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SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2002

or

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

Commission File Number 0-15006

AVANT IMMUNOTHERAPEUTICS, INC.

(Exact name of registrant as specified in its charter)

Delaware	**13-3191702**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
119 Fourth Avenue, Needham, Massachusetts	**02494**
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: **(781) 433-0771**

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

Securities registered pursuant to Section 12(g) of the Act:
Common Stock, par value $.001

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

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

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

The aggregate market value of common stock held by non-affiliates as of June 28, 2002 was $67,713,408 (excludes shares held by directors and executive officers). Exclusion of shares held by any person should not be construed to indicate that such person possesses the power, direct or indirect, to direct or cause the actions of the management or policies of the registrant, or that such person is controlled by or under common control with the registrant. The number of shares of common stock outstanding at March 14, 2003 was: 60,468,690 shares.

Certain information contained in the registrant's proxy statement relating to its annual meeting of stockholders to be held on May 15, 2003 is incorporated by reference in Part III, Items 10, 11, 12 and 13.

Safe Harbor Statement under the Private Securities Litigation Reform Act of 1995: *This report on Form 10-K contains forward-looking statements within the meaning of the federal securities laws. You can identify forward-looking statements by the use of the words "believe," "expect," "anticipate," "intend," "estimate," "project," "will," "should," and other expressions which predict or indicate future events and trends to and which do not relate to historical matters. You should not rely on forward-looking statements, because they involve known and unknown risks, uncertainties and other factors, some of which are beyond the control of the Company. These risks, uncertainties and other factors may cause the actual results, performance or achievements of the Company to be materially different from the anticipated future results, performance or achievements expressed or implied by the forward-looking statements.*

Some of the factors that might cause these differences include the following: (1) the integration of the UPT technology and programs; (2) the ability to adapt AVANT's vectoring systems to develop new, safe and effective orally administered vaccines against anthrax and plague or any other microbes used as bioweapons; (3) the ability to successfully complete development and commercialization of CholeraGarde™ (Peru-15), Ty800, CETi-1 and of other products; (4) the cost, timing, scope and results of ongoing safety and efficacy trials of CholeraGarde™ (Peru-15), Ty800, CETi-1 and other preclinical and clinical testing; (5) the ability to successfully complete product research and further development, including animal, pre-clinical and clinical studies of CholeraGarde™ (Peru-15), Ty800, CETi-1 and other products; (6) the ability of the Company to manage multiple late stage clinical trials for a variety of product candidates; (7) the volume and profitability of product sales of Megan®Vac 1 and other future products; (8) changes in existing and potential relationships with corporate collaborators; (9) the cost, delivery and quality of clinical and commercial grade materials supplied by contract manufacturers (10) the timing, cost and uncertainty of obtaining regulatory approvals to use CholeraGarde™ (Peru-15) and Ty800, among other purposes, to protect travelers and people in endemic regions from diarrhea causing diseases, to use CETi-1, among other purposes, to raise serum HDL cholesterol levels and for other products; (11) the ability to obtain substantial additional funding; (12) the ability to develop and commercialize products before competitors; (13) the integration of Megan Health's business and programs; (14) the ability to retain certain members of management; and (15) other factors detailed from time to time in filings with the Securities and Exchange Commission. In addition, the factors described under "Risk Factors" in this report may result in these differences. You should carefully review all of these factors, and you should be aware that there may be other factors that could cause these differences. These forward-looking statements were based on information, plans and estimates at the date of this report, and we do not promise to update any forward-looking statements to reflect changes in underlying assumptions or factors, new information, future events or other changes.

PART I

Item 1. BUSINESS

A. General

As used herein, the terms "we", "us", "our", or "AVANT" refer to AVANT Immunotherapeutics, Inc., a Delaware corporation organized in 1983. We are a biopharmaceutical company that uses novel applications of immunology to prevent and treat diseases. AVANT is developing a broad portfolio of vaccines addressing a wide range of applications including bacterial and viral diseases, cardiovascular disease, biodefense and food safety. These include single-dose, oral vaccines that protect against important disease-causing agents and a novel, proprietary vaccine candidate for cholesterol management. AVANT's strategy is to demonstrate proof-of-concept for its products before leveraging their value through partnerships. Current collaborations encompass the development of an oral human rotavirus vaccine, vaccines to combat threats of biological warfare, and vaccines addressed to human food safety and animal health.

AVANT's focus is unlocking the power of the immune system to prevent and treat disease. We have assembled a broad portfolio of technologies and intellectual property that give us a strong competitive position in the vaccines arena and five of our vaccines are in clinical development. The development of immunotherapeutic vaccines like CETi-1 and the marriage of innovative vector delivery technologies with the unique VitriLife® manufacturing process represent the potential for a new generation of vaccines. Our goal is to become a leading developer of such innovative vaccines that address health care needs on a global basis. AVANT expects to make substantial progress this year in advancing a number of products in its pipeline to the later stages of clinical development.

We have actively developed and acquired innovative technologies—especially novel approaches to vaccine development. Today our broad intellectual property position allows us to respond quickly and apply our expertise in many different areas as opportunities and needs arise. For example, our vaccine technology for providing rapid protection against bacterial illnesses may prove useful for improving and expanding America's vaccine arsenal against microbial agents used in war or terrorist attacks.

AVANT is targeting its efforts where it can add the greatest value to the development of its products and technologies. Our goal is to demonstrate clinical proof-of-concept for each product, and then seek excellent partners to help see those products through to commercialization. This approach allows us to maximize the overall value of our technology and product portfolios while best ensuring the expeditious development of each individual product.

In January 2003, we completed the previously announced acquisition of the technology and intellectual property portfolio of Universal Preservation Technologies, Inc. (UPT), a privately held company based in San Diego, California, and licensed certain patent rights from Elan Drug Delivery Limited (a subsidiary of Elan Corporation plc). Through this transaction, AVANT has gained exclusive rights to UPT's VitriLife® process for use in AVANT's oral vaccines and certain other non-injectable applications.

On December 1, 2000, we acquired Megan Health, Inc., a Delaware corporation ("Megan"), pursuant to an Agreement and Plan of Merger dated as of November 20, 2000 by and among AVANT, AVANT Acquisition Corp., a Delaware corporation and our wholly-owned subsidiary, and Megan.

On August 21, 1998, we acquired Virus Research Institute, Inc. ("VRI"), a Delaware corporation, pursuant to an Agreement and Plan of Merger dated as of May 12, 1998 by and among AVANT, TC Merger Corp., a Delaware corporation and our wholly-owned subsidiary, and VRI.

Using our expertise in immunology, we are building business franchises in three major disease areas: cholesterol management, bacterial vaccines, and viral vaccines. Each of our business franchises addresses large market opportunities for which current therapies are inadequate or non-existent. We have pursued some of these opportunities independently in a highly focused manner. In other cases, we have leveraged the financial support and development capabilities of corporate and public sector partners to bring our development projects to fruition. The research we have so diligently pursued over the past several years has matured into an exciting portfolio of product candidates.

Our products derive from a broad set of complementary technologies with the ability to regulate T and B cell activity and enable the creation of preventative and therapeutic vaccines. We are using these technologies to develop vaccines and immunotherapeutics that prevent or treat disease caused by infectious organisms, and treatment vaccines that modify undesirable activity by the body's own proteins or cells. All of our products are in various stages of research and development. Below is a table of our currently active programs:

CURRENT PROGRAMS AND PARTNERSHIPS

Technology	Product	Indication/Field	Partner	Status
Immunotherapeutics	CETi-1	Cholesterol management	—	Phase II
Bacterial Vaccines				
Global Health	CholeraGarde™	Cholera	IVI	Phase IIb
	Ty800	Typhoid fever	NIH	I/II
Travelers'	ETEC	Enterotoxigenic E coli infection	—	Pre-clinical
	Shigella	Dysentery	—	Pre-clinical
	Campylobacter	*Campylobacter infection*	—	Pre-clinical
BioDefense	Injectable Anthrax Oral Anthrax & Plague	Anthrax infection Anthrax & Plague infections	DoD/DVC DoD/DVC and NIH	Phase I Pre-clinical
Food Safety and				
Animal Health	Megan®Vac 1	*Salmonella* infection in chicken	Lohmann	Marketed
	Megan®Egg	Salmonella infection in eggs	Lohmann	Field Studies
	Other Food Safety and Animal Health Vaccines	Bacterial contamination of food sources and animal health	Pfizer	Pre-clinical
Viral Vaccines	Rotarix™ Therapore®	Rotavirus infection Viral infection — HIV — Hepatitis	GlaxoSmithKline US Army —	Phase II Pre-clinical Pre-clinical

B. Strategy

AVANT'S strategy is to utilize our expertise to design and develop vaccines that have significant and growing market potential; to establish governmental and corporate alliances to fund development; and to commercialize our products either through corporate partners or, in appropriate circumstances, by our own direct selling efforts. Our goal is to demonstrate clinical proof-of-concept for each product, and then seek excellent partners to help see those products which we can not develop ourselves through to commercialization. This approach lets us maximize the overall value of our technology and product portfolios while best ensuring the expeditious development of each individual product. Implementation of this strategy is exemplified by the following lead programs:

Rotavirus Vaccine: Rotavirus is a major cause of diarrhea and vomiting in infants and children. No vaccine against rotavirus is currently on the market. We licensed an oral vaccine for rotavirus from a non-profit institution and initiated a Phase I clinical trial with the goal of licensing the vaccine to a major vaccine company. After completing Phase I studies and commencing a Phase II study, we licensed the vaccine to GlaxoSmithKline plc ("Glaxo"). The initial license fee from Glaxo partially funded the Phase II study. In 1999, after the study demonstrated 89% protection in a study involving 215 infants, Glaxo paid us an additional license fee and assumed full responsibility for funding and performing all remaining clinical development. AVANT expects Glaxo to initiate Phase III global clinical trials in 2003 of its investigational rotavirus vaccine, Rotarix™, a two-dose oral rotavirus vaccine which has been shown to be helpful in preventing rotavirus gastroenteritis ("RGE") disease in young children for at least two years following administration. Assuming product development and commercialization continues satisfactorily, we expect that Glaxo will pay us additional milestones and a royalty based on sales.

Cholesterol Management Vaccine: Atherosclerosis, the leading cause of morbidity and mortality in the United States and most of the Western world, is the accumulation of fatty deposits in the walls of blood vessels. Low blood levels of high-density lipoprotein (HDL, the so-called "good" cholesterol) are associated with increased risk of atherosclerosis, which in turn leads to heart disease and stroke. We are developing a novel, treatment vaccine (CETi-1) aimed at increasing levels of HDL. The vaccine stimulates the production of antibodies to cholesteryl ester transfer protein ("CETP"), which mediates the balance between HDL and LDL (low-density lipoprotein, or "bad" cholesterol). While billions of dollars of drugs that lower LDL are sold each year, the few drugs that increase HDL have failed to achieve market acceptance, largely due to undesirable side effects. Thus, we believe that a therapeutic vaccine that increases HDL with one or two injections a year would present a substantial market opportunity. In pre-clinical studies in rabbits, the CETi-1 vaccine increased HDL levels and significantly reduced atherosclerotic lesions in blood vessels as compared to an untreated control group. Our pre-clinical work on the vaccine was partially funded by almost $1 million in Small Business Innovation Research ("SBIR") grants.

AVANT completed a Phase I clinical trial in late 2000 and results indicated that the vaccine was very well tolerated in the 48 adult volunteers who participated in the study. The Phase I clinical study and its extension demonstrated an acceptable safety profile for the CETi-1 vaccine, as well as showed its ability to elicit antibody titers against CETP and suggested a dose-response relationship. AVANT is currently conducting a 200 patient placebo-controlled Phase II efficacy study of the CETi-1 vaccine in patients with low levels of HDL cholesterol. The objectives of the study are to evaluate the safety, immunogenicity and dose-response relationship of the CETi-1 product in patients who receive an initial immunization followed by boosters. The primary endpoint is the change in HDL cholesterol measured after the six-month booster and results are expected from the trial during the fourth quarter of 2003. As clinical data become available, we plan to seek a corporate partner to complete development and to commercialize the CETi-1 vaccine.

Bacterial Vaccines: AVANT is developing a series of single-dose, genetically-attenuated, live bacterial vaccines to prevent diarrhea and dysentery. These diarrheal vaccines are targeted to address the U.S. and European travelers' market as well as the healthcare requirements of developing countries, where for example the need for cholera and typhoid fever vaccines is particularly acute. We believe that vaccines for the travelers' market are appropriate indications for a small company such as AVANT to pursue independently with our own sales and marketing effort in the United States and with partners outside the United States.

We are developing a single dose, oral cholera vaccine using a live, genetically attenuated cholera strain. Based on this technology, discovered in academia, we have developed the vaccine through early Phase II trials. During 2001, AVANT announced results of a Phase IIb clinical trial conducted by the Walter Reed Army Institute of Research ("WRAIR") and the National Institutes of Health (the "NIH") with our investigational vaccine against cholera, called CholeraGarde™. Results of that study demonstrated the ability of AVANT's vaccine candidate to provide complete protection against moderate and severe diarrhea in vaccinated individuals challenged with live, virulent cholera. During 2002, AVANT completed a Phase II dose-ranging study with CholeraGarde™ which confirmed the safety and activity of this vaccine and supported the start of trials in December 2002 with the International Vaccine Institute ("IVI") in Bangladesh, where cholera is endemic.

Based on the same technology, AVANT has designed its Ty800 vaccine to offer rapid, single-dose protection against *Salmonella typhi*, the cause of typhoid fever. The National Institute of Allergy and Infectious Disease (the "NIAID") of the NIH and AVANT have entered into a cooperative agreement for the NIAID to conduct a Phase I in-patient dose ranging clinical trial aimed at demonstrating the safety and immunogenicity of the Ty800 typhoid fever vaccine. The NIAID trial seeks to confirm the safety and immunogenicity of the Ty800 oral vaccine observed in an earlier physician sponsored Ty800

vaccine study. We are also developing additional bacterial vaccines to prevent infection with *Shigella*, enterotoxigenic *E. coli* and *Campylobacter*—all important causes of severe diarrheal illness.

The attenuated live bacteria used to create AVANT's single-dose oral vaccines also can serve as vectors for the development of vaccines against other bacterial and viral diseases. By engineering key disease antigens into the DNA of the vector organisms, AVANT expects to be able to extend the protective ability of its single-dose oral vaccines to a wide variety of illnesses. We believe our vector technologies may prove useful for improving and expanding America's vaccine arsenal against microbial agents used in war or terrorist attacks. In this regard, AVANT has entered into two agreements with DynPort Vaccines Company LLC ("DVC") to utilize AVANT's vectored vaccine technologies to develop an injectable anthrax vaccine and an oral combination vaccine against anthrax and plague. Further, in October 2002, DVC announced the initiation of a Phase I clinical trial of a new injectable recombinant anthrax vaccine.

Factors that may significantly harm our commercial success, and ultimately the market price of our common stock, include announcements of technological innovations or new commercial products by our competitors, disclosure of unsuccessful results of clinical testing or regulatory proceedings and governmental approvals, adverse developments in patent or other proprietary rights, public concern about the safety of products developed by AVANT and general economic and market conditions.

C. Bacterial Vaccine Development Programs

Overview

Modern biotechnology offers great potential for bettering health conditions worldwide. New vaccine technologies, in particular, can provide avenues to disease prevention and treatment with notable advantages over drugs in terms of patient compliance and cost. They also offer strategies to solve global health problems, to protect both civilians and the military from biowarfare threats, and to increase the safety of our food supply. Our goal is to become a leading developer of innovative vaccines that address health care needs on a global basis. In this regard, we have recently completed the acquisition of VitriLife®, a new technology with the potential to reduce manufacturing costs and improve product stability, eliminating the need for vaccine refrigeration. With this technology and our *Cholera*- and *Salmonella*-vectored delivery technologies, we can now develop a new generation of vaccines that have an ideal product profile: safe and effective, oral, single-dose, rapidly protective and requiring no refrigeration.

AVANT is developing a series of single-dose, genetically-attenuated, live bacterial vaccines to protect travelers and endemic populations from diarrhea and dysentery. AVANT's single-dose oral vaccine technology is currently addressed to serious bacterial diseases, but combines the advantages of rapid onset of protection with the flexibility to address a variety of different causes of disease. The attenuated live bacteria used to create these vaccines can also serve as vectors for the development of vaccines against other bacterial and viral diseases. By engineering key disease antigens into the DNA of the vector organisms, AVANT can extend the protective ability of its single-dose oral vaccines to a wide variety of illnesses. Thus, our vector technologies may prove useful for improving and expanding America's vaccine arsenal against microbial agents used in war or terrorist attacks. AVANT has also partnered with Pfizer Inc ("Pfizer"), who will apply AVANT's vaccine technology to animal health and human food safety markets.

1. Global Health

AVANT's oral, bacterial vaccine technology can address the healthcare requirements of developing countries, where, for example, the need for cholera and typhoid vaccines is particularly acute. These vaccine technologies may provide avenues to disease prevention and treatment with notable advantages

over drugs in terms of ease of use, patient compliance, thermostability and cost. Thus, they may offer strategies to solve global health problems.

