,000.

In January 1997, we sold 1,250,000 shares of common stock in a public offering at a price of \$17.50 per share. Our net proceeds from this offering after the payment of placement fees and offering expenses were \$20,339,000.

Our initial public offering closed in February 1996. We sold 2,587,500 shares of common stock, which included the exercise of the underwriters' over-allotment option in March 1996, at a price of \$12.50 per share. Our net proceeds from this offering after the underwriting discount and payment of offering expenses were \$29,127,000. In connection with this offering, all outstanding shares of Series A, C, D, E, and F Convertible Preferred Stock converted into 2,410,702 shares of common stock.

> Shareholder Rights Plan

In September 1997, we adopted a Shareholder Rights Plan. Under this plan, which was amended in December 1998, holders of common stock are entitled to receive one right for each share of common stock held. Separate rights certificates would be issued and become exercisable if any acquiring party either accumulates or announces an offer to acquire at least 15% of our common stock. Each right will entitle any holder who owns less than 15% of our common stock to buy one one-hundredth share of the Series A Junior Participating Preferred Stock at an exercise price of \$150. Each one one-hundredth share of the Series A Junior Participating Preferred Stock is essentially equivalent to one share of our common stock. If an acquiring party accumulates at least 15% of our common stock, each right entitles any holder who owns less than 15% of our common stock to purchase for \$150 either \$300 worth of our common stock or \$300 worth of the 15% acquirer's common stock. In November 2000, the Plan was amended to increase the threshold from 15% to 20% for Kopp Investment Advisors, Inc. and related parties. In June 2002 and October 2002, the Plan was amended to increase the threshold to 20% and 25%, respectively, for Eastbourne Capital Management, LLC and related parties. The rights expire in September 2007 and may be redeemed by us at a price of \$.01 per right at any time up to ten days after they become exercisable.

NOTE 10. COMPENSATION PLANS

> Stock Option Plans

We have three stock option plans, the 1991, 1992, and 1995 Stock Option Plans, under which a total of 5,876,666 shares of common stock have been reserved. In addition, we granted nonqualified stock options outside of these plans in 1995 to two consultants to purchase an aggregate of 69,998 shares and in 2002 to our Chief Executive Officer and President to purchase 487,520 shares. The 1995 Stock Option Plan, which incorporates the two predecessor plans, provides for the granting of both incentive stock options and nonqualified stock options to our employees, officers, directors, and consultants. In addition, the plan allows us to issue shares of common stock directly either through the immediate purchase of shares or as a bonus tied to either an individual's performance or our attainment of prescribed milestones. Incentive stock options may not be granted at an exercise price less than the fair market value on the date of grant. In addition, the plan includes stock appreciation rights to be granted at our discretion. The stock options are exercisable over a period, which may not exceed ten years from the date of grant, determined by our board of directors. A summary of the status of stock options as of December 31, 2001, 2002, 2003, and changes during each of the years then ended, is presented below:

	2001		2002		2003	
	Number Outstanding	Weighted-Average Exercise Price Per Share	Number Outstanding	Weighted-Average Exercise Price Per Share	Number Outstanding	Weighted-Average Exercise Price Per Share
Balance as of January 1	2,506,901	\$ 16.61	3,112,256	\$ 20.39	4,326,869	\$ 19.66
Granted	789,035	32.48	1,588,721	16.92	668,320	8.44
Exercised	(79,055)	11.28	(209,307)	7.42	(62,780)	2.74
Canceled	(104,625)	27.98	(164,801)	22.49	(593,810)	19.51
Balance as of December 31	3,112,256	\$ 20.39	4,326,869	\$ 19.66	4,338,599	\$ 18.20
Options exercisable as of December 31	1,782,271	\$ 14.86	2,041,726	\$ 17.86	2,420,961	\$ 19.03

The following table summarizes information about stock options outstanding as of December 31, 2003:

Range of Exercise Prices	Options Outstanding			Options Exercisable		
	Number Outstanding	Weighted-Average Remaining Life (Years)	Weighted-Average Exercise Price	Number Exercisable	Weighted-Average Exercise Price	
\$ 0.90—\$ 7.32	99,389	4.4	\$ 4.38	83,189	\$ 3.82	
\$ 7.45—\$ 10.62	1,642,902	8.6	\$ 8.55	571,130	\$ 9.11	
\$ 11.15—\$ 15.13	855,360	4.8	\$ 13.51	747,135	\$ 13.79	
\$ 15.25—\$ 21.11	194,232	5.1	\$ 18.96	151,732	\$ 18.57	
\$ 23.00—\$ 31.75	660,966	7.3	\$ 28.46	421,191	\$ 28.41	
\$ 32.05—\$ 41.13	885,750	7.9	\$ 34.35	446,584	\$ 34.63	
	4,338,599	7.2	\$ 18.20	2,420,961	\$ 19.03	



NOTES TO FINANCIAL STATEMENTS CONTINUED

> Fair Value Disclosures

We have elected to adopt only the disclosure provisions of SFAS No. 123. Accordingly, we apply APB 25 and related interpretations in accounting for our stock-based employee compensation. We record deferred compensation for option grants to employees for the amount, if any, by which the market price per share exceeds the exercise price per share. We amortize deferred compensation over the vesting periods of each option. We recognized \$125,000, \$171,000, and \$100,000 of compensation expense related to employee stock options for the years ended December 31, 2001, 2002, and 2003, respectively. In addition, we recorded \$825,000 and \$1,608,000 of expense related to the modification of certain stock options to former employees for the years ended December 31, 2001 and 2002. See Note 12 for a description of separation and retirement agreements.

The weighted-average fair value of options granted in 2001, 2002, and 2003 was \$22.55, \$12.81, and \$5.76, respectively. The fair value of each option grant was estimated on the date of grant using the Black-Scholes option-pricing model. We used the following weighted-average assumptions for 2001, 2002, and 2003 grants, respectively: risk-free interest rate of 4.9%, 4.2%, and 3.0%; expected life of 6.1, 6.7, and 5.5 years; volatility of 75%, 80%, and 80%; and a dividend yield of zero. The weighted-average fair value of employee purchase rights granted under our employee stock purchase plan (see below) in 2001, 2002, and 2003 was \$11.60, \$15.37, and \$19.79, respectively. The fair value of the purchase rights was estimated using the Black-Scholes model with the following weighted-average assumptions for 2001, 2002, and 2003, respectively: risk-free interest rate of 4.6%, 2.9%, and 2.9%; expected life of 16, 17, and 22 months; volatility of 75%, 80%, and 80%; and a dividend yield of zero.

A summary of options granted at exercise prices equal to, greater than, and less than the market price on the date of grant is presented below:

Year Ended December 31,	2001	2002	2003
Exercise Price = Market Value			
Options granted	610,400	1,578,800	659,732
Weighted-average exercise price	\$ 30.96	\$ 16.98	\$ 8.51
Weighted-average fair value	\$ 21.29	\$ 12.79	\$ 5.73
Exercise Price > Market Value			
Options granted	—	—	—
Weighted-average exercise price	\$ —	\$ —	\$ —
Weighted-average fair value	\$ —	\$ —	\$ —
Exercise Price < Market Value			
Options granted	178,635	9,921	8,588
Weighted-average exercise price	\$ 37.67	\$ 6.00	\$ 3.26
Weighted-average fair value	\$ 26.85	\$ 15.46	\$ 8.18

> Non-employee Stock Options

During the years ended December 31, 2001 and 2003, we recognized \$463,000 and \$44,000, respectively, of compensation expense in connection with the vesting of stock options granted to non-employees. During the year ended December 31, 2002, we recognized a gain of \$598,000 in connection with the vesting of stock options granted to non-employees. The compensation expense or gain was based on each option's estimated fair value, which was calculated using the Black-Scholes option-pricing model. Because we re-value each option over the related vesting term in accordance with EITF 96-18, increases in our stock price result in increased expense while decreases in our stock price result in a gain. At December 31, 2002, our closing stock price was lower than at December 31, 2001 and, therefore, we recognized a gain during 2002.