We are developing an attenuated form of the bacterium *Vibrio cholerae* as a potential cholera vaccine. In several Phase I/II clinical studies, single oral doses of the cholera vaccine, CholeraGarde™ (or Peru-15), were administered to more than 75 human subjects and shown to be safe, immunogenic and protective against infection with the virulent organism. In 1999, we announced the collaboration on a Phase IIb clinical trial of the Peru-15 vaccine with WRAIR and the NIH. AVANT and the NIAID of the NIH also signed a Clinical Trial Agreement that allowed for the clinical evaluation of the Peru-15 vaccine formulation at Children's Hospital in Cincinnati. AVANT and WRAIR have successfully manufactured clinical supplies of the vaccine at WRAIR's facility for use in the study.

The Phase IIb trial, which began in October 2000 at the Children's Hospital in Cincinnati, tested the safety, immunogenicity and protective capacity of the vaccine against a challenge with live virulent cholera. Results of the study demonstrated the ability of AVANT's vaccine candidate, CholeraGarde™, to provide complete protection against the trial's primary endpoint, moderate and severe diarrhea. During 2002, AVANT completed a Phase II dose-ranging study with CholeraGarde™ which confirmed the safety and activity of this vaccine and supported the start of trials in December 2002 with the IVI in Bangladesh where cholera is endemic.

AVANT has developed an oral vaccine to offer rapid, single-dose protection against *Salmonella typhi*, the cause of typhoid fever. The NIAID and AVANT have entered into a cooperative agreement for the NIAID to conduct a Phase I in-patient dose ranging clinical trial aimed at demonstrating the safety and immunogenicity of the Ty800 typhoid fever vaccine. The trial is planned for an NIAID funded clinical site using NIAID funded clinical material. The NIAID trial seeks to confirm the safety and immunogenicity of the Ty800 oral vaccine observed in an earlier physician sponsored Ty800 vaccine study.

2. Travelers' Vaccines

With our acquisition of Megan Health in 2000, AVANT gained access to technologies for developing vaccines against *Campylobacter* and enterotoxigenic *E. coli* (ETEC). When combined with our existing *Shigella* vaccine program, AVANT now has three travelers' vaccine programs in pre-clinical development—all addressing important causes of serious diarrheal diseases worldwide. AVANT is pursuing a strategy to develop a combination travelers' vaccine from these programs. Market research indicates that a two-vaccine combination product containing ETEC and either a *Shigella* or *Campylobacter* vaccine addressed to the travelers' market could achieve peak sales of over $600 million.

3. BioDefense Vaccine Programs

The attenuated live bacteria used to create AVANT's single-dose oral vaccines also can serve as vectors for the development of vaccines against other bacterial and viral diseases. By engineering key disease antigens into the DNA of the vector organisms, AVANT expects to be able to extend the protective ability of its single-dose oral vaccines to a wide variety of illnesses. We believe our vector technologies may prove useful for improving and expanding America's vaccine arsenal against microbial agents used in war or terrorist attacks.

In October 2001, AVANT granted DVC a license for exclusive rights to use certain components of AVANT's vaccine technology. In October 2002, DVC announced the initiation of a Phase I clinical trial of a new injectable recombinant anthrax vaccine in approximately 70 volunteers. The vaccine candidate consists of a highly purified protein—Protective Antigen—derived from the anthrax bacterium using recombinant technology and advance production processes licensed from AVANT. DVC hopes this vaccine will offer a safe, effective product to support the country's need for a new-generation anthrax vaccine. The Phase I trial will be conducted at WRAIR in conjunction with the Henry M. Jackson

Foundation. The study will evaluate tolerability, safety and immunogenicity of DVC's new vaccine being developed for the Department of Defense (the "DoD") through the Joint Vaccine Acquisition Program (JVAP).

In July 2002, AVANT was awarded a Phase I Small Business Innovation Research (SBIR) grant to support the development of the company's single oral-dose bacterial vectors to immunize people against anthrax. Vaccine delivery using live, attenuated bacteria is particularly well suited for situations where ease of administration and rapid onset of immunity are required, such as for protection against biological warfare agents. The NIAID of the NIH awarded this Live Attenuated Vaccines Against Anthrax grant, which provides approximately $125,000 in funding to AVANT over a twelve-month period.

Further, in January 2003, AVANT was awarded a subcontract to develop for the U.S. Department of Defense an oral combination vaccine against anthrax and plague using AVANT's proprietary vaccine technologies. Under the agreement, AVANT may receive in excess of $8 million over a two-year period, covering vaccine development through preclinical testing. AVANT executed the subcontract with DVC.

4. Animal Health and Food Safety Vaccine Programs

On December 1, 2000, AVANT acquired all of the outstanding capital stock of Megan, a company engaged in the discovery and development of human and animal vaccines using patented gene modification technologies. In connection with our acquisition of Megan, we entered into a licensing agreement with Pfizer whereby Pfizer has licensed from us Megan's technology for the development of animal health and food safety vaccines. In accordance with this agreement, Megan's existing poultry health and food safety products and development programs fall outside the Pfizer collaboration.

In addition to developing proprietary and patented bacterial gene technologies, Megan has commercialized two veterinary vaccines; Argus™ SC, licensed by the USDA in March 1998 and marketed by Intervet, Inc., and Megan®Vac 1, licensed by the USDA in November 1998 and currently marketed by Lohmann Animal Health International ("LAHI").

Existing Products: Megan®Vac 1 is a double gene-deleted modified vaccine for use in chickens for protection against multiple species and/or strains of Salmonella bacteria. The vaccine is administered to chicks at the hatchery in a spray cabinet with a field boost generally given at around two weeks of age. The objective of the vaccine is to eliminate or reduce the overall load of *Salmonella spp.* in the bird and environment, thus reducing bacteria levels on broiler carcasses in the processing plant. While the reduction of *Salmonella spp.* in the broiler may provide some direct health benefit to the chicken, the primary purpose of the vaccine is to increase food safety. Megan®Vac 1 is also registered in New Zealand. Registration activities are underway for South Korea, Canada, Israel, Turkey, Egypt and the Dominican Republic.

Megan®Vac 1 has also been used extensively (off-label) in commercial table-egg pullets. Pullets generally receive three vaccinations during the growing period and are protected throughout the lay period without further vaccination. In the case of table-egg layers, the primary objective is elimination or reduction of *Salmonella enteritidis* levels in the eggs, bird, and poultry house.

Products Under Development: Megan presently has one vaccine program in development for the poultry market. Megan®Egg, with USDA licensure expected in 2003, is from the same master seed as Megan®Vac 1 with titer, dosage recommendations, and product configuration specifically targeting the layer market.

Because AVANT's focus is on human health care, in September 2002 we appointed LAHI as the exclusive distributor of our Megan Health poultry vaccines in North America. LAHI, an established animal health company, is taking over marketing and distribution of Megan's currently marketed poultry products and assuming control of the late-stage food safety and animal health vaccines under development for the commercial poultry market.

D. Viral Vaccine Development Programs

1. Rotavirus Vaccine

We are developing a novel vaccine against rotavirus infection. Rotavirus, a major cause of diarrhea and vomiting in infants, affects approximately 80% of the approximately 4 million infants born each year in the United States. As a result, on an annual basis, about 500,000 infants require medical attention and 50,000 are hospitalized. The economic burden in the United States is estimated at over $1 billion in direct medical and indirect societal costs. We anticipate that in the United States a vaccine against rotavirus disease will become a universal pediatric vaccine. We have completed Phase I clinical trials of the orally delivered live human rotavirus vaccine selected to elicit a broadly protective immune response to the most prevalent strains of rotavirus. During 1997, we completed a Phase I/II clinical trial designed to define the optimal vaccine dose and optimal age for immunization. Based on the assessment of the safety and immunogenicity of the vaccine, we initiated a Phase II efficacy study in 1997. This trial, conducted at four U.S. medical centers, was designed to examine the vaccine's ability to prevent rotavirus disease and to further study the safety of the vaccine. A total of 215 infants were enrolled in the study and have been immunized with the vaccine. In 1998, we announced positive results from this trial, which were published in *Lancet* in July 1999. The results showed that approximately 90 percent of the vaccinated infants were protected from rotavirus disease and demonstrated a statistical significance at $p<0.001$. Examination of the safety data revealed only mild transient symptoms in a small number of infants.

AVANT and Glaxo are currently collaborating on the development and commercialization of our oral rotavirus vaccine, Rotarix™. As discussed under "F. Collaborative Agreements", with the successful completion of the Phase II clinical trial and the development by Glaxo of a viable manufacturing process, Glaxo has assumed financial responsibility for all subsequent clinical and development activities and paid us a milestone payment of $500,000. AVANT expects Glaxo to initiate global Phase III clinical trials of Rotarix™, a two-dose oral rotavirus vaccine which has been shown to be helpful in preventing RGE disease in young children for at least two years following administration, in the second half of 2003. Assuming product development and commercialization continues satisfactorily, we may receive additional milestone payments of up to $8.5 million upon the achievement of specified milestones. In addition, we will be entitled to royalties based on net sales of Rotarix™.

2. Therapore®

AVANT is developing a proprietary immunotherapeutic delivery system for the prevention and/or treatment of infectious diseases and some forms of cancers. During 1997, we received an exclusive worldwide license to Therapore® from Harvard College. In 1998, we received a non-exclusive license from the NIH to further secure our Therapore® technology rights. We have been conducting pre-clinical research to evaluate this system for the treatment of persistent viral infections, such as Hepatitis B, Hepatitis C, HIV and some forms of cancer.

Therapore® is composed of two bacterial proteins derived from *Bacillus anthracis* that in *in vivo* tests have delivered peptides to induce potent cell-mediated immune responses. These responses include the generation of long-lived cytotoxic T-lymphocytes (CTL) and alterations in the amounts of cellular cytokines produced, which may lead to the effective treatment of persistent viral infections and the resolution of some forms of cancer. Potential products utilizing Therapore® technology could include peptides or proteins from viruses such as Hepatitis B, Hepatitis C and HIV, all of which cause persistent infections, and from a range of cancers, including breast, ovarian, melanoma and prostate. Each of these indications represents a large market with a need for safe and effective treatments.

Early stage pre-clinical research studies indicate that Therapore® may be distinguished from other delivery systems. We believe that the therapeutic and preventative potential of Therapore® is significant for the following two reasons: (i) the targeting of Therapore® is highly efficient, such that in *in vivo* tests potent cell-mediated immune responses have been induced by the delivery of minute quantities of Therapore® constructs; and (ii) Therapore® has the potential to deliver large peptides and proteins for processing by normal cellular mechanisms, which may permit broad immune coverage in humans. As a result of these characteristics, we believe that Therapore®-delivered antigens will be capable of producing an enhanced cell-mediated response more efficiently and safely than other products currently under development by our competitors.

We plan to employ Therapore® to develop novel immunotherapeutics for the treatment of chronic viral infections and cancers. We have entered into a collaborative agreement for WRAIR to fund and perform the first human clinical trial of a Therapore®-based product, a vaccine candidate under development by the U.S. Army against HIV. This clinical trial of Therapore®-HIV is expected to begin in the first half of 2004. As clinical data becomes available, AVANT may seek a corporate partner to develop and to commercialize Therapore®. We have currently suspended substantially all in-house development efforts on Therapore® to focus on more advanced programs.

E. Therapeutic Programs

1. Cholesterol Management Vaccine

We are developing an immunotherapeutic vaccine against endogenous cholesteryl ester transfer protein ("CETP"), which may be useful in reducing risks associated with atherosclerosis. CETP is a key intermediary in the balance of HDL and LDL. We are developing this vaccine (CETi-1) to stimulate an immune response against CETP which we believe may improve the ratio of HDL to LDL cholesterol and reduce the progression of atherosclerosis. We have conducted preliminary studies of rabbits which had been administered the CETi-1 vaccine and fed a high-cholesterol, high-fat diet. In these studies, vaccine-treated rabbits exhibited reduced lesions in their blood vessels compared to a control group of untreated rabbits which developed significant blood vessel lesions. These studies have demonstrated, in animal models, the ability of CETi-1 vaccine to elevate HDL and reduce the development of blood vessel lesions.

Atherosclerosis is one of the leading causes of morbidity and mortality in the United States and most of the Western world. Current pharmacologic treatments require daily administration and can result in high costs and poor patient compliance. A vaccine directed at lowering CETP activity, such as the one we are developing, may offer several advantages over conventional approaches, including requiring less frequent dosing, lower costs, reduced side effects, and improved patient compliance.

In 1996, the NIH awarded us a $100,000 Phase I SBIR grant for the development of a novel transgenic rat atherosclerosis model, affording better comparison to human atherosclerosis. In early 1997, the NIH awarded us a second $100,000 Phase I SBIR grant to develop a novel plasmid-based vaccine to prevent or treat atherosclerosis. In late 1997, the NIH awarded us a $678,000 Phase II SBIR grant which provided funding over a two year period for the continued development of the novel

transgenic rat model of atherosclerosis. In 1998, we received a $96,000 Phase I SBIR grant from the NIH for the development of a novel peptide vaccine to prevent or treat atherosclerosis.

In June 1999, we initiated a double-blinded placebo controlled, Phase I clinical trial of our CETi-1 vaccine in adult volunteers. The object of the study was to demonstrate the safety of single administrations of the vaccine at four different dosage strengths. AVANT completed the Phase I clinical trial in late 2000 and results indicated that the vaccine was very well tolerated in the 48 adult volunteers who participated in the study. The only serious adverse reaction reported during the study (allergic reaction to shower gel) was not related to study medication. There were no differences in the safety profiles of placebo groups and active vaccine groups. In addition there was limited evidence of an immune response in one subject treated with the highest dose. In early 2001, AVANT announced results from a double-blinded placebo controlled extension of the earlier completed Phase I trial of the CETi-1 vaccine in healthy adult volunteers receiving a second dose of the vaccine. Results from the extension study showed measurable antibody titers in all dose groups treated with study medication and suggested a dose-response relationship.

These data were extremely helpful in moving the program forward to a placebo controlled Phase II study, which was initiated in August 2001, in approximately 200 patients with low levels of HDL cholesterol. The objectives of the study are to evaluate the safety, immunogenicity and dose-response relationship of the CETi-1 product in patients who receive an initial immunization followed by boosters. The primary endpoint is the change in HDL cholesterol measured after the six-month booster and results are expected from the trial during the fourth quarter of 2003. As clinical data become available, we plan to seek a corporate partner to complete development and to commercialize the CETi-1 vaccine.

2. Complement Inhibitors

We have been developing a new class of therapeutics that inhibit a part of the immune system called the complement system. The complement system is a series of proteins that are important initiators of the body's acute inflammatory response against disease, infection and injury. Excessive complement activation also plays a role in some persistent inflammatory conditions. Our lead compound, TP10, a soluble form of naturally occurring Complement Receptor 1, has effectively shown to inhibit the activation of the complement cascade in animal models. We believe that regulating the complement system could have therapeutic and prophylactic applications in several acute and chronic conditions, including reperfusion injury from surgery or ischemic disease, organ transplant, multiple sclerosis, rheumatoid arthritis, and myasthenia gravis. Medical problems that result from excessive complement activation represent multi-billion dollar market opportunities. In the United States, several million people are afflicted with these complement-mediated conditions.

In 1997, we entered into a collaborative agreement with Novartis relating to the development of TP10 for use in xenotransplantation (animal organs into humans) and allotransplantation (human to human organ transplantation). In July 1999, Novartis exercised its option to license TP10 for use in the field of transplantation. The decision to license TP10 resulted in a $6 million equity investment and license fee payment by Novartis which was received by AVANT in January 2000. As of September 6, 2002, Novartis and AVANT agreed to terminate the TP10 agreement pursuant to which Novartis paid a net termination fee of $1.9 million and returned to AVANT all pre-clinical and clinical TP10 material.

We elected to independently develop and commercialize TP10 for pediatric and adult cardiac surgery. In February 2002, AVANT announced that the results of a Phase II trial in adults undergoing cardiac surgery showed that TP10 failed to meet the trial's primary endpoint. The results showed that there were no clinically important differences between placebo and any of the four dose groups. TP10 was well tolerated with no significant differences in the safety profiles of the treatment groups.

In addition to TP10, AVANT has identified other product candidates to inhibit activation of the complement system. The lead candidate under research evaluation is a form of sCR1 (TP10) that has been modified by the addition of sialyl Lewis × (sLe^x) carbohydrate side chains yielding sCR1sLe^x (TP20). sLe^x is a carbohydrate which mediates binding of neutrophils to selectin proteins. Selectin-mediated binding of neutrophils to activated endothelial cells is a critical event in inflammation. We have confirmed the presence of the desired carbohydrate structures and confirmed the presence of both anti-complement and selectin-binding functions in *in vitro* experiments. Research results published in the July 1999 issue of *Science* showed that the TP20 molecule, which simultaneously blocks complement activation and cell-mediated inflammatory events, can significantly limit damage to cerebral tissue in a mouse model of ischemic stroke. TP20 may be effective in complement- and selectin-dependent indications such as stroke and myocardial infarction. We believe that TP20 has the ability to target the complement-inhibiting activity of sCR1 to the site of inflammation and, at the same time, inhibit the leukocyte/endothelial cell adhesion process.

Based on the outcomes of the TP10 trial in adult cardiovascular surgery, AVANT no longer plans to advance clinical development of the complement inhibitor programs on its own or to invest a significant amount of its own resources into the development of these programs going forward. Instead, we plan to seek partnering arrangements to capture the value inherent in these programs and their strong intellectual property. With the termination of the Novartis agreement, AVANT can now offer a worldwide license for all fields, which we believe improves the likelihood of a partnership arrangement.

F. Collaborative Agreements

GlaxoSmithKline: During 1997, we entered into an agreement with Glaxo to collaborate on the development and commercialization of our oral rotavirus vaccine. Under the terms of the agreement, Glaxo received an exclusive worldwide license to commercialize our rotavirus vaccine. We were responsible for continuing the Phase II clinical efficacy study of the rotavirus vaccine, which was completed in August 1998. Subject to the development by Glaxo of a viable manufacturing process, Glaxo assumed responsibility for all subsequent clinical trials and all other development activities. Glaxo made an initial license payment in 1997 upon execution of the agreement. In June 1999, the Company received a milestone payment of $500,000 from Glaxo for successfully completing the Phase II clinical efficacy study and establishing a commercially viable process to manufacture the vaccine. Assuming product development and commercialization continues satisfactorily, we may receive additional milestone payments of up to $8.5 million upon the achievement of specified milestones. In addition, we will be entitled to royalties based on net sales of the rotavirus vaccine.

Pfizer: In connection with our acquisition of Megan in 2000, we entered into a licensing agreement with Pfizer whereby Pfizer has licensed Megan's technology for the development of animal health and food safety vaccines. Upon execution of the agreement, Pfizer made an initial license payment of $2.5 million together with a $3 million equity investment. Under the agreement, we may receive additional milestone payments based upon attainment of

specified milestones. We have received research and development funding from Pfizer through November 2002 and may receive royalty payments on eventual product sales.

DynPort: In October 2001, AVANT granted DynPort Vaccine Company LLC ("DVC") a license for exclusive rights to use certain components of AVANT's vaccine technology. Financial terms of the agreement with DVC include license fees, milestone payments and royalties. DVC, a private company, is chartered with providing an integrated approach for the advanced development of specific vaccines and other products to protect against the threat of biological warfare agents. DVC has a 10-year contract with the U.S. Department of Defense for the development of vaccines against certain acute infectious diseases and contagious diseases, initiated under the 1997 Joint Vaccine Acquisition Program. Further, in January 2003, AVANT was awarded a subcontract to develop for the U.S. Department of Defense an oral combination vaccine against anthrax and plague using AVANT's proprietary vaccine

technologies. Under the agreement, AVANT may receive in excess of $8 million over a two-year period, covering vaccine development through preclinical testing. AVANT executed the subcontract with DVC.

Novartis: In 1997, we entered into a collaborative agreement with Novartis relating to the development of TP10 for use in xenotransplantation (animal organs into humans) and allotransplantation (human to human organ transplantation). Under the agreement, we received annual option fees and supplies of TP10 for clinical trials in return for granting Novartis a two-year option to license TP10 with exclusive worldwide (except Japan) marketing rights. In July 1999, Novartis exercised its option to license TP10 for use in the field of transplantation. The decision to license TP10 resulted in a $6 million equity investment and license fee payment by Novartis which was received by AVANT in January 2000. As of September 6, 2002, Novartis and AVANT agreed to terminate the TP10 agreement pursuant to which Novartis paid a net termination fee of $1.9 million and returned to AVANT all pre-clinical and clinical TP10 material.

Aventis: In 1994 and 1995, we entered into two licensing agreements with Aventis relating to Adjumer®-and Micromer®-formulated vaccines, respectively, for the prevention of a variety of infectious diseases. Aventis made a $3.0 million equity investment in AVANT in 1994 upon the execution of the agreement relating to Adjumer®. In addition, in connection with this collaboration, in 1996 Aventis made milestone payments of $4.5 million and an additional equity investment of $1.0 million in AVANT. During 1998, Aventis made a further milestone payment to us upon initiation of a Phase I trial using an Adjumer®-formulated vaccine for respiratory syncytial virus ("RSV").

Parallel: During October 2001, AVANT contributed its polyphosphazene polymer adjuvant business (the "PCPP business"), including Adjumer® and Micromer®, into a newly formed, privately held company, Parallel Solutions, Inc. ("Parallel"), in exchange for a non-controlling minority ownership position in Parallel. In connection with this transaction, AVANT has assigned all of its rights and obligations under the Aventis license agreements to Parallel.

Lohmann: In September 2002, we appointed Lohmann Animal Health International ("LAHI") as the exclusive distributor of our Megan Health poultry vaccines in North America. LAHI, an established animal health company, is taking over marketing and distribution of Megan's currently marketed poultry products and assuming control of the late-stage food safety and animal health vaccines under development for the commercial poultry market. Under the distribution agreement, AVANT receives a percentage of Megan®Vac 1 product sales in the form of royalty payments.

We depend on our collaborative relationships and may enter into more of them in the future. Some of the above referenced agreements give our collaborator substantial responsibility to commercialize a product and to make decisions about the amount and timing of resources that are devoted to developing and commercializing a product. As a result, we do not have complete control over how resources are used toward some of our products.

In addition, some of these agreements relate to products in the early stages of research and development. Others require AVANT and our collaborator to jointly decide on the feasibility of developing a particular product using our technologies. In either case, these agreements may terminate without benefit to us if the underlying products are not fully developed. Moreover, once specific products are chosen for development, the agreements relating to them may require AVANT to meet specified milestones, to invest money and other resources in the development process or to negotiate additional licenses and other agreements, which may not be possible or advantageous. If we fail to meet our obligations under those agreements, they could terminate and we might need to enter into relationships with other collaborators and to spend additional time, money, and other valuable resources in the process.

Moreover, we cannot predict whether our collaborators will continue their development efforts or, if they do, whether their efforts will achieve success. Many of our collaborators face the same kinds of

risks and uncertainties in their business that we face. A delay or setback to a collaborator will, at a minimum, delay the commercialization of any affected products, and may ultimately prevent it. Moreover, any collaborator could breach its agreement with us or otherwise not use best efforts to promote our products. A collaborator may choose to pursue alternative technologies or products that compete with our technologies or products. In either case, if a collaborator failed to successfully develop one of our products, we would need to find another collaborator. Our ability to do so would depend upon our legal right to do so at the time and whether the product remained commercially viable.

G. Risk Factors

You should consider carefully these risk factors together with all of the information included or incorporated by reference in this Annual Report. This section includes some forward-looking statements.

Our history of losses and uncertainty of future profitability make our common stock a highly speculative investment.

We have had no commercial revenues to date from sales of our human therapeutic or vaccine products and cannot predict when we will. We have accumulated net operating losses since inception of approximately $191.9 million, as of December 31, 2002. We expect to spend substantial funds to continue research and product testing of the following products we have in the pre-clinical and clinical testing stages of development:

Product	Use	Stage

CholeraGarde™ vaccine	Cholera	Clinical phase IIb
Ty800 vaccine	Typhoid fever	Clinical phase I/II
ETEC vaccine	Enterotoxigenic E. coli infection	Pre-clinical
Shigella vaccine	Dysentery	Pre-clinical
Campylobacter vaccine	Campylobacter infection	Pre-clinical
Injectable Anthrax vaccine	Anthrax infection	Clinical Phase I
Oral Anthrax & Plague vaccines	Anthrax & plague infection	Pre-clinical
Rotarix™ vaccine	Rotavirus	Clinical phase II
CETi-1 vaccine	Cholesterol management	Clinical phase II
Therapore®	HIV	Pre-clinical
Therapore®	Hepatitis	Pre-clinical

In anticipation of Food and Drug Administration approval of these products, we will need to make substantial investments to establish sales, marketing, quality control, and regulatory compliance capabilities. These investments will increase if and when any of these products receive FDA approval. We cannot predict how quickly our lead products will progress through the regulatory approval process. As a result, we may continue to lose money for several years.

If we cannot sell capital stock to raise necessary funds, it may force us to limit our research, development and testing programs.

We will need to raise more capital from investors to advance our lead products through the clinical testing and to fund our operations until we receive final FDA approval and our products begin to generate revenues for us. However, based on our history of losses, we may have difficulty attracting sufficient investment interest. We may also try to obtain funding through research grants and agreements with commercial collaborators. This kind of funding is at the discretion of other organizations and companies which have limited funds and many companies compete with us for those funds. As a result, we may not receive any research grants or funds from collaborators.

If selling stockholders choose to sell shares in large volume, the trading price of our common stock could suffer.

In December 2000, we issued 1,841,236 shares of our common stock at $9.54 per share in connection with our acquisition of Megan Health Inc. and 285,877 shares of our common stock at $10.50 per share in a separate private placement with Pfizer Inc. These transactions were the latest of several private placements of our common stock. Those shares plus, among others, 3,057,900 shares we sold in an October 2001 direct equity placement at $4.58 per share, 4,650,953 shares we sold in a July 2000 private placement at $7.85 per share, 5,459,375 shares we sold in a September 1999 private placement at $1.92 per share, and 3,084,910 shares that employees may purchase under stock options at prices ranging from $0.30 to $14.69 per share, can be resold in the public securities markets without restriction. These shares in total account for approximately 30.4% of our total common stock outstanding as of December 31, 2002. If large numbers of shares are sold over a short period of time, the price of our stock may decline rapidly or fluctuate widely.

If our products do not pass required tests for safety and effectiveness, we will not be able to derive commercial revenue from them.

For AVANT to succeed, we will need to derive commercial revenue from the products we have under development. The FDA has not approved any of our lead products for sale to date. Products in our vaccine programs are in various stages of pre-clinical and clinical testing. Pre-clinical tests are performed at an early stage of a product's development and provide information about a product's safety and effectiveness on laboratory animals. Pre-clinical tests can last years. If a product passes its pre-clinical tests satisfactorily, we file an investigational new drug application for the product with the FDA, and if the FDA gives its approval we begin phase I clinical tests. Phase I testing generally lasts between 6 and 12 months. If phase I test results are satisfactory and the FDA gives its approval, we can begin phase II clinical tests. Phase II testing generally lasts between 6 and 18 months. If phase II test results are satisfactory and the FDA gives its approval, we can begin phase III pivotal studies. Phase III studies generally last between 12 and 36 months. Once clinical testing is completed and a new drug application is filed with the FDA, it may take more than a year to receive FDA approval.

In all cases we must show that a pharmaceutical product is both safe and effective before the FDA, or drug approval agencies of other countries where we intend to sell the product, will approve it for sale. Our research and testing programs must comply with drug approval requirements both in the United States and in other countries, since we are developing our lead products with companies, including Glaxo, Pfizer, and DynPort, which intend to commercialize them both in the U.S. and abroad. A product may fail for safety or effectiveness at any stage of the testing process. The key risk we face is the possibility that none of our products under development will come through the testing process to final approval for sale, with the result that we cannot derive any commercial revenue from them after investing significant amounts of capital in multiple stages of pre-clinical and clinical testing.

Product testing is critical to the success of our products but subject to delay or cancellation if we have difficulty enrolling patients.

As our portfolio of potential products moves from pre-clinical testing to clinical testing, and then through progressively larger and more complex clinical trials, we will need to enroll an increasing number of patients with the appropriate characteristics. At times we have experienced difficulty enrolling patients and we may experience more difficulty as the scale of our clinical testing program increases. The factors that affect our ability to enroll patients are largely uncontrollable and include principally the following:

- the nature of the clinical test
- the size of the patient population
- the distance between patients and clinical test sites
- the eligibility criteria for the trial

If we cannot enroll patients as needed, our costs may increase or it could force us to delay or terminate testing for a product.

We depend greatly on the intellectual capabilities and experience of our key executives and scientists and the loss of any of them could affect our ability to develop our products.

The loss of Dr. Una S. Ryan, our president and chief executive officer, or other key members of our staff could harm us. We have an employment agreement with Dr. Ryan. We do not have any key-person insurance coverage. We also depend on our scientific and clinical collaborators and advisors, all of whom have outside commitments that may limit their availability to us. In addition, we believe that our future success will depend in large part upon our ability to attract and retain highly skilled scientific, managerial and marketing personnel, particularly as we expand our activities in clinical trials, the regulatory approval process and sales and manufacturing. We face significant competition for this type of personnel from other companies, research and academic institutions, government entities and other organizations. We cannot predict our success in hiring or retaining the personnel we require for continued growth.

We rely on our contract manufacturers. Should the cost, delivery and quality of clinical and commercial grade materials supplied by contract manufacturers vary to our disadvantage, our business operations could suffer significant harm.

We are dependent on sourcing from third-party manufacturers for suitable quantities of clinical and commercial grade materials essential to pre-clinical and clinical studies currently underway and to planned clinical trials in addition to those currently being conducted by third parties or us. The inability to have suitable quality and quantities of these essential materials produced in a timely manner would result in significant delays in the clinical development and commercialization of products, which could adversely affect our business, financial condition and results of operations. We rely on collaborators and contract manufacturers to manufacture proposed products in both clinical and commercial quantities in the future. Our leading bacterial vaccine candidates use attenuated live bacteria as vectors and therefore require specialized manufacturing capabilities and processes. We have faced difficulties in securing commitments from U.S. contract manufacturers. For this reason we have sought collaborators and contract manufacturers outside the United States.

There can be no assurances that we will be able to enter into long-term arrangements with such third party manufacturers on acceptable terms or at all. Further, contract manufacturers must also be able to meet our timetable and requirements, and must operate in compliance with the FDA's Good Manufacturing Practices, or GMP; failure to do so could result in, among other things, the disruption of product supplies. Non-U.S. contract manufacturers may face special challenges in complying with the FDA's GMP requirements. Our dependence upon third parties for the manufacture of our products may adversely affect our profit margins and our ability to develop and deliver products on a timely and competitive basis.

We depend on third party suppliers and manufacturers, including Walter Reed Army Institute of Research, Lonza Biologics plc, Bioconcept, Inc., Multiple Peptide Systems, Bio Sidus, S.A. and Maine Biological Laboratories, to provide us with suitable quantities of materials necessary for clinical tests. If these materials are not available in suitable quantities of appropriate quality, in a timely manner, and at a feasible cost, our clinical tests will face delays.

We rely on third parties to plan, conduct and monitor our clinical tests, and their failure to perform as required would interfere with our product development.

We rely on third parties, including the International Center for Diarrhoeal Disease Research, Bangladesh, the International Vaccines Institute, The Cleveland Clinic, The Chicago Center for Clinical Research, Pharmaceutical Research Associates, Inc., PPD Development, LLC, Protocare, Inc., the NIH and Glaxo to conduct our clinical studies. If any one of those third parties fails to perform as we expect or if their work fails to meet regulatory standards, our testing could be delayed, cancelled or rendered ineffective.

We depend greatly on third party collaborators to license, develop and commercialize some of our products, and they may not meet our expectations.

We have agreements with other companies, including Glaxo, Pfizer, DVC, and Lohmann for the licensing, development and ultimate commercialization of some of our products. Some of those agreements give substantial responsibility over the products to the collaborator. Some collaborators may be unable or unwilling to devote sufficient resources to develop our products as their agreements require. They often face business risks similar to ours, and this could interfere with their efforts. Also, collaborators may choose to devote their resources to products that compete with ours. If a collaborator does not successfully develop any one of our products, we will need to find another collaborator to do so. The success of our search for a new collaborator will depend on our legal right to do so at the time and whether the product remains commercially viable.

The success of our vaccine candidates depends in great part upon our and our collaborators' success in promoting them as superior to other treatment alternatives. We believe that vaccines like those under development by AVANT can be proven to offer disease prevention and treatment with notable advantages over drugs in terms of patient compliance and cost and ease of distribution. However, there can be no assurance that we will be able to prove these advantages or that the advantages will be sufficient to support the successful commercialization of our vaccines.

We may face delays, difficulties or unanticipated costs in establishing sales, distribution and manufacturing capabilities for our commercially ready products.

We have chosen to retain, rather than license, all rights to some of our lead products, such as our portfolio of travelers' vaccines. If we proceed with this strategy, we will have full responsibility for commercialization of these products if and when they are approved for sale. We currently lack the marketing, sales

and distribution capabilities that we will need to carry out this strategy. To market any of our products directly, we must develop a substantial marketing and sales force with technical

expertise and a supporting distribution capability. We have little expertise in this area, and we may not succeed. We may find it necessary to enter into strategic partnerships on uncertain but potentially unfavorable terms to sell, market and distribute our products when they are approved for sale.

Some of our products are difficult to manufacture, especially in large quantities, and we have not yet developed commercial scale manufacturing processes for any of our products. We do not currently plan to develop internal manufacturing capabilities to produce any of our products if they are approved for sale. To the extent that we choose to market and distribute products ourselves, this strategy will make us dependent on other companies to produce our products in adequate quantities, in compliance with regulatory requirements, and at a competitive cost. We may not find third parties capable of meeting those manufacturing needs.

A decrease in demand for Megan®Vac 1 and other future products could adversely affect our revenues.