> Employee Stock Purchase Plan

We maintain an employee stock purchase plan, or ESPP, for which 183,000 shares are reserved for issuance. The ESPP allows any eligible employee the opportunity to purchase shares of our common stock through payroll deductions. The ESPP provides for successive, two-year offering periods, each of which contains four semiannual purchase periods. The purchase price at the end of each purchase period is 85% of the lower of the market price per share on the employee's entry date into the offering period or the market price per share on the purchase date. Any employee who owns less than 5% of our common stock may purchase up to the lesser of:

- 10% of his or her eligible compensation;
- 1,000 shares per purchase; or
- the number of shares per year that does not exceed the quotient of \$25,000 divided by the market price per share on the employee's entry date into the offering period.

A total of 42,327 shares of common stock remained available for issuance under the ESPP as of December 31, 2003. The total purchases of common stock under the ESPP during the years ended December 31, 2001, 2002, and 2003, were 17,790 shares at a total purchase price of \$335,000, 32,149 shares at a total purchase price of \$384,000, and 25,836 shares at a total purchase price of \$196,000, respectively. We have not recorded any compensation expense for the ESPP. In connection with the employee stock purchases occurring in 2003, we reissued 6,000 shares of treasury stock, which were originally acquired in 2001 for \$175,000.

> 401(k) Plan

We maintain a 401(k) Savings Plan (401(k) Plan) for our employees. Employee contributions are voluntary and are determined on an individual basis, with a maximum annual amount equal to the lesser of the maximum amount allowable under federal income tax regulations or 15% of the participant's compensation. We match employee contributions up to specified limits. We contributed \$149,000, \$176,000, and \$216,000 to the 401(k) Plan for the years ended December 31, 2001, 2002, and 2003, respectively.

NOTE 11. REVENUES FROM COLLABORATIVE AGREEMENTS

Our revenues from collaborative agreements have historically been derived from a few major collaborators. Our collaborative agreements have had some or all of the following elements: upfront fees, research and development funding, milestone revenues, and royalties on product sales.

In November 2003, we entered into two research, development and license agreements with Novo Nordisk A/S to use our GlycoPEGylation technology to develop three next-generation proteins within Novo Nordisk's therapeutic areas, one of which is currently marketed by them. Under the terms of the new agreements, we received a non-refundable, upfront fee of \$4,300,000. We deferred the upfront fee, and will amortize this amount over an expected performance period of five years. We will also receive up to \$51,300,000 in milestone payments based on the progress of the programs. Novo Nordisk is responsible for funding our research and development activities under the agreements, and we will receive royalties on sales of any products commercialized under the agreements. In addition, we could receive additional milestones and royalties on new indications for the two proteins not currently marketed by Novo Nordisk. During the year ended December 31, 2003, Novo Nordisk accounted for \$694,000, or 48%, of our revenues, of which \$107,000 represented amortization of the upfront fee. During the quarter ended June 30, 2003, we entered into a license agreement with a company, which accounted for \$400,000, or 28%, of our revenues during the year ended December 31, 2003.

During the years ended December 31, 2001, 2002, and 2003, Wyeth accounted for \$1,167,000, \$4,472,000, and \$250,000, respectively, of our collaborative revenues. These amounts represented 92%, 93%, and 17%, of our collaborative revenues during the years ended December 31, 2001, 2002, and 2003, respectively. During 2002, we recognized \$3,750,000 related to one of our Wyeth collaborations, which was terminated in September 2002. Of this amount, \$1,000,000 was non-cash, and represented the recognition of an upfront fee, which we received from Wyeth in 2001. We deferred the upfront fee, and amortized this amount as revenue over the expected performance period of the related Wyeth agreement. During 2003, we completed activities related to our other Wyeth collaboration, and recorded as revenue the last scheduled payment for research funding of \$250,000, which we had received in 2002.