Because AVANT's focus is on human health care, as of September 1, 2002 we appointed Lohmann Animal Health International (LAHI) as the exclusive distributor of our Megan Health poultry vaccines in North America. LAHI, an established animal health company, is taking over marketing and distribution of Megan's currently marketed poultry products and assuming control of the late-stage food safety and animal health vaccines under development for the commercial poultry market. Under the distribution agreement, AVANT receives a percentage of Megan®Vac 1 product sales in the form of royalty payments.

Both demand and ultimately the profitability of Megan®Vac 1, currently our only product available for commercial sales, and future products, are components to our success. The following are potential factors that may negatively affect the demand for Megan®Vac 1:

- Our competitors may develop, manufacture and market products that are more effective or less expensive than ours;
- Megan®Vac 1 could be replaced by a novel product and may become obsolete;
- Users may not accept such a recently approved product without years of proven history;
- Our competitors in the food safety market have greater financial and management resources than we do, and significantly more experience in bringing products to market; and
- We have no manufacturing or distribution facilities for Megan®Vac 1. Instead, we contract with Maine Biological Laboratories ("MBL"), a subsidiary of LAHI, to manufacture Megan®Vac 1 for us.

Any one of these factors could reduce demand for Megan®Vac 1 to a level which may lead to LAHI's and/or our discontinuation of the product. Should LAHI or AVANT be unable to realize acceptable profits from sales of Megan®Vac 1, LAHI or AVANT may choose to scale back our commercialization efforts. In addition, if our partner, LAHI, is unable to continue to distribute Megan®Vac 1 in an effective manner, or is unable to maintain sufficient personnel with the appropriate levels of experience to manage this function, LAHI may be unable to meet the demand for our products and we may lose potential revenues and royalties.

We may be unable to manage multiple late stage clinical trials for a variety of product candidates simultaneously.

While we believe that we can have materials available for clinical trials and the initial market launch for our lead product candidates, we will not be able to commercialize these products until we have acceptable clinical trial results and regulatory approval from the FDA and/or foreign regulatory authorities. The FDA and other regulatory authorities require that the safety and efficacy of a drug be supported by results from adequate and well-controlled clinical trials before approval for commercial

sale. If the results of Phase I and Phase II clinical trials of our products currently in progress do not demonstrate that they are safe and effective, we will not be able to initiate Phase III clinical trials when we currently anticipate or at all and to submit to the FDA a new drug application or other relevant applications for pre-market approval. Further, the results of pre-clinical testing and initial clinical trials do not necessarily predict how safe and effective a product will be when it is evaluated in large-scale Phase III clinical trials. It is possible that unacceptable side effects may be discovered at any time. A number of companies have suffered significant setbacks in advanced clinical trials, despite promising results in earlier trials.

Even if we believe the clinical trials demonstrate the safety and efficacy of a product, the FDA and foreign regulatory authorities may not accept our assessment of the results. The FDA and foreign regulatory authorities may require us to conduct additional advanced clinical trials beyond those we are currently planning in order to demonstrate the safety and efficacy of our products. The rate of completion of our clinical trials depends on, among other factors, the rate of patient enrollment. Patient enrollment is a function of many factors, including the size of the patient population, the nature of the clinical protocol, the proximity of patients to clinical sites and the eligibility criteria for the trial. Delays in planned patient enrollment may result in increased costs, delays or termination of clinical trials, which could have a material adverse effect on our business, financial condition and results of operations.

Moreover, we have not historically managed multiple late stage clinical trials simultaneously. During 2003 we expect to have in progress two Phase I clinical trials, two Phase II clinical trials and one Phase III clinical trial. We are independently funding and managing the Phase II clinical trial of CETi-1, our cholesterol management vaccine. Attracting individuals qualified to administer these and planned future late stage clinical trials is often difficult due to the complexity of the protocols and the size of the studies. We may be unable to find qualified individuals, which could delay our trials or result in increased costs. We may be unable to complete multiple late stage clinical trials concurrently as effectively or as quickly as we currently anticipate, which could have a material adverse effect on our business, financial condition and results of operations.

Our reliance on third parties requires us to share our trade secrets, which increases the possibility that a competitor will discover them.

Because we rely on third parties to develop our products, we must share trade secrets with them. We seek to protect our proprietary technology in part by confidentiality agreements and, if applicable, inventor's rights agreements with our collaborators, advisors, employees and consultants. Our competitors may discover our trade secrets, either through breach of these agreements or through independent development. A competitor's discovery of our trade secrets would impair our competitive position. Moreover, we conduct a significant amount of research through academic advisors and collaborators who are prohibited from entering into confidentiality or inventor's rights agreements by their academic institutions.

We may not be able to successfully integrate newly acquired technology with our existing technology or to modify our technologies to create new vaccines.

As part of our acquisition of the assets of UPT in January 2003, we acquired VitriLife®, a patented drying process for the industrial-scale preservation of proteins, cells, bacteria and viruses. VitriLife® may improve product stability at room temperature or higher, thereby eliminating the need for costly cold-chain distribution storage of vaccines and rendering vaccines more affordable. If we are able to integrate VitriLife® with our vaccine technology, we believe that the room temperature stability afforded by VitriLife® will give AVANT's vaccines a competitive advantage for a wide range of uses in food safety, animal health and biodefense applications. However, if we are unable to successfully integrate VitriLife®, or other technologies which we have acquired or may acquire in the future, with

our existing technology and potential products currently under development, we may be unable to realize any benefit from our acquisition of VitriLife®, or other technology which we have acquired or may acquire in the future and may face the loss of our investment of financial resources and time in the integration process.

We believe that AVANT's vaccine technology portfolio may offer opportunities to develop vaccines that treat a variety of bacterial and viral infections by stimulating a patient's immune system against those disease organisms. However, some applications of our vaccine technology will require that we adapt AVANT's vectoring systems to develop new, safe and effective oral vaccines against anthrax, plague, and other bacterial and viral health threats. It is possible that the attenuated live bacteria we use in our bacterial vaccine candidates can not serve as vectors for the development of further bacterial or viral vaccines. If our vaccine technology portfolio cannot be used to create vaccines against a variety of disease organisms, we may lose all or portions of our investment in development efforts for new bacterial or viral vaccine candidates.

We license technology from other companies to develop our products, and those companies could restrict our use of it.

Companies that license to us technologies we use in our research and development programs may require us to achieve milestones or devote minimum amounts of resources to develop products using those technologies. They may also require us to make significant royalty and milestone payments, including a percentage of any sublicensing income, as well as payments to reimburse them for patent costs. The number and variety of our research and development programs require us to establish priorities and to allocate available resources among competing programs. From time to time we may choose to slow down or cease our efforts on particular products. If in doing so we fail to perform our obligations under a license fully, the licensor can terminate the licenses or permit our competitors to use the technology. Moreover, we may lose our right to market and sell any products based on the licensed technology.

We have many competitors in our field and they may develop technologies that make ours obsolete.

Biotechnology, pharmaceuticals and therapeutics are rapidly evolving fields in which scientific and technological developments are expected to continue at a rapid pace. We have many competitors in the U.S. and abroad, including Merck, Pfizer, Japan Tobacco, Esperion, Acambis, Powderject, ID Biomedical, Iomai, Microscience and Berna Biotech. Our success depends upon our ability to develop and maintain a competitive position in the product categories and technologies on which we focus. Many of our competitors have greater capabilities, experience and financial resources than we do. Competition is intense and is expected to increase as new products enter the market and new technologies become available. Our competitors may:

- develop technologies and products that are more effective than ours, making ours obsolete or otherwise noncompetitive;
- obtain regulatory approval for products more rapidly or effectively than us; and
- obtain patent protection or other intellectual property rights that would block our ability to develop competitive products.

We rely on patents, patent applications and other intellectual property protections to protect our technology and trade secrets; they are expensive and may not provide sufficient protection.

Our success depends in part on our ability to obtain and maintain patent protection for technologies that we use. Biotechnology patents involve complex legal, scientific and factual questions and are highly uncertain. To date, there is no consistent policy regarding the breadth of claims allowed

in biotechnology patents, particularly in regard to patents for technologies for human uses like those we use in our business. We cannot predict whether the patents we seek will issue. If they do issue, a competitor may challenge them and limit their scope. Moreover, our patents may not afford effective protection against competitors with similar technology. A successful challenge to any one of our patents could result in a third party's ability to use the technology covered by the patent. We also face the risk that others will infringe, avoid or circumvent our patents. Technology that we license from others is subject to similar risks and this could harm our ability to use that technology. If we, or a company that licenses technology to us, were not the first creator of an invention that we use, our use of the underlying product or technology will face restrictions, including elimination.

If we must defend against suits brought against us or prosecute suits against others involving intellectual property rights, we will incur substantial costs. In addition to any potential liability for significant monetary damages, a decision against us may require us to obtain licenses to patents or other intellectual property rights of others on potentially unfavorable terms. If those licenses from third parties are necessary but we cannot acquire them, we would attempt to design around the relevant technology, which would cause higher development costs and delays, and may ultimately prove impracticable.

Our business requires us to use hazardous materials, which increases our exposure to dangerous and costly accidents.

Our research and development activities involve the use of hazardous chemicals, biological materials and radioactive compounds. Although we believe that our safety procedures for handling and disposing of hazardous materials comply with the standards prescribed by applicable laws and regulations, we cannot completely eliminate the risk of accidental contamination or injury from these materials. In the event of an accident, an injured party will likely sue us for any resulting damages with potentially significant liability. The ongoing cost of complying with environmental laws and regulations is significant and may increase in the future. In addition, in connection with our merger with Virus Research Institute, Inc. in 1998, we assumed the real property lease at Virus Research Institute, Inc.'s former site. We understand that this property has a low level of oil-based and other hazardous material contamination. We believe that the risks posed by this contamination are low, but we cannot predict whether additional hazardous contamination exists at this site, or that changes in applicable law will not require us to clean up the current contamination of the property.

Health care reform and restrictions on reimbursement may limit our returns on potential products.

Because AVANT's strategy ultimately depends on the commercial success of our products, we assume, among other things, that end users of our products will be able to pay for them. In the United States and other countries, in most cases, the volume of sales of products like those we are developing depends on the availability of reimbursement from third-party payors, including national health care agencies, private health insurance plans and health maintenance organizations. Third-party payors increasingly challenge the prices charged for medical products and services. Accordingly, if we succeed in bringing products to market, and reimbursement is not available or is insufficient, we could be prevented from successfully commercializing our potential products.

The health care industry in the United States and in Europe is undergoing fundamental changes as a result of political, economic and regulatory influences. Reforms proposed from time to time include mandated basic health care benefits, controls on health care spending, creation of large medical services and products purchasing groups and fundamental changes to the health care delivery system. We anticipate ongoing review and assessment of health care delivery systems and methods of payment in the United States and other countries. We cannot predict whether any particular reform initiatives will result or, if adopted, their impact on us. However, we expect that adoption of any reform proposed will impair our ability to market products at acceptable prices.

H. Competition

Competition in the biotechnology and vaccine industries is intense. We face competition from many companies in the United States and abroad, including a number of large pharmaceutical companies, firms specialized in the development and production of vaccines, adjuvants and vaccine and immunotherapeutic delivery systems and major universities and research institutions. Most of our competitors have substantially greater resources, more extensive experience in conducting pre-clinical studies and clinical testing and obtaining regulatory approvals for their products, greater operating experience, greater research and development and marketing capabilities and greater production capabilities than those of AVANT. There can be no assurance that our competitors will not develop technologies and products that are safer or more effective than any which are being developed by us or which would render our technology and products obsolete and noncompetitive. In addition, our competitors may succeed in obtaining FDA approval for products more rapidly than we do. There can be no assurance that the vaccines and immunotherapeutic products under development by us and our collaborators will be able to compete successfully with existing products or products under development by other companies, universities and other institutions or that they will obtain regulatory approval in the United States or elsewhere. We believe that the principal competitive factors in the vaccine and immunotherapeutic market are product quality, measured by efficacy and safety, ease of administration and price.

Our competitive position will also depend upon our ability to attract and retain qualified personnel, obtain patent protection or otherwise develop proprietary products or processes and secure sufficient capital resources for the often lengthy period between technological conception and commercial sales. We will require substantial capital resources to complete development of some or all of our products, obtain the necessary regulatory approvals and successfully manufacture and market our products. In order to secure capital resources, we anticipate having to sell additional capital stock, which would dilute existing stockholders. We may also attempt to obtain funds through research grants and agreements with commercial collaborators. However, these types of fundings are uncertain because they are at the discretion of the organizations and companies that control the funds. As a result, we may not receive any funds from grants or collaborations. Alternatively, we may borrow funds from commercial lenders, likely at high interest rates, which would increase the risk of any investment in AVANT.

I. Manufacturing

We have no manufacturing facilities, no experience in volume manufacturing and we rely upon collaborators or contractors to manufacture our proposed products for both clinical and commercial purposes. While we believe that there is currently sufficient capacity worldwide for the production of our potential products by our collaborators or through contract manufacturers, establishing long-term relationships with contract manufacturers and securing multiple sources for the necessary quantities of clinical and commercial materials required can be a challenge.

To date, we have been arranging with contract manufacturers for the manufacture of clinical trial supplies of TP10, CETi-1 and our rotavirus vaccine candidate. We have also contracted for the manufacture of PCPP in quantities sufficient for pre-clinical and clinical studies. Future manufacture of our rotavirus vaccine is the responsibility of Glaxo, which has received from us a world-wide exclusive license to commercialize this vaccine.

We contracted with Lonza Biologics plc for the scale-up and manufacture of TP10 clinical trial material. The CETi-1 vaccine is manufactured under contracts with Multiple Peptide Services and Bioconcepts, Inc. WRAIR has manufactured Cholera Peru-15 and Bengal-15 vaccines under a collaborative agreement with us. We have entered into supply agreements with Bio Sidus, S.A., an Argentine company, for the manufacture of cGMP grade quantities of CholeraGarde™ cholera vaccine

for clinical trials. We have also entered into a collaborative arrangement with WRAIR for the manufacture of a Therapore®-HIV product.

The manufacturing processes for our other vaccine and immunotherapeutic delivery systems and vaccines utilize known technologies. We believe that the products we currently have under development can be scaled up to permit manufacture in commercial quantities. However, there can be no assurance that we will not encounter difficulties in scaling up the manufacturing processes.

Use of third party manufacturers limits our control over and ability to monitor the manufacturing process. As a result, we may not be able to detect a variety of problems that may arise and may face additional costs in the process of interfacing with and monitoring the progress of our contract manufacturers. If third party manufacturers fail to meet our manufacturing needs in an acceptable manner, we would face delays and additional costs while we develop internal manufacturing capabilities or find alternative third party manufacturers. It may not be possible to have multiple third party manufacturers ready to supply us with needed material without incurring significant costs or at all.

We intend to establish manufacturing arrangements with manufacturers that comply with the FDA's requirements and other regulatory standards, although there can be no assurance that we will be able to do so. In the future, we may, if it becomes economically attractive to do so, establish our own manufacturing facilities to produce any vaccine products that we may develop. In order for us to establish a manufacturing facility, we will require substantial additional funds and will be required to hire and retain significant additional personnel and comply with the extensive cGMP regulations of the FDA applicable to such facility. The product manufacturing facility would also need to be licensed for the production of vaccines by the FDA.

J. Marketing

Under the terms of existing and future collaborative agreements, we rely and expect to continue to rely on the efforts of our collaborators for the sale and marketing of our products. There can be no assurance that our collaborators will market vaccine products incorporating our technologies, or, if marketed, that such efforts will be successful. The failure of our collaborators to successfully market products would harm our business.

We have retained, and in the future intend to retain, marketing rights to some of our product candidates, including vaccine and immunotherapeutic delivery systems and vaccine candidates, in selected geographic areas and for specified indications. We intend to seek marketing and distribution agreements and/or co-promotion agreements for the distribution of our products in these geographic areas and for these indications. We believe that these arrangements could enable us to generate greater financial return than might be obtained from early stage licensing and collaboration agreements. We have no marketing and sales staff and limited experience relating to marketing and distribution of commercial products, including vaccines. If we determine in the future to engage in direct marketing of our products, we will be required to recruit an experienced marketing group, develop a supporting distribution capability and incur significant additional expenditures. There can be no assurance that we will be able to establish a successful marketing force. We may choose or find it necessary to enter into strategic partnerships on uncertain, but potentially unfavorable, terms to sell, market and distribute our products. Any delay in the marketing or distribution of our products, whether it results from problems with internal capabilities or with a collaborative relationship, could harm the value of an investment in AVANT.

K. Patents, Licenses and Proprietary Rights

AVANT's policy is to protect our technology by filing patent applications and obtaining patent rights covering our own technology, both in the United States and in foreign countries. In addition, we have acquired and will seek to acquire as needed or desired, exclusive rights of others through

assignment or license to complement our portfolio of patent rights. We also rely on trade secrets, unpatented know-how and technological expertise and innovation to develop and maintain our competitive position.