NOTE 12. SEPARATION AND RETIREMENT AGREEMENTS

In 2002, we entered into a Separation and Consulting Agreement with our former Chief Executive Officer, Stephen A. Roth. Under this agreement, we agreed to provide medical benefits to Dr. Roth and to pay him \$39,622 per month for 12 months. During 2002, we recorded severance expense related to this agreement of \$309,000, which represented the present value of his future benefit payments.

Prior to March 29, 2003, Dr. Roth had the right to extend his non-competition and non-solicitation commitments for two additional years by entering into a separate non-competition agreement. Dr. Roth extended his commitments in March 2003 and, therefore, we will pay him \$39,622 per month for 24 additional months and, should he leave our board of directors during the additional two-year period, we will continue his stock option vesting and exercisability. During 2003, we recorded a liability of \$882,000, which represented the present value of the future payments, and a corresponding asset for the value of the non-competition commitment. The asset will be amortized to marketing, general and administrative expense on our statements of operations over the two-year term of the agreement. As of December 31, 2003, the present value of remaining minimum payments under this agreement was approximately \$528,000.



NOTES TO FINANCIAL STATEMENTS CONTINUED

In 2002, we entered into a retirement agreement with our Vice President, Research. Under the agreement, he terminated his employment effective June 30, 2002. We have committed to pay a retirement benefit over a five-year period. We continued to provide health insurance benefits through December 31, 2003. During 2002, we recorded severance expense related to this agreement of \$516,000, which represented the present value of his future retirement benefit and is included in research and development expense on our statements of operations. In addition, we extended the period during which he may exercise his stock options and recorded a non-cash severance charge associated with this option modification of \$1,608,000, which is included in research and development expense on our statements of operations.

NOTE 13. OTHER INCOME

In 2000, we invested \$562,500 in an 8% convertible subordinated debenture, which included a warrant to purchase shares of common stock, issued by Novazyme Pharmaceuticals, Inc. The investment was charged to research and development expense in our statement of operations for 2000 due to uncertainty regarding realizability. In March 2001, Novazyme committed to pay us \$1,653,000 million in November 2002 in exchange for restructuring our agreement. In accordance with Statement of Financial Accounting Standards No. 115, "Accounting for Certain Investments in Debt and Equity Securities," we did not record the \$1,653,000 due to uncertainty regarding the fair value of the note, thereby reducing our cost basis to zero. In September 2001, Genzyme General acquired Novazyme. As a result, we exercised our warrant to purchase shares of Novazyme, converted our debenture into shares of Novazyme, and exchanged our shares of Novazyme for shares of Genzyme. In 2001, we realized a gain on the sale of Genzyme shares of \$6,120,000, which was reflected as other income in our statement of operations. Genzyme also assumed Novazyme's obligation to pay us \$1,653,000. In 2002, Genzyme paid us \$1,653,000, which resulted in the recognition of a gain that was reflected as other income in our statements of operations.

NOTE 14. COMMITMENTS**> Leases**

In April 2001, we entered into a lease agreement for approximately 10,000 square feet of laboratory and office space in California. The initial term of the lease ends in March 2006, at which time we have an option to extend the lease for an additional five years. In July 2001, we entered into a lease agreement for approximately 5,000 square feet of office and warehouse space in Pennsylvania. The lease term expires in December 2004. In February 2002, we entered into a lease agreement for approximately 40,000 square feet of laboratory and office space in Pennsylvania. The initial term of the lease ends in July 2022, at which time we have an option to extend the lease for an additional five years, followed by another option to extend the lease for an additional four and one-half years. Our rental expense for the years ended December 31, 2001, 2002, and 2003 was \$248,000, \$583,000, and \$923,000, respectively. Minimum future annual payments under our operating lease agreements as of December 31, 2003 were as follows (in thousands): 2004—\$792; 2005—\$763; 2006—\$524; 2007—\$445; 2008—\$454; and thereafter—\$7,147.