Patents: The successful development and marketing of products by AVANT will depend in part on our ability to create and maintain intellectual property, including patent rights. We have established a proprietary patent position in the areas of complement inhibitor technology, vaccine technologies and diagnostic technologies, and we are the owner or exclusive licensee of numerous patents and pending applications around the world. Although we continue to pursue patent protection for our products, no assurance can be given that any pending application will issue as a patent, that any issued patent will have a scope that will be of commercial benefit, or that we will be able to successfully enforce our patent position against competitors.

In the area of complement molecules, we are co-owner with The Johns Hopkins University and Brigham & Women's Hospital, whose rights AVANT has exclusively licensed, of patents and applications covering inventions relating to complement receptor type 1 (CR1). These rights are based in part on the work of Dr. Douglas Fearon and include U.S. and foreign patents which claim nucleic acid sequences encoding CR1, sCR1 and active fragments; purification methods; and therapeutic uses of sCR1. We also own or have rights to a number of other issued patents and patent applications relating to sCR1, sCR1sLe^{x} and other complement inhibitor molecules and their uses.

In October 2001, we entered into a transfer and sale agreement with Parallel Solutions, Inc. ("Parallel") in which we conveyed to Parallel our issued U.S. patents and corresponding foreign applications directed to the manufacture and use of polyphosphazene adjuvants and the use of polyphosphazenes in vaccine delivery technology.

We have an exclusive license to a United States patent application, and corresponding foreign applications, directed to a vector construct that is used in our VibrioVec™ vaccine delivery system and an exclusive license to eight issued U.S. and foreign patents directed to a rotavirus strain, which forms the basis of our rotavirus vaccine. We also have an exclusive license to U.S. patent applications, and a non-exclusive license to U.S. and foreign patents and applications directed to technology that may be useful for our Therapore™ system. We have six issued patents and additional pending patent applications in the U.S. and selected foreign countries relating to control of CETP activity through vaccination. We have filed a patent application on the use of a recombinantly produced single protein of *B. anthracis* to provide an effective anthrax vaccine.

In December 2000, we acquired Megan and by this acquisition obtained exclusive rights to vaccine technology patents and applications based on the work of Dr. Roy Curtiss III. These patent rights complement and expand the patent rights of AVANT in this technological area. In connection with our acquisition of Megan, we entered into a licensing agreement with Pfizer whereby Pfizer has licensed Megan's technology for the development of animal health and food safety vaccines.

In March 2003, AVANT enhanced its intellectual property portfolio through the acquisition of certain intellectual property from Pharmacia Corporation, including a portfolio of pending patent applications. These patent applications are directed to products or methods for stimulating an immune response against cholesteryl ester transfer protein (CETP), which mediates an important cholesterol transport mechanism.

Our acquisition of this intellectual property from Pharmacia, coupled with our September 2001 acquisition of a portfolio of granted and pending patents from The Immune Response Corporation, consolidates AVANT's ownership of patented applications that cover the technology of anti-atherosclerosis vaccines. AVANT now owns six granted patents around the world relating to CETP vaccine technology.

There can be no assurance that patent applications owned by or licensed to AVANT will result in granted patents or that, if granted, the resultant patents will afford protection against competitors with similar technology. It is also possible that third parties may obtain patents or other proprietary rights that may be necessary or useful to AVANT. In cases where third parties are first to invent a particular product or technology, it is possible that those parties will obtain patents that will be sufficiently broad to prevent us from using important technology or from further developing or commercializing important vaccine and immunotherapeutic systems and vaccine candidates. If licenses from third parties are necessary but cannot be obtained, commercialization of the covered products might be delayed or prevented. Even if these licenses can be obtained, they would probably require us to pay ongoing royalties and other costs, which could be substantial.

Although a patent has a statutory presumption of validity in the United States, the issuance of a patent is not conclusive as to validity or as to the enforceable scope of the patent claims. The validity or enforceability of a patent after its issuance by the Patent and Trademark Office can be challenged in litigation. As a business that uses a substantial amount of intellectual property, we face a heightened risk of intellectual property litigation. If the outcome of the litigation is adverse to the owner of the patent, third parties may then be able to use the invention covered by the patent without payment. There can be no assurance that our issued patents or any patents subsequently issued to or licensed by us will not be successfully challenged in the future. In addition, there can be no assurance that our patents will not be infringed or that the coverage of our patents will not be successfully avoided by competitors through design innovation.

We are aware that others, including universities and companies, have filed patent applications and have been granted patents in the United States and other countries which claim subject matter potentially useful or necessary to the commercialization of our products. The ultimate scope and validity of existing or future patents which have been or may be granted to third parties, and the availability and cost of acquiring rights in those patents necessary to the manufacture, use or sale of our products presently cannot be determined by AVANT.

We use a mutated *Vibrio cholerae* in our VibrioVec™ vaccine delivery system. We are aware of an issued U.S. patent which claims a culture of mutated *Vibrio cholerae*. We believe that only one claim (the "Claim") of the patent may be pertinent to our VibrioVec™ system. The remaining claims of the patent cover other cultures, which we believe are not pertinent to VibrioVec™. We have received an opinion of counsel from Fish & Richardson, P.C. that, based on the analysis set forth in their opinion and the facts known to them, the Claim is invalid. While a party challenging the validity of a patent has the burden of proving invalidity, the outcome of any litigation cannot be predicted with certainty. Accordingly, there can be no assurance that, if litigated, a court would conclude that the Claim is invalid.

In addition to the patent referred to in the previous paragraph, there may be other patent applications and issued patents belonging to competitors that may require us to alter our vaccine candidates and vaccine and immunotherapeutic delivery systems, pay licensing fees or cease some of our activities. If our product candidates conflict with patents that have been or may be granted to competitors, universities or others, the patent owners could bring legal action against us claiming damages and seeking to enjoin manufacturing and marketing of the patented products. If any of these actions are successful, in addition to any potential liability for damages, we could be required to obtain a license in order to continue to manufacture or market the affected products. There can be no assurance that we would prevail in any such action or that any license required under any such third party patent would be made available on acceptable terms or at all. We believe that there may be significant litigation in the biotechnology and vaccine industries regarding patent and other intellectual property rights. If we become involved in that litigation, we could consume substantial resources.

Licenses: We have entered into several significant license agreements relating to technology that is being developed by AVANT and/or its collaborators, including licenses from the following: Harvard College relating to proprietary technology involving genetically altered Vibrio cholera and Salmonella strains; Cincinnati Children's Hospital involving proprietary rights and technologies relating to an attenuated rotavirus strain for a rotavirus vaccine; and Harvard College and the NIH for the proprietary technology related to Therapore®, a novel immunotherapy delivery system to be developed for delivery of products for the treatment of persistent viral infections and some forms of cancer. In general, these institutions (except the NIH) have granted us an exclusive worldwide license (with right to sublicense) to make, use and sell products embodying the licensed technology, subject to the reservation by the licensor of a non-exclusive right to use the technologies for non-commercial purposes. Generally, the term of each license is through the expiration of the last of the patents issued with respect to the technologies covered by the license. We have generally agreed to use reasonable efforts to develop and commercialize licensed products and to achieve specified milestones and pay license fees, milestone payments and royalties based on the net sales of the licensed products or to pay a percentage of sublicense income. If we breach our obligations, the licensor has the right to terminate the license, and, in some cases, convert the license to a non-exclusive license.

Proprietary Rights: We also rely on unpatented technology, trade secrets and confidential information, and no assurance can be given that others will not independently develop substantially equivalent information and techniques or otherwise gain access to our know-how and information, or that we can meaningfully protect our rights in such unpatented technology, trade secrets and information. We require each of our employees, consultants and advisors to execute a confidentiality agreement at the commencement of an employment or consulting relationship with AVANT. The agreements generally provide that all inventions conceived by the individual in the course of employment or in providing services to AVANT and all confidential information developed by, or made known to, the individual during the term of the relationship shall be the exclusive property of AVANT and shall be kept confidential and not disclosed to third parties except in limited specified circumstances. There can be no assurance, however, that these agreements will provide meaningful protection for our information in the event of unauthorized use or disclosure of such confidential information.

L. Government Regulation

Our activities and products are significantly regulated by a number of governmental entities, including the FDA in the United States and by comparable authorities in other countries and by the USDA with respect to products developed by Megan. These entities regulate, among other things, the manufacture, testing, safety, effectiveness, labeling, documentation, advertising and sale of our products. We must obtain regulatory approval for a product in all of these areas before we can commercialize the product. Product development within this regulatory framework takes a number of years and involves the expenditure of substantial resources. Many products that initially appear promising ultimately do not reach the market because they are found to be unsafe or ineffective when tested. Our inability to commercialize a product would impair our ability to earn future revenues.

In the United States, vaccines and immunotherapeutics for human use are subject to FDA approval as "biologics" under the Public Health Service Act and "drugs" under the Federal Food, Drug and Cosmetic Act. The steps required before a new product can be commercialized include: pre-clinical studies in animals, clinical trials in humans to determine safety and efficacy and FDA approval of the product for commercial sale.

Data obtained at any stage of testing is susceptible to varying interpretations, which could delay, limit or prevent regulatory approval. Moreover, during the regulatory process, new or changed drug approval policies may cause unanticipated delays or rejection of our product. We may not obtain necessary regulatory approvals within a reasonable period of time, if at all, or avoid delays or other problems in testing our products. Moreover, even if we received regulatory approval for a product, the approval may require limitations on use, which could restrict the size of the potential market for the product.

The FDA provides that human clinical trials may begin thirty (30) days after receipt and review of an Investigational New Drug ("IND") application, unless the FDA requests additional information or changes to the study protocol within that period. An IND must be sponsored and filed by AVANT for each of our proposed products. Authorization to conduct a clinical trial in no way assures that the FDA will ultimately approve the product. Clinical trials are usually conducted in three sequential phases. In a Phase I trial, the product is given to a small number of healthy volunteers to test for safety (adverse effects). Phase II trials are conducted on a limited group of the target patient population; safety, optimal dosage and efficacy are studied. A Phase III trial is performed in a large patient population over a wide geographic area to prove that significant efficacy exists. The FDA has ongoing oversight over all these trials and can order a temporary or permanent discontinuation if warranted. Such an action could materially harm AVANT. Clinical tests are critical to the success of our products but are subject to unforeseen and uncontrollable delay, including delay in enrollment of patients. Any delay in clinical trials could delay our commercialization of a product.

A product's safety and effectiveness in one test is not necessarily indicative of its safety and effectiveness in another test. Moreover, we may not discover all potential problems with a product even after completing testing on it. Some of our products and technologies have undergone only pre-clinical testing. As a result, we do not know whether they are safe or effective for humans. Also, regulatory authorities may decide, contrary to our findings, that a product is unsafe or not as effective in actual use as its test results indicated. This could prevent the product's widespread use, require its withdrawal from the market or expose us to liability.

The results of the clinical trials and all supporting data are submitted to the FDA for approval. A Biologics License Application (BLA) is submitted for a biologic product; a New Drug Application (NDA) for a drug product. The interval between IND filing and BLA/NDA filing is usually at least several years due to the length of the clinical trials, and the BLA/NDA review process can take over a year. During this time the FDA may request further testing or additional trials or may turn down the

application. Even with approval, the FDA frequently requires post-marketing safety studies (known as Phase IV trials) to be performed.

The FDA requires that the manufacturing facility that produces a licensed product meet specified standards, undergo an inspection and obtain an establishment license prior to commercial marketing. Subsequent discovery of previously unknown problems with a product or its manufacturing process may result in restrictions on the product or the manufacturer, including withdrawal of the product from the market. Failure to comply with the applicable regulatory requirements can result in fines, suspensions of regulatory approvals, product recalls, operating restrictions and criminal prosecution.

In the United States, vaccines for animal health and food safety use are subject to USDA approval. The steps required before a new product can be commercialized include: pre-clinical studies in animals; clinical trials in animals to determine safety and efficacy; and USDA approval of the product for commercial sale. The registration of these vaccines may be subject to numerous delays or possibly outright rejection of the product by the agency. Delays may occur at any stage of testing, clinical results may be subject to unfavorable interpretation by the agency and regulatory approval, if received, may require limitations on use which could restrict the size of the potential market for the product. The USDA requires that the manufacturing facility that produces a licensed product meet specified standards, undergo an inspection and obtain an establishment license prior to commercial marketing. Under USDA regulations, this license is held by the manufacturer of the product, not the developer of the product, such as Megan. Failure to comply with applicable USDA regulatory requirements can result in fines, suspensions of regulatory approvals, product recalls, operating restrictions and criminal prosecution.

The Advisory Committee on Immunization Practices (ACIP) of the CDC has a role in setting the public market in the United States for the vaccine products we intend to develop. The ACIP makes recommendations on the appropriate use of vaccines and related products and the CDC develops epidemiologic data relevant to vaccine requirements and usage.

Because we may market our products abroad, we will be subject to varying foreign regulatory requirements. Although international efforts are being made to harmonize these requirements, applications must currently be made in each country. The data necessary and the review time varies significantly from one country to another. Approval by the FDA does not ensure approval by the regulatory bodies of other countries.

Our collaborators are also subject to all of the above-described regulations in connection with the commercialization of products utilizing our technology.

M. Product Liability

The risk of product liability claims, product recalls and associated adverse publicity is inherent in the testing, manufacturing, marketing and sale of medical products. If and when we manufacture vaccines that are recommended for routine administration to children, we will be required to participate in the National Vaccine Injury Compensation Program. This program compensates children having adverse reactions to certain routine childhood immunizations with funds collected through an excise tax from the manufacturers of these vaccines.

We have clinical trial liability insurance coverage in the amount of $5 million. However, there can be no assurance that such insurance coverage is or will continue to be adequate or available. We may choose or find it necessary under our collaborative agreements to increase our insurance coverage in the future. We

may not be able to secure greater or broader product liability insurance coverage on acceptable terms or at reasonable costs when needed. Any liability for mandatory damages could exceed the amount of our coverage. A successful product liability claim against us could require us to pay a substantial monetary award. Moreover, a product recall could generate substantial negative

publicity about our products and business and inhibit or prevent commercialization of other product candidates.

N. Employees; Scientific Consultants

As of March 1, 2003, we employed 66 full time persons, 12 of whom have doctoral degrees. Of these employees, 55 were engaged in or directly support research and development activities.

We have also retained a number of scientific consultants and advisors in various fields. These consultants include the following members of the Scientific Advisory Board: Dr. Mark Davis, Stanford University; Dr. Tak Mak, Ontario Cancer Institute; Dr. Peter Ward, University of Michigan School of Medicine; Dr. Hans Wigzell, Karolinska Institute; Dr. Peter Henson, National Jewish Center for Immunology and Respiratory Medicine; Dr. Peter Libby, Brigham and Women's Hospital; and Dr. Robert Langer, Massachusetts Institute of Technology.

Item 2. PROPERTIES

We lease approximately 54,300 square feet of laboratory and office space in Needham, Massachusetts. The lease had an initial six-year term which expired in April 2002. In August 2001, we extended our lease through April 30, 2007. Under the extended lease agreement, we are obligated to pay an escalating base annual rent ranging from $1,466,600 to $1,561,600 during the extension term. Aggregate net base rental payments for the years ended December 31, 2002 and 2001 for this facility were $1,694,600 and $1,051,900, respectively. A sublease relating to 14,000 square feet of excess laboratory and office space expired in April 2002. Under the sublease agreement we received base annual sub-rental income of $308,300. We are currently marketing the space for a new sublessee.

Our wholly-owned subsidiary, Megan Health, Inc., leases approximately 12,400 square feet of laboratory and office space in Overland, Missouri near St. Louis. Under the lease agreement, we are obligated to pay annual rent of $322,900 until the lease expires on March 31, 2004.

Item 3. LEGAL PROCEEDINGS

None.

Item 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS

None.

PART II

Item 5. MARKET FOR REGISTRANT'S COMMON EQUITY AND RELATED STOCKHOLDER MATTERS

Our common stock began trading on the Nasdaq National Market (the "Nasdaq") under the symbol "AVAN" on August 24, 1998. Prior to that date, we were traded on the Nasdaq under the symbol "TCEL". The following table sets forth for the periods indicated the high and low closing sales prices for our common stock as reported by Nasdaq.

Fiscal Period	High	Low
Year Ended December 31, 2001		
1Q (Jan. 1 — March 31, 2001)	$ 8.50	$ 3.28
2Q (April 1 — June 30, 2001)	6.54	3.38
3Q (July 1 — Sept. 30, 2001)	6.35	2.37
4Q (Oct. 1 — Dec. 31, 2001)	6.93	2.25
Year Ended December 31, 2002		
1Q (Jan. 1 — March 31, 2002)	$ 4.08	$ 0.91
2Q (April 1 — June 30, 2002)	2.47	0.92
3Q (July 1 — Sept. 30, 2002)	1.25	0.66
4Q (Oct. 1 — Dec. 31, 2002)	1.60	0.90

As of March 3, 2003, there were approximately 687 shareholders of our common stock. The price of the common stock was $1.02 as of the close of the market on March 3, 2003. We have not paid any dividends on our common stock since our inception and do not intend to pay any dividends in the foreseeable future. Declaration of dividends will depend, among other things, upon our operating and future earnings, our capital requirements and general business conditions.

On October 17, 2001, we completed a direct equity placement of approximately 3,057,900 shares of common stock to institutional investors at an average price of $4.58 per share which generated net proceeds totaling approximately $13,575,200 after deducting all associated expenses of approximately $424,800. Proceeds from the direct equity placement are being used to support clinical development of our travelers' vaccine portfolio, the manufacture of commercial grade CholeraGarde™ for planned Phase III trials and other company activities.

In December 2000, we issued 1,841,236 shares of our common stock at $9.54 per share in connection with our acquisition of Megan Health, Inc. and 285,877 shares of our common stock at $10.50 per share in a separate private placement with Pfizer Inc.

On July 17, 2000, we closed a private placement of approximately 4.7 million shares of common stock at $7.85 per share which generated net proceeds totaling approximately $34,481,000 after deducting all associated expenses of approximately $2,019,000. PaineWebber, Inc. was the placement agent for the offering, which included several European and U.S. institutional investors. The transaction was not registered under the Securities Act of 1933, as amended, in reliance on an exemption from registration provided by Rule 506 of the Securities Act of 1933, as amended, which was available because, among other things, there were fewer than thirty five purchasers of common stock and more than six months had elapsed from the date of any previous offerings. Proceeds from the private placement are being used to support clinical development of our lead complement inhibitor, TP10, in infants and adults undergoing cardiac surgery on cardiopulmonary bypass, the manufacture of commercial grade TP10 for the planned pivotal Phase III in pediatric cardiac surgery and other company activities.

On September 22, 1999, we closed a private placement of approximately 5.5 million shares of common stock at $1.92 per share which generated net proceeds totaling approximately $9,838,800 after

deducting all associated expenses of approximately $661,200. Nomura was the placement agent for the offering, which included several European and U.S. institutional investors. The transaction was not registered under the Securities Act of 1933, as amended, in reliance on an exemption from registration provided by Rule 506 of the Securities Act of 1933, as amended, which was available because, among other things, there were fewer than thirty five purchasers of common stock and more than six months had elapsed from the date of any previous offerings. Proceeds from the private placement were used to support clinical development of our complement inhibitor, TP10, in infants undergoing cardiac surgery on cardiopulmonary bypass and other company activities.

Item 6. SELECTED FINANCIAL DATA

The selected consolidated financial data presented below for the years ended December 31, 2002, 2001, 2000, 1999 and 1998 have been derived from the audited consolidated financial statements of AVANT. The results of operations for 2002, 2001, 2000, 1999 and 1998 include the operating results of Virus Research Institute, Inc. ("VRI") from August 21, 1998, the date on which AVANT acquired VRI, through the present. The results of operations for 2002, 2001 and 2000 also include the operating results of Megan Health, Inc. ("Megan") from December 1, 2000, the date on which AVANT acquired Megan, through the present (see Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations"). All amounts are in thousands except per share data.

	Year Ended December 31,				
Consolidated Statements of Operations Data	**2002**	**2001**	**2000**	**1999**	**1998**
REVENUE:					
Product Sales, Product Development and Licensing Revenue	$ 6,705	$ 3,346	$ 763	$ 1,484	$ 2,150
OPERATING EXPENSE:					
Research and Development	14,709	21,581	10,774	7,872	5,703
Charge for Purchased In-Process Research & Developmentul	—	—	9,012	—	44,630
Legal Settlement	—	—	(500)	—	(166)
Other Operating Expense	6,428	6,326	5,430	5,556	4,377
Total Operating Expense	21,137	27,907	24,716	13,428	54,544
Investment Income, Net	603	1,808	1,978	635	594
Net Loss	$ (13,829)	$ (22,753)	$ (21,975)	$ (11,309)	$ (51,800)
Basic and Diluted Net Loss Per Common Share	$ (0.23)	$ (0.39)	$ (0.42)	$ (0.26)	$ (1.56)
Weighted Average Common Shares Outstanding	60,461	57,982	52,438	44,076	33,177

	December 31,				
Consolidated Balance Sheet Data	**2002**	**2001**	**2000**	**1999**	**1998**
Working Capital	$ 22,427	$ 37,821	$ 46,409	$ 12,289	$ 12,298
Total Assets	35,233	53,485	63,563	19,883	22,650
Other Long Term Obligations	456	2,693	4,233	269	563
Accumulated Deficit	(191,903)	(178,073)	(155,320)	(133,345)	(122,036)
Total Stockholders' Equity	31,344	45,269	53,932	17,413	18,770

Item 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We own financial instruments that are sensitive to market risk as part of our investment portfolio. Our investment portfolio is used to preserve our capital until it is used to fund operations, including our research and development activities. None of these market-risk sensitive instruments are held for trading purposes. We invest our cash primarily in money market mutual funds and U.S. Government and other investment grade debt securities. These investments are evaluated quarterly to determine the fair value of the portfolio. Our investment portfolio includes only marketable securities with active secondary or resale markets to help insure liquidity. We have implemented policies regarding the amount and credit ratings of investments. Due to the conservative nature of these

policies, we do not believe we have material exposure due to market risk. The impact to our financial position and results of operations from likely changes in interest rates is not material.

We do not utilize derivative financial instruments. See Notes 1 and 2 to the Consolidated Financials Statements for a description of our use of other financial instruments. The carrying amounts reflected in the consolidated balance sheet of cash and cash equivalents, accounts receivables and accounts payable approximates fair value at December 31, 2002 due to the short-term maturities of these instruments.

Safe Harbor Statement under the Private Securities Litigation Reform Act of 1995:

Statements contained in the following, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, that are not historical facts may be forward-looking statements that are subject to a variety of risks and uncertainties. There are a number of important factors that could cause the actual results to differ materially from those expressed in any forward-looking statements made by AVANT. These factors include, but are not limited to: (1) the integration of the UPT technology and programs; (2) the ability to adapt AVANT's vectoring systems to develop new, safe and effective orally administered vaccines against anthrax and plague or any other microbes used as bioweapons; (3) the ability to successfully complete development and commercialization of CholeraGarde™ (Peru-15), Ty800, CETi-1 and of other products; (4) the cost, timing, scope and results of ongoing safety and efficacy trials of CholeraGarde™ (Peru-15), Ty800, CETi-1 and other preclinical and clinical testing; (5) the ability to successfully complete product research and further development, including animal, pre-clinical and clinical studies of CholeraGarde™ (Peru-15), Ty800, CETi-1 and other products; (6) the ability of the Company to manage multiple late stage clinical trials for a variety of product candidates; (7) the volume and profitability of product sales of Megan®Vac 1 and other future products; (8) changes in existing and potential relationships with corporate collaborators; (9) the cost, delivery and quality of clinical and commercial grade materials supplied by contract manufacturers (10) the timing, cost and uncertainty of obtaining regulatory approvals to use CholeraGarde™ (Peru-15) and Ty800, among other purposes, to protect travelers and people in endemic regions from diarrhea causing diseases, to use CETi-1, among other purposes, to raise serum HDL cholesterol levels and for other products; (11) the ability to obtain substantial additional funding; (12) the ability to develop and commercialize products before competitors; (13) the integration of Megan Health's business and programs; (14) the ability to retain certain members of management; and (15) other factors detailed from time to time in filings with the Securities and Exchange Commission. In addition, the factors described under "Risk Factors" in this report may result in these differences. You should carefully review all of these factors, and you should be aware that there may be other factors that could cause these differences. These forward-looking statements were based on information, plans and estimates at the date of this report, and we do not promise to update any forward-looking statements to reflect changes in underlying assumptions or factors, new information, future events or other changes.

Item 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

AVANT's principle activity since our inception has been research and product development conducted on our own behalf, as well as through joint development programs with several pharmaceutical companies and other collaborators. We were incorporated in the State of Delaware in December 1983.

Critical Accounting Policies

Our significant accounting policies are described in Note 1 to the consolidated financial statements included in Item 8 of this Form 10-K. We believe our most critical accounting policies include revenue recognition for agreements entered into with various collaborators and the amortization policy for acquired intangible assets.

Revenue Recognition: AVANT has entered into various license and development agreements with pharmaceutical and biotechnology companies. The terms of the agreements typically include non-refundable license fees, funding of research and development, payments based upon achievement of certain milestones and royalties on net product sales. Non-refundable license fees are recognized as contract and license fee revenue when AVANT has a contractual right to receive such payment, provided a contractual arrangement exists, the contract price is fixed or determinable, the collection of the resulting receivable is reasonably assured and AVANT has no further performance obligations under the license agreement. When we have performance obligations under the terms of a contract, non-refundable fees are recognized as revenue as we complete our obligations. Where AVANT's level of effort is relatively constant over the performance period, the revenue is recognized on a straight-line basis. The determination of the performance period involves judgment on management's part. Funding of research and development is recognized over the term of the applicable contract as costs are incurred related to that contract. Revenues from milestone payments related to arrangements under which we have no continuing performance obligations are recognized upon achievement of the related milestone. Revenues from milestone payments related to arrangements under which we have continuing performance obligations are recognized as revenue upon achievement of the milestone only if all of the following conditions are met: the milestone payments are non-refundable; achievement of the milestone was not reasonably assured at the inception of the arrangement; substantive effort is involved in achieving the milestone; and, the amount of the milestone is reasonable in relation to the effort expended or the risk associated with achievement of the milestone. If any of these conditions are not met, the milestone payments are deferred and recognized as revenue over the term of the arrangement as AVANT completes its performance obligations. Option fees are recognized over the related option period. Royalty revenue consists of payments received from licensees for a portion of sales proceeds from products that utilize AVANT's licensed technologies and would be recognized when the amount of and basis for such royalty payments are reported to us in accurate and appropriate form and in accordance with the related license agreement. Payments received in advance of activities being performed are recorded as deferred revenue. Any significant changes in our estimates or assumptions could impact our revenue recognition. Revenues from product sales are recorded when the product is shipped providing no significant post-delivery obligations remain and collection of the related receivable is reasonably assured.

Amortization of Intangible Assets: The acquisition of Megan was accounted for as a purchase. Consequently, the purchase price was allocated to the acquired assets and assumed liabilities based upon their fair value at the date of acquisition. The excess of the purchase price over the tangible assets acquired was assigned to acquired intangible assets, the components of which include core technology, developed technology, strategic partner agreement and assembled work force. These acquired intangible assets, excluding assembled work force, are being amortized on a straight-line basis over their estimated lives which range from 5 to 17 years. The determination of the amortization period

involves estimates and judgment on management's part. Any significant changes in our estimates or assumptions could impact the carrying value of acquired intangible assets. We evaluate the recoverability of these assets when facts and circumstances suggest the asset could be impaired in accordance with Statement of Financial Accounting Standards No. 121 ("SFAS 121"), "Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to be Disposed Of".

Inflation and changing prices have not had a significant effect on continuing operations and are not expected to have any in the near future.

Overview

AVANT's focus is unlocking the power of the immune system to prevent and treat disease. We have assembled a broad portfolio of technologies and intellectual property that give us a strong competitive position in the vaccines arena and five of our vaccines are in clinical development. The development of immunotherapeutic vaccines like CETi-1 and the marriage of innovative vector delivery technologies with the unique VitriLife® manufacturing process represent the potential for a new generation of vaccines. Our goal is to become a leading developer of such innovative vaccines that address health care needs on a global basis.

We have actively developed and acquired innovative technologies—especially novel approaches to vaccine creation. Today our broad intellectual property position allows us to respond quickly and leverage our expertise into many different areas as opportunities and needs arise. For example, our vaccine technology for providing rapid protection against bacterial illnesses may prove useful for improving and expanding America's vaccine arsenal against microbial agents used in war or terrorist attacks.

AVANT is targeting its efforts where it can add the greatest value to the development of its products and technologies. Our goal is to demonstrate clinical proof-of-concept for each product, and then seek excellent partners to help see those products through to commercialization. This approach allows us to maximize the overall value of our technology and product portfolios while best ensuring the expeditious development of each individual product.

Acquisitions

Universal Preservation Technologies, Inc.: In January 2003, AVANT completed the previously announced acquisition of the technology and intellectual property portfolio of Universal Preservation Technologies, Inc. (UPT), a privately held company based in San Diego, California, and the licensure of certain patent rights from Elan Drug Delivery Limited (a subsidiary of Elan Corporation plc). Through this transaction, AVANT has gained exclusive rights to UPT's VitriLife® process for use in AVANT's oral vaccines and certain other non-injectable applications. VitriLife® is a patented drying method for the industrial-scale preservation of biological solutions and suspensions, such as proteins, enzymes, viruses, bacteria and other cells, which has the potential to cut production costs and improve product stability at room temperature or higher, thus eliminating the need for costly cold-chain distribution and storage of vaccines—the major challenge to vaccine affordability in many areas of the world facing endemic disease. The acquisition of UPT's assets includes only technology and patents; AVANT has not acquired UPT's San Diego facility or employees in this transaction. AVANT paid an aggregate of $2,000,000 in consideration in the transaction. The transaction will be recorded in the first quarter of 2003.

Megan Health, Inc.: On December 1, 2000, AVANT acquired all of the outstanding capital stock of Megan Health, Inc. ("Megan"), a company engaged in the discovery and development of human and animal vaccines using patented gene modification technologies. We issued approximately 1,841,200 shares of AVANT's common stock in exchange for all of the outstanding capital stock of Megan, on the basis of 0.7635 shares of AVANT common stock for each share of Megan preferred stock and 0.0811

shares of AVANT common stock for each share of Megan common stock. We also assumed all of the outstanding options to purchase common stock of Megan under Megan's stock option plan. The purchase price of $17,332,000 consisted of (i) the issuance of 1,841,200 shares of AVANT common stock valued at $15,803,400, (ii) cash distributed to certain Megan shareholders in lieu of AVANT common stock totaling $236,700, (iii) the issuance of fully vested options to purchase AVANT common stock valued at $304,500 and (iv) severance and transaction costs totaling $1,052,500. As of the date of the acquisition of Megan, AVANT had identified all significant actions to be taken to terminate certain Megan employees. Severance costs totaling approximately $164,200, were recognized upon consummation of the merger and are included in the $1,052,500 referenced above.

The acquisition of Megan has been accounted for as a purchase. Consequently, the purchase price was allocated to the acquired assets and assumed liabilities based upon their fair value at the date of acquisition. The excess of the purchase price over the tangible assets acquired was assigned to acquired intangible assets, the components of which include core technology, developed technology, strategic partner agreement and assembled work force. These acquired intangible assets are being amortized on a straight-line basis over their estimated lives which range from 5 to 17 years. An allocation of $9,012,300 was made to in-process research and development ("IPR&D"), which represented purchased in-process technology which had not yet reached technological feasibility and had no alternative future use. The amount was charged as an expense in our financial statements during the fourth quarter of 2000.

As of the date of the acquisition, Megan was engaged in three significant research and development projects. See our discussion of these projects in the section entitled "Animal Health and Food Safety Vaccine Programs" on page 7. The value of IPR&D was determined by estimating the costs to develop the purchased in-process technology into commercially viable products, estimating the net cash flows from such projects and discounting the net cash flows back to their present values. The discount rate in each project takes into account the uncertainty surrounding the successful development and commercialization of the purchased in-process technology. The resulting net cash flows for these projects were based on our best estimates of revenue, cost of sales, research and development costs, selling, general and administrative costs, and income taxes for each project, and the net cash flows reflect assumptions that would be used by market participants.

Substantial additional research and development will be required prior to reaching technological feasibility on any of these products. As of December 31, 2002, technological feasibility had not yet been reached on any of the major projects acquired, and no significant departures from the assumptions included in the valuation analysis had occurred. In addition, each product needs to successfully complete a series of clinical trials and to receive USDA or other regulatory approval prior to commercialization. We are also dependent upon the activities of our collaborators in developing and marketing our products. There can be no assurance that these projects will ever reach feasibility or develop into products that can be marketed profitably, nor can there be assurance AVANT and our collaborators will be able to develop and commercialize these products before our competitors. If these products are not successfully developed and do not become commercially viable, our financial condition and results of operations could be materially adversely affected.

The acquisitions of Megan and VRI represent the only purchases of historical IPR&D by AVANT to date. As of December 31, 2002, we have no immediate plans to acquire additional IPR&D, although we expect to raise additional capital, as required, through licensing of technology programs with existing or new collaborative partners, possible business combinations, or the issuance of common stock via private placement or public offering.

Program Developments

Rotavirus Vaccine: Rotavirus is a major cause of diarrhea and vomiting in infants and children. No vaccine against rotavirus is currently on the market. In 1997, we licensed our oral rotavirus vaccine to Glaxo. In 1999, after our Phase II study demonstrated 89% protection in a study involving 215 infants, Glaxo paid us an additional license fee and assumed full responsibility for funding and performing all remaining clinical development. Glaxo has initiated Phase I/II bridging studies in Europe, Latin America and Asia using its newly manufactured rotavirus vaccine, called Rotarix™. Glaxo is now planning to initiate Phase III global clinical trials of the vaccine. Assuming product development and commercialization continues satisfactorily, we may receive additional milestone payments of up to $8.5 million upon the achievement of specified milestones. In addition, we will be entitled to royalties based on net sales of Rotarix™.