> License Agreements

We have entered into agreements with various entities under which we have been granted licenses to use patent rights and technology. Typically, these agreements will terminate upon the expiration of the applicable patent rights, and require us to reimburse the licensor for fees related to the acquisition and maintenance of the patents licensed to us. In addition, we usually are required to pay royalties to the licensor based either on sales of applicable products by us or specified license fees, milestone fees, and royalties received by us from sublicensees, or both.

NOTE 15. INCOME TAXES

As of December 31, 2003, we had net operating loss carryforwards for federal and state income tax purposes of approximately \$44,638,000 and \$8,810,000, respectively. In addition, we had federal research and development credit carryforwards of approximately \$4,236,000. All of these carryforwards begin to expire in 2005. Approximately \$9,428,000 of the federal net operating loss carryforwards result from tax deductions related to equity-based compensation, which is considered a capital contribution, and not a tax benefit, for financial reporting purposes. Due to the uncertainty surrounding the realization of the tax benefit associated with our federal and state carryforwards, we have provided a full valuation allowance against these tax benefits. In addition, pursuant to the Tax Reform Act of 1986, the annual utilization of our net operating loss carryforwards will be limited. We do not believe that these limitations will have a material adverse impact on the utilization of our net operating loss carryforwards. The approximate income tax effect of each type of carryforward and temporary difference is as follows (in thousands):

December 31,	2002	2003
Benefit of net operating loss carryforwards	\$ 1,388	\$ 12,230
Research and development credit carryforwards	3,217	4,236
Capitalized research and development	17,796	22,063
Start-up costs	15,827	13,617
Depreciation and amortization	5,410	5,789
Deferred compensation	1,978	—
Accrued expenses not currently deductible	534	864
Deferred revenue	102	1,702
	46,252	60,501
Valuation allowance	(46,252)	(60,501)
	\$ —	\$ —

NOTE 16. RELATED-PARTY TRANSACTION

We have a joint venture with McNeil Nutritionals to develop bulking agents for use in the food industry. We account for our investment in the joint venture under the equity method, under which we recognize our share of the income and losses of the joint venture. In 1999, we reduced the carrying value of our initial investment in the joint venture of \$345,000 to zero to reflect our share of the joint venture's losses. We recorded this

amount as research and development expense in our statement of operations. We will record our share of post-1999 losses of the joint venture only to the extent of our actual or committed investment in the joint venture.

The joint venture developed a process for making fructooligosaccharides and constructed a pilot facility in Athens, Georgia. In 2001, the joint venture closed the pilot facility and is exploring establishing a manufacturing arrangement with a third party to produce this or other bulking agents. As a result, we do not intend to commit the joint venture to make any further investments in facilities.

For the year ended December 31, 2003, the joint venture had a net loss and a loss from continuing operations of \$68,000. The joint venture had no revenues during 2003. As of December 31, 2003, the joint venture had no assets, \$150,000 of current liabilities, and \$8,580,000 of noncurrent liabilities, which consisted of amounts owed to McNeil Nutritionals.

During the years ended December 31, 2001, 2002, and 2003, we incurred expenses related to the joint venture of \$779,000, \$252,000, and \$21,000, respectively, which were reimbursed to us by the joint venture. These amounts have been reflected as a reduction of research and development expense in our statements of operations. As of December 31, 2003, the joint venture owed us \$10,000.