Cholesterol Management Vaccine: We are developing an immunotherapeutic vaccine against endogenous cholesteryl ester transfer protein ("CETP"), which may be useful in reducing risks associated with atherosclerosis. CETP is a key intermediary in the balance of HDL (high-density lipoprotein) and LDL. We are developing this vaccine (CETi-1) to stimulate an immune response against CETP, which we believe may improve the ratio of HDL to LDL cholesterol and reduce the progression of atherosclerosis. We have conducted preliminary studies of rabbits, which have demonstrated the ability of CETi-1 vaccine to elevate HDL and reduce the development of blood vessel lesions. In September 1999, we initiated a double-blind placebo controlled, Phase I clinical trial of our CETi-1 vaccine in adult volunteers. The object of the study was to demonstrate the safety of single administrations of the vaccine at four different dosage strengths and results were announced in January 2001.

The vaccine was very well tolerated in the 48 adult volunteers who participated in the study. The only serious adverse reaction reported during the study (allergic reaction to shower gel) was not related to study medication. There were no differences in the safety profiles of placebo groups and active vaccine groups. In addition, there was limited evidence of an immune response in one subject treated with the highest dose. Subsequently, AVANT announced results from a double-blinded placebo controlled extension of the earlier completed CETi-1 Phase I trial in the same healthy adult volunteers receiving a second dose of the vaccine. CETi-1 is being developed for the management of patients with low levels of HDL cholesterol. Results from the extension study showed measurable antibody titers in all dose groups treated with study medication, suggesting a dose-response relationship.

These data were extremely helpful in moving the program forward to a placebo controlled Phase II study, which was initiated in August 2001, in approximately 200 patients with low levels of HDL cholesterol. The objectives of the study are to evaluate the safety, immunogenicity and dose-response relationship of the CETi-1 product in patients who receive an initial immunization followed by boosters. The primary endpoint is the change in HDL cholesterol measured after the six-month booster. Results are expected from the trial during the fourth quarter of 2003. As clinical data become available, we plan to seek a corporate partner to complete development and to commercialize the CETi-1 vaccine.

Bacterial Vaccines: Development of a safe, effective cholera vaccine is the first step in establishing AVANT's single-dose, oral bacterial vaccine franchise. During 2002, AVANT completed a Phase II dose-ranging study with CholeraGarde™ which confirmed the safety and activity of this vaccine and supported the start of trials in December 2002 with the International Vaccine Institute (IVI) in Bangladesh where cholera is endemic. In addition, the National Institute of Allergy and Infectious Disease (NIAID) of the National Institutes of Health (NIH) and AVANT have entered into a cooperative agreement for the NIAID to conduct a Phase I in-patient dose ranging clinical trial aimed at demonstrating the safety and immunogenicity of the Ty800 typhoid fever vaccine. The trial is planned for an NIAID funded clinical site using NIAID funded clinical material. The NIAID trial seeks to

confirm the safety and immunogenicity of the Ty800 oral vaccine observed in an earlier physician sponsored Ty800 vaccine study. Finally, we are developing three additional bacterial vaccines against enterotoxigenic *E. coli*, *Shigella* and *Campylobacter*—all important causes of serious diarrheal diseases worldwide.

The attenuated live bacteria used to create AVANT's single-dose oral vaccines also can serve as vectors for the development of vaccines against other bacterial and viral diseases. By engineering key disease antigens into the DNA of the vector organisms, AVANT expects to be able to extend the protective ability of its single-dose oral vaccines to a wide variety of illnesses. We believe our vector technologies may prove useful for improving and expanding America's vaccine arsenal against microbial agents used in war or terrorist attacks.

In October 2001, AVANT granted DynPort Vaccine Company LLC (DVC) a license for exclusive rights to use certain components of AVANT's vaccine technology. In October 2002, DVC announced the initiation of a Phase I clinical trial of a new injectable recombinant anthrax vaccine in approximately 70 volunteers. The vaccine candidate consists of a highly purified protein—Protective Antigen—derived from the anthrax bacterium using recombinant technology and advance production processes licensed from AVANT. DVC hopes this vaccine will offer a safe, effective product to support the country's need for a new-generation anthrax vaccine. The Phase I trial will be conducted at the Walter Reed Army Institute of Research (WRAIR) in conjunction with the Henry M. Jackson Foundation. The study will evaluate tolerability, safety and immunogenicity of DVC's new vaccine being developed for the Department of Defense (DoD) through the Joint Vaccine Acquisition Program (JVAP).

In July 2002, AVANT was awarded a Phase I Small Business Innovation Research (SBIR) grant to support the development of the company's single oral-dose bacterial vectors to immunize people against anthrax. Vaccine delivery using live, attenuated bacteria is particularly well suited for situations where ease of administration and rapid onset of immunity are required, such as for protection against biological warfare agents. The National Institute of Allergy and Infectious Disease (NIAID) of the National Institutes of Health (NIH) awarded this Live Attenuated Vaccines Against Anthrax grant, which provides approximately $125,000 in funding to AVANT over a twelve-month period.

Further, in January 2003, AVANT was awarded a subcontract to develop for the U.S. Department of Defense an oral combination vaccine against anthrax and plague using AVANT's proprietary vaccine technologies. Under the agreement, AVANT may receive in excess of $8 million over a two-year period, covering vaccine development through preclinical testing. AVANT executed the subcontract with DVC.

AVANT is leveraging the value of its vaccine technologies into additional markets through key collaborations. In addition to our arrangements with DVC and the NIAID to develop new generations of anthrax and plague vaccines using our vectoring technologies and IVI to bring our bacterial vaccines to developing countries where they are most needed, AVANT has also partnered with Pfizer, who will apply AVANT's vaccine technologies to animal health and human food safety markets. The Pfizer research programs are making excellent progress and in late 2002 we achieved an important milestone, which resulted in a modest payment to AVANT.

Modern biotechnology offers great potential for bettering health conditions worldwide. New vaccine technologies, in particular, can provide avenues to disease prevention and treatment with notable advantages over drugs in terms of patient compliance and cost. They also offer strategies to solve global health problems, to protect both civilians and military from biowarfare threats, and to increase the safety of our food supply. Our goal is to become a leading developer of innovative vaccines that address health care needs on a global basis. In this regard, we have recently completed the acquisition of VitriLife®, a new technology with the potential to reduce manufacturing costs and improve product stability, eliminating the need for vaccine refrigeration. With this technology and our *Cholera*- and *Salmonella*-vectored delivery technologies, we can now develop a new generation of

vaccines that have an ideal product profile: safe and effective, oral, single-dose, rapidly protective and requiring no refrigeration.

Complement Inhibitors: In 1997, we entered into an agreement with Novartis relating to the development of our complement inhibitor, TP10, for use in xenotransplantation (animal organs into humans) and allotransplantation (human organs into humans). The decision to license TP10 resulted in a $6 million equity investment and license payment by Novartis which was received by AVANT in January 2000. As of September 6, 2002, Novartis and AVANT agreed to terminate the TP10 agreement pursuant to which Novartis paid a net termination fee of $1.9 million and returned to AVANT all pre-clinical and clinical TP10 material.

Based on the outcomes of an adult TP10 clinical trial in which TP10 failed to meet the trial's primary endpoint, AVANT no longer plans to advance clinical development of the complement inhibitor program on its own or to invest a significant amount of its own resources into the development of this program going forward. Instead, we plan to seek partnering arrangements to capture the value inherent in this program and its strong intellectual property. With the termination of the Novartis agreement, AVANT can now offer a worldwide license for all fields, which we believe improves the likelihood of a partnership arrangement.

Technology Licensing

AVANT has adopted a business strategy of out-licensing technology that does not match its development focus or where it lacks sufficient resources for the technology's efficient development. For example, when AVANT acquired Megan it also signed an agreement with Pfizer to leverage the value of Megan's oral vaccine technology in a significant market opportunity (animal health and food safety) outside of AVANT's own focus on human health care.

DynPort License: In October 2001, AVANT granted a license to DynPort Vaccine Company LLC (DVC) for exclusive rights to use certain components of AVANT's vaccine technology. Financial terms of the agreement with DVC include license fees, milestone payments and royalties. DVC, a private company, is chartered with providing an integrated approach for the advanced development of specific vaccines and other products to protect against the threat of biological warfare agents. DVC has a 10-year contract with the U.S. Department of Defense for the development of vaccines against certain acute infectious diseases and contagious diseases, initiated under the 1997 Joint Vaccine Acquisition Program. We see this licensing opportunity as an excellent way to further leverage our vaccine technology.

Formation of Parallel Solutions: During October 2001, AVANT contributed its polyphosphazene polymer adjuvant business (the "PCPP business"), including Adjumer® and Micromer®, into a newly formed, privately held company, Parallel Solutions, Inc. ("Parallel"), in exchange for a non-controlling minority ownership position in Parallel. AVANT believes that Parallel's plans to expand the PCPP business beyond vaccine adjuvants, and indeed beyond human therapeutics, offer greater opportunities to create value. This transaction allows AVANT to further leverage this technology with the potential for significant upside benefits as a shareholder of Parallel, while divesting its obligations for manufacturing PCPP and the burden of funding the PCPP business. In connection with this transaction, AVANT has assigned all of its rights and obligations under the Aventis license agreements to Parallel. AVANT has no future funding commitments or other obligations to Parallel and has neither a role in the management of Parallel nor representation on the Parallel board of directors.

Results of Operations

Fiscal Year Ended December 31, 2002 compared with Fiscal Year ended December 31, 2001

AVANT reported a net loss of $13,829,200, or $0.23 per share, for the year ended December 31, 2002, a decrease of $8,923,800, or 39%, compared to a net loss of $22,753,000, or $0.39 per share, for the year ended December 31, 2001. The weighted average common shares outstanding used to calculate the net loss per common share was 60,461,400 in 2002 and 57,981,800 in 2001.

Revenue

Total revenue increased $3,358,900, or 100%, to $6,704,800 in 2002 from $3,345,900 in 2001.

Product development and licensing revenue increased $3,412,600, or 114%, to $6,412,400 in 2002 from $2,999,800 in 2001. In 2002, product development and licensing revenue consisted primarily of a $1,900,000 net fee paid by Novartis for the termination of its agreement on TP10 in transplantation, the recognition of the remaining $2,461,700 in deferred revenue related to the Novartis agreement, $817,400 in the amortization of a nonrefundable license fee from Pfizer, a $500,000 milestone payment from Pfizer, $458,400 from Pfizer's funding of research and development at Megan, annual license and milestone payments of $137,500 from DynPort and $137,400 received in connection with our SBIR and STTR grants. The Novartis-related revenue in 2002 is non-recurring in nature and the deferred revenue portion represents non-cash revenue. In 2001, product development and licensing revenue consisted primarily of $1,601,300 in the amortization of nonrefundable license fees from Novartis and Pfizer, Pfizer's funding of research and development at Megan, annual license and milestone payments of $212,500 from DynPort and $480,000 received in connection with our SBIR and STTR grants.

Product sales decreased $53,700, or 16%, to $292,400 in 2002 from $346,100 in 2001 and were derived from sales of our Megan®Vac 1 product, a vaccine for use in chickens for protection against multiple strains of *Salmonella* bacteria. As of September 1, 2002, we transferred the marketing and distribution of this product line to our partner, Lohmann Animal Health International (LAHI), and in the future AVANT will receive a percentage of all Megan®Vac 1 product sales in the form of royalty payments.

Operating Expense

Total operating expense decreased $6,770,600, or 24%, to $21,136,700 for 2002 compared to $27,907,300 for 2001. The decrease in total operating expense for 2002 compared to 2001 is primarily due to decreased clinical trials costs of approximately $6,240,700 and decreased clinical materials costs of approximately $1,155,800 incurred in connection with the Company's clinical programs. Also contributing to this decrease was the elimination of goodwill amortization of $580,800, offset in part by an increase in consultancy, legal, insurance and facility-related expenses.

Research and development expense decreased $6,872,000, or 32%, to $14,708,500 in 2002 from $21,580,500 in 2001. The decrease in 2002 compared to 2001 is primarily due to (1) the Company's terminated TP10 programs; (2) a decrease in non-TP10 clinical trials expenses due to fewer clinical trials in progress during 2002; and (3) a decrease in manufacturing costs as a result of delays in production runs for the bacterial vaccines programs. This decrease was offset in part by increases in manufacturing consultancy expenses of $494,600 and facility-related expenses of $508,000.

Selling, general and administrative expense increased $678,000, or 14%, to $5,592,100 in 2002 compared to $4,914,100 in 2001. The increase in expense in 2002 compared to 2001 is primarily attributed to increased consultancy expense of $357,100, legal expense of $159,700, insurance costs of $112,900 and corporate communications costs of $101,100 offset in part by a decrease in selling and marketing expenses of $136,100.

Investment Income, Net

Interest income decreased $1,205,600, or 67%, to $602,700 for 2002 compared to $1,808,300 for 2001. The decrease in interest income is primarily due to significantly lower interest rates and lower average cash balances in 2002.

Fiscal Year Ended December 31, 2001 compared with Fiscal Year ended December 31, 2000

AVANT reported a net loss of $22,753,000, or $0.39 per share, for the year ended December 31, 2001, compared to a net loss of $21,975,000, or $0.42 per share, for the year ended December 31, 2000. The net loss for the year ended December 31, 2000 includes a charge of $9,012,300 for purchased in-process research and development related to the acquisition of Megan in December 2000. Excluding the charge for purchased in-process research and development in 2000, the net loss for 2001 increased $9,790,300, or 75.5%, to $22,753,000, or $0.39 per share, compared to a net loss of $12,962,700, or $0.25 per share, for 2000. The weighted average common shares outstanding used to calculate the net loss per common share was 57,981,800 in 2001 and 52,438,100 in 2000.

Revenue

Total revenue increased $2,582,700, or 338%, to $3,345,900 in 2001 from $763,200 in 2000.

Product development and licensing revenue increased $2,270,000, or 311%, to $2,999,800 in 2001 from $729,800 in 2000. In 2001, product development and licensing revenue consisted primarily of $1,601,300 in the amortization of nonrefundable license fees from Novartis and Pfizer, Pfizer's funding of research and development at Megan, annual license and milestone payments of $212,500 from DynPort and $480,000 received in connection with our SBIR and STTR grants. In 2000, we recognized $729,800 in the amortization of nonrefundable license fees from Novartis and Pfizer in product development and licensing revenue.

Product sales increased $312,700 to $346,100 in 2001 from $33,400 in 2000 and were derived from sales of our Megan®Vac 1 product, a vaccine for use in chickens for protection against multiple strains of *Salmonella* bacteria, which we acquired in connection with our acquisition of Megan on December 1, 2000. The increase in product sales is due to the fact that in 2000 only one month of Megan®Vac 1 product sales were recorded.

Operating Expense

Total operating expense for 2001 was $27,907,300 compared to $24,716,300 for 2000. Operating expense for 2000 included a charge of $9,012,300 for purchased in-process research and development in connection with the acquisition of Megan in December 2000. Excluding the purchased in-process research and development charge in 2000, operating expense increased $12,203,300, or 77.7%, to $27,907,300 for 2001 compared to $15,704,000 for 2000. The increase in total operating expense for 2001 compared to 2000 is primarily due to increased clinical trials costs and clinical materials costs incurred in connection with AVANT's TP10 and CETi-1 clinical programs. Also contributing to this increase was the addition of the operating costs of Megan in the twelve-month period in 2001 and an increase in the charges for amortization of acquired intangible assets related to the Megan Health acquisition in late 2000. Also, expenses in 2000 were offset in part by the receipt of legal settlement payments totaling $500,000.

Research and development expense increased $10,806,300, or 100.3%, to $21,580,500 in 2001 from $10,774,200 in 2000. The increase in 2001 compared to 2000 is primarily due to significant costs associated with conducting clinical trials of TP10 and CETi-1, an increase in expense associated with the manufacture of clinical materials for planned clinical trials and twelve months of Megan research and development expense.

Selling, general and administrative expense increased $105,800, or 2.2%, to $4,914,100 in 2001 compared to $4,808,300 in 2000. Included in selling, general and administrative expense in 2001 and 2000 are charges of $22,400 and $69,600 for the write-off of certain capitalized patent costs associated with our complement and SMIR programs, respectively. Excluding the writeoff of patent costs in 2001 and 2000, selling, general and administrative expense increased $153,000, or 3.2%, to $4,891,700 for 2001 compared to $4,738,700 for 2000. The increase in expense in 2001 compared to 2000 is primarily attributed to the addition of twelve months of Megan selling, general and administrative expense.

Investment Income, Net

Interest income decreased $169,700, or 8.6%, to $1,808,300 for 2001 compared to $1,978,100 for 2000. The decrease in interest income is primarily due to lower interest rates and lower average cash balances in 2001.

Liquidity and Capital Resources

AVANT's cash, cash equivalents and marketable securities at December 31, 2002 was $25,070,700 compared to $42,665,900 at December 31, 2001.

Net cash used in operating activities decreased to $16,659,400 in 2002 compared $20,825,400 in 2001. The decrease is attributed to a decrease in net loss incurred in 2002 compared to 2001 and decreases in accounts receivable and inventories, offset by an increase in prepaid expenses and decreases in accounts payable, accrued expenses and deferred revenue.