If the joint venture becomes profitable, we will recognize our share of the joint venture's profits only after the amount of our capital contributions to the joint venture is equivalent to our share of the joint venture's accumulated losses. As of December 31, 2003, the joint venture had an accumulated loss since inception of \$10,225,000. Until the joint venture is profitable, McNeil Nutritionals is required to fund, as a non-recourse, no-interest loan to the joint venture, all of the joint venture's aggregate capital expenditures in excess of an agreed-upon amount, and all of the joint venture's operating losses. The loan balance would be repayable by the joint venture to McNeil Nutritionals over a seven-year period commencing on the earlier of September 30, 2006 or the date on which Neose attains a 50% ownership interest in the joint venture after having had a lesser ownership interest. In the event of any dissolution of the joint venture, the loan balance would be payable to McNeil Nutritionals by the joint venture before any distribution of assets to us. As of December 31, 2003, the joint venture owed McNeil Nutritionals \$8,580,000.

CORPORATE INFORMATION

MARKET FOR COMMON STOCK

Our common stock is listed on the Nasdaq National Market System under the symbol NTEC. We commenced trading on the Nasdaq National Market on February 15, 1996.

As of March 15, 2003, there were approximately 200 holders of record and 3800 beneficial holders of our common stock. We have never declared or paid any cash dividends on our common stock. We intend to retain any future earnings to fund the development and growth of our business. Therefore, we do not anticipate paying any cash dividends in the foreseeable future. The following table sets forth the high and low closing sale prices of our common stock for the periods indicated.

COMMON STOCK PRICE

Year Ended December 31, 2002	High	Low
First Quarter	\$ 37.30	\$ 29.80
Second Quarter	32.58	9.07
Third Quarter	11.06	6.41
Fourth Quarter	14.00	5.90
Year Ended December 31, 2003	High	Low
First Quarter	\$ 9.31	\$ 6.03
Second Quarter	12.64	6.88
Third Quarter	11.06	8.50
Fourth Quarter	9.83	7.20

CORPORATE HEADQUARTERS

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215-315-9100 Fax
info@neose.com E-mail

CORPORATE WEB SITE

www.neose.com

ANNUAL MEETING

The annual meeting of shareholders will be held at 9:00 a.m. on Thursday, May 6, 2004 at our corporate headquarters.

EXTERNAL LEGAL COUNSEL

Pepper Hamilton LLP
Philadelphia, PA

INDEPENDENT PUBLIC ACCOUNTANT

KPMG LLP
Philadelphia, PA

SEC FORM 10-K AND INVESTOR RELATIONS INFORMATION

You may obtain general information about us, including our Annual Report on Form 10-K, by contacting:

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215-315-9100 Fax
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TRANSFER AGENT & REGISTRAR

American Stock Transfer & Trust Company
40 Wall Street
New York, NY 10005
212-936-5100 Phone

The transfer agent is responsible for handling shareholder questions regarding lost stock certificates, address changes and changes of ownership or name in which shares are held.

CORPORATE INFORMATION

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President and Chief Executive Officer

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Executive Vice President, Commercial and Clinical Development

Joseph J. Villafranca, Ph.D.

Executive Vice President, Pharmaceutical Development and Operations

David A. Zopf, M.D.

Executive Vice President and Chief Scientific Officer

Robert I. Kriebel

Senior Vice President and Chief Financial Officer

Debra J. Poul

Senior Vice President and General Counsel

BOARD OF DIRECTORS

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Chairman of the Board, President and Chief Executive Officer
Neose Technologies, Inc.

Brian H. Dovey

Managing Member, Domain Associates, L.L.C.

L. Patrick Gage, Ph.D.

Former President, Wyeth Research

William F. Hamilton, Ph.D.

The Wharton School, University of Pennsylvania

Douglas J. MacMaster, Jr.

Former Senior Vice President, Merck & Co., Inc.

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President, MHR Fund Management LLC

Stephen A. Roth, Ph.D.

President and CEO, Immune Control, Inc.

Lowell E. Sears

Chairman and CEO, Sears Capital Management

Elizabeth H.S. Wyatt

Former Vice President, Corporate Licensing, Merck & Co., Inc.

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