Net cash used in investing activities increased to $840,600 in 2002 compared to $775,400 in 2001. The increase is primarily due to the increased investment in patents and licenses, offset in part by decreased investment in property and equipment in 2002 compared to 2001.

Net cash used in financing activities was $95,200 in 2002 compared to net cash provided by financing activities of $14,089,800 in 2001. The decrease is due to a decrease in proceeds from the issuance of stock and from the exercise of stock options and warrants, coupled with the purchases of treasury stock under a share repurchase plan.

In connection with our acquisition of the technology and intellectual property portfolio of UPT and the licensure of certain patents from Elan, AVANT paid an aggregate of $2,000,000 in consideration in the transaction. The transaction will be recorded in the first quarter of 2003. In connection with our acquisition of Megan, we entered into a licensing agreement with Pfizer whereby Pfizer made an initial license payment of $2.5 million together with a $3 million equity investment in AVANT. In July 1999, Novartis exercised its option to license TP10 for use in the field of transplantation. The decision to license TP10 resulted in a $6 million payment by Novartis which was received by AVANT in January 2000. As of September 6, 2002, Novartis and AVANT agreed to terminate the TP10 agreement pursuant to which Novartis paid a net termination fee of $1.9 million and returned to AVANT all pre-clinical and clinical TP10 material.

In August 2002, our Board of Directors approved a stock repurchase plan, which authorized the buyback of up to two million shares of our common stock in the open market or through privately negotiated transactions through August 31, 2003. Under the plan, we have acquired 132,600 shares at an aggregate cost of approximately $136,400 and an average price of $1.03 per share.

In October 2001, we completed a direct equity placement of approximately 3,057,900 shares of common stock to institutional investors at an average price of $4.58 per share which generated net proceeds totaling approximately $13,575,200. In July 2000, we completed a private placement of 4,650,900 newly issued shares of common stock at $7.85 per share which generated net proceeds totaling approximately $34,481,000 after deducting all associated expenses.

As of December 31, 2002, AVANT had future payments required under contractual obligations and other commitments approximately as follows:

	Total	Less than One Year	1-3 Years	4-5 Years
Operating lease obligations	$ 9,534,500	$ 2,325,200	$ 6,499,600	$ 709,700
Licensing obligations	1,061,000	596,000	275,000	190,000
Total future obligations	$ 10,595,500	$ 2,921,200	$ 6,774,600	$ 899,700

AVANT believes that cash inflows from existing grants and collaborations, interest income on invested funds and our current cash and cash equivalents will be sufficient to meet estimated working capital requirements and fund operations beyond December 31, 2003. The working capital requirements of AVANT are dependent on several factors including, but not limited to, the costs associated with research and development programs, pre-clinical and clinical studies, manufacture of clinical and commercial grade materials and the scope of collaborative arrangements. During 2003, we expect to take steps to raise additional capital including, but not limited to, licensing of technology programs with existing or new collaborative partners, possible business combinations, or the issuance of common stock via private placement or public offering. There can be no assurance that such efforts will be successful.

Recent Accounting Pronouncements

In July 2002, the FASB issued SFAS 146, *Accounting for Costs Associated with Exit or Disposal Activities*. SFAS 146 requires that a liability for a cost associated with an exit or disposal activity be recognized at its fair market value when the liability is incurred, rather than at the date of an entity's commitment to an exit plan. The provisions of SFAS 146 are effective for exit or disposal activities that are initiated after December 31, 2002. The adoption of SFAS 146 has not had a material effect on the Company's financial statements.

In December 2002, the Financial Accounting Standards Board issued Statement of Financial Accounting Standards No. 148, "Accounting for Stock-Based Compensation—Transition and Disclosure" ("SFAS 148"). SFAS 148 provides alternative methods of transition for a voluntary change to the fair value method of accounting for stock-based employee compensation as originally provided by SFAS No. 123 "Accounting for Stock-Based Compensation". Additionally, SFAS 148 amends the disclosure requirements of SFAS 123 to require prominent disclosure in both the annual and interim financial statements about the method of accounting for stock-based compensation and the effect of the method used on reported results. The transitional requirements of SFAS 148 will be effective for all financial statements for fiscal years ending after December 15, 2002. The disclosure requirements shall be effective for financial reports containing condensed financial statements for interim periods beginning after December 15, 2002. We expect to adopt the disclosure portion of this statement for the quarter ending March 31, 2003. The application of this standard will have no impact on our consolidated financial position or results of operations.

In November 2002, the FASB issued FASB Interpretation No. 45, Guarantor's Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others, an interpretation of FASB Statements No. 5, 57, and 107 and rescission of FASB Interpretation No. 34 ("FIN 45") requires that a guarantor recognize, at the inception of a guarantee, a liability for the fair value of the obligation undertaken by issuing the guarantee. The Interpretation also requires additional disclosures to be made by a guarantor in its interim and annual financial statements about its obligations under certain guarantees it has issued. The accounting requirements for the initial recognition of guarantees are applicable on a prospective basis for guarantees issued or modified after December 31, 2002. The disclosure requirements are effective for all guarantees outstanding, regardless

of when they were issued or modified, during the first quarter of fiscal 2003. The adoption of FIN No. 45 did not have a material effect on our consolidated financial statements.

In January 2003, the FASB issued FASB Interpretation No. 46, *Consolidation of Variable Interest Entities, an Interpretation of ARB No. 51*(FIN 46). The primary objective of the Interpretation is to provide guidance on the identification of, and financial reporting for, entities over which control is achieved through means other than voting rights; such entities are known as variable-interest entities (VIEs). Although the FASB's initial focus was on special-purpose entities (SPEs), the final guidance applies to a wide range of entities. FIN 46 applies to new entities that are created after the effective date, as well as applies to existing entities. The FIN is effective to preexisting entities as of the beginning of the first interim period beginning after June 15, 2003, and to any new entities beginning February 1, 2003. Once it goes into effect, FIN 46 will be the guidance that determines (1) whether consolidation is required under the "controlling financial interest" model of Accounting Research Bulletin No. 51 (ARB 51), Consolidated Financial Statements, or (b) other existing authoritative guidance, or, alternatively, (2) whether the variable-interest model under FIN 46 should be used to account for existing and new entities. The Company is evaluating the impact of FIN 46 on its financial statements.

Item 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Report of Independent Accountants

To The Board of Directors and Shareholders of
AVANT Immunotherapeutics, Inc.

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of operations, stockholders' equity and cash flows present fairly, in all material respects, the financial position of AVANT Immunotherapeutics, Inc. and its subsidiaries (the "Company") at December 31, 2002 and 2001, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2002, in conformity with accounting principles generally accepted in the United States of America. 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 of these statements in accordance with auditing standards generally accepted in the United States of America, which 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, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

As discussed in Note 4 to the consolidated financial statements, the Company changed its method of accounting for goodwill in 2002.

PricewaterhouseCoopers LLP
Boston, Massachusetts
February 19, 2003

CONSOLIDATED BALANCE SHEET

	December 31, 2002	December 31, 2001
ASSETS		
Current Assets:		
Cash and Cash Equivalents	$ 25,070,700	$ 42,665,900
Accounts Receivable	230,900	267,200
Inventories	—	71,500
Prepaid and Other Current Assets	558,400	338,800
Total Current Assets	25,860,000	43,343,400

Property and Equipment, Net	1,119,500	987,800
Intangible and Other Assets	7,217,400	8,117,200
Goodwill	1,036,300	1,036,300
Total Assets	$ 35,233,200	$ 53,484,700
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current Liabilities:		
Accounts Payable	$ 836,000	$ 1,129,500
Accrued Expenses	2,098,900	2,732,600
Current Portion Deferred Revenue	497,700	1,660,400
Total Current Liabilities	3,432,600	5,522,500
Long-Term Deferred Revenue	456,200	2,693,400
Commitments and Contingent Liabilities (Note 3)		
Stockholders' Equity:		
Common Stock, $.001 Par Value 100,000,000 Shares Authorized; 60,464,900 Issued and 60,332,300 Outstanding at December 31, 2002; 60,449,100 Issued and Outstanding at December 31, 2001	60,500	60,400
Additional Paid-In Capital	223,322,900	223,281,800
Less: 132,600 Common Treasury Shares at Cost at December 31, 2002	(136,400)	—
Accumulated Deficit	(191,902,600)	(178,073,400)
Total Stockholders' Equity	31,344,400	45,268,800
Total Liabilities and Stockholders' Equity	$ 35,233,200	$ 53,484,700

The accompanying notes are an integral part of the consolidated financial statements.

CONSOLIDATED STATEMENT OF OPERATIONS

	Year Ended December 31, 2002	Year Ended December 31, 2001	Year Ended December 31, 2000
REVENUE:			
Product Development and Licensing Revenue	$ 6,412,400	$ 2,999,800	$ 729,800
Product Sales	292,400	346,100	33,400
Total Revenue	6,704,800	3,345,900	763,200
OPERATING EXPENSE:			
Research and Development	14,708,500	21,580,500	10,774,200
Selling, General and Administrative	5,592,100	4,914,100	4,808,300
Cost of Product Sales	41,000	36,800	3,500
Charge for Purchased In-Process Research & Development	—	—	9,012,300
Legal Settlement	—	—	(500,000)
Amortization of Acquired Intangible Assets	795,100	795,100	66,200
Amortization of Goodwill	—	580,800	551,800
Total Operating Expense	21,136,700	27,907,300	24,716,300
Operating Loss	(14,431,900)	(24,561,400)	(23,953,100)
Investment Income, Net	602,700	1,808,400	1,978,100
Net Loss	$ (13,829,200)	$ (22,753,000)	$ (21,975,000)
Basic and Diluted Net Loss Per Common Share	$ (0.23)	$ (0.39)	$ (0.42)
Weighted Average Common Shares Outstanding	60,461,600	57,981,800	52,438,100

The accompanying notes are an integral part of the consolidated financial statements.

CONSOLIDATED STATEMENT OF STOCKHOLDERS' EQUITY

FOR THE YEARS ENDED DECEMBER 31, 2002, 2001 AND 2000

	Shares	Common Stock Par Value	Additional Paid-In Capital	Treasury Stock Cost	Accumulated Deficit	Total Stockholders' Equity
Balance at December 31, 1999	48,127,400	$ 48,100	$ 150,710,300	—	$ (133,345,400)	$ 17,413,000
Shares Issued upon Exercise of Stock Options	738,800	700	2,114,800	—	—	2,115,500
Shares Issued upon Exercise of Warrants	55,000	100	313,600	—	—	313,700
Employee Stock Purchase Plan Issuance	5,500	—	11,000	—	—	11,000
Net Proceeds from Stock Issuance	6,376,300	6,400	39,509,500	—	—	39,515,900
Shares Issued for Acquisition of Megan Health, Inc.	1,841,200	1,800	16,536,100	—	—	16,537,900
Net Loss	—	—	—	—	(21,975,000)	(21,975,000)
Balance at December 31, 2000	57,144,200	57,100	209,195,300	—	(155,320,400)	53,932,000
Shares Issued upon Exercise of Stock Options	228,900	200	461,100	—	—	461,300
Shares Issued upon Exercise of Warrants	4,800	—	5,600	—	—	5,600
Employee Stock Purchase Plan Issuance	13,300	—	47,700	—	—	47,700
Net Proceeds from Stock Issuance	3,057,900	3,100	13,572,100	—	—	13,575,200
Net Loss	—	—	—	—	(22,753,000)	(22,753,000)
Balance at December 31, 2001	60,449,100	60,400	223,281,800	—	(178,073,400)	45,268,800
Employee Stock Purchase Plan Issuance	15,800	100	41,100	—	—	41,200
Purchase of 132,600 Shares of Treasury Stock at Cost	—	—	—	(136,400)	—	(136,400)
Net Loss	—	—	—	—	(13,829,200)	(13,829,200)
Balance at December 31, 2002	60,464,900	$ 60,500	$ 223,322,900	$ (136,400)	$ (191,902,600)	$ 31,344,400

The accompanying notes are an integral part of the consolidated financial statements.

CONSOLIDATED STATEMENT OF CASH FLOWS

Increase (Decrease) in Cash and Cash Equivalents	Year Ended December 31, 2003	Year Ended December 31, 2001	Year Ended December 31, 2000
Cash Flows From Operating Activities:			
Net Loss	$ (13,829,200)	$ (22,753,000)	$ (21,975,000)
Adjustments to Reconcile Net Loss to Cash Used by Operating Activities:			
Depreciation and Amortization	1,622,100	2,257,300	1,310,800
Write-off of Capitalized Patent Costs	—	22,400	69,600
Loss On Disposal of Assets	—	67,300	—
Charge for Purchased In-Process Research and Development	—	—	9,012,300
Changes in Assets and Liabilities, Net of Acquisition:			
Accounts Receivable	36,300	(113,700)	(8,100)
Inventories	71,500	(12,300)	2,400
Prepaid and Other Current Assets	(219,600)	682,400	(541,900)
Accounts Payable and Accrued Expenses	(927,200)	278,200	1,787,900
Deferred Revenue	(3,399,900)	(1,418,800)	5,772,600
Lease Receivable	—	395,700	431,700
Lease Payable	—	(274,500)	(294,200)
Other Non Current Assets	(13,400)	43,500	—
Net Cash Used in Operating Activities	(16,659,400)	(20,825,500)	(4,431,900)

Cash Flows From Investing Activities:			
Acquisition of Property and Equipment	(567,700)	(605,200)	(177,200)
Increase in Patents and Licenses	(272,900)	(170,200)	(282,000)
Decrease in Long-Term Restricted Cash	—	—	217,000
Cash Paid for Acquisition of Megan Health, Inc.	—	—	(724,000)
Net Cash Used in Investing Activities	(840,600)	(775,400)	(966,200)
Cash Flows From Financing Activities:			
Net Proceeds from Stock Issuance	—	13,575,200	39,515,900
Proceeds from Exercise of Stock Options and Warrants	41,200	514,600	2,440,200
Purchases of Treasury Stock	(136,400)	—	—
Net Cash Provided by (Used In) Financing Activities	(95,200)	14,089,800	41,956,100
Increase (Decrease) in Cash and Cash Equivalents	(17,595,200)	(7,511,100)	36,558,000
Cash and Cash Equivalents at Beginning of Period	42,665,900	50,177,000	13,619,000
Cash and Cash Equivalents at End of Period	$ 25,070,700	$ 42,665,900	$ 50,177,000

The accompanying notes are an integral part of the consolidated financial statements.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

YEARS ENDED DECEMBER 31, 2002, 2001 and 2000

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

(A) Nature of Business

AVANT Immunotherapeutics, Inc. ("AVANT") is a biopharmaceutical company engaged in the discovery, development and commercialization of products that harness the human immune response to prevent and treat disease. Since its inception, AVANT has focused on unlocking the power of the immune system. We have actively developed and acquired innovative technologies—especially novel approaches to vaccine creation—that harness the immune response to prevent or fight disease. Today our broad intellectual property position allows us to respond quickly and leverage our expertise into many different areas as opportunities and needs arise. We develop and commercialize products on a proprietary basis and in collaboration with established pharmaceutical partners and other collaborators, including GlaxoSmithKline plc, Pfizer Inc, DynPort Vaccine Company LLC and Lohmann Animal Health International.

In October 2001, we completed a direct equity placement of approximately 3,057,900 shares of common stock to institutional investors at an average price of $4.58 per share which generated net proceeds totaling approximately $13,575,200. In July 2000, we completed a private placement of approximately 4,650,900 shares of common stock to institutional investors at a price of $7.85 per share which generated net proceeds totaling approximately $34,481,000.

On December 1, 2000, AVANT acquired all of the outstanding capital stock of Megan Health, Inc. ("Megan"), a company engaged in the discovery and development of human and animal vaccines using patented gene modification technologies (see Note 13). On August 21, 1998, AVANT acquired all of the outstanding capital stock of Virus Research Institute, Inc. ("VRI"), a company engaged in the discovery and development of systems for the delivery of vaccines and immunotherapeutics and novel vaccines.

In December 2000, Pfizer Inc made an equity investment of $3,000,000 for 285,900 shares of our common stock and paid a license fee of $2,500,000 as a result of our acquisition of Megan Health, Inc.

AVANT's cash and cash equivalents at December 31, 2002 was $25,070,700. Our working capital at December 31, 2002 was $22,427,400. We incurred a loss of $13,829,200 for the year ended December 31, 2002. AVANT believes that cash inflows from existing grants and collaborations, interest income on invested funds and our current cash and cash equivalents will be sufficient to meet estimated working capital requirements and fund operations beyond December 31, 2003. The working capital requirements of AVANT are dependent on several factors including, but not limited to, the costs associated with research and development programs, pre-clinical and clinical studies, manufacture of clinical materials and the scope of collaborative arrangements. During 2003, we expect to take steps to raise additional capital, including, but not limited to, licensing of technology programs with existing or new collaborative partners, possible business combinations, or the issuance of common stock via private placement or public offering. There can be no assurances that such efforts will be successful.

(B) Basis of Presentation

The consolidated financial statements include the accounts of AVANT Immunotherapeutics, Inc. and our wholly-owned subsidiary, Megan Health, Inc. All intercompany transactions have been eliminated.

(C) Cash Equivalents and Investments

Cash and cash equivalents consist of cash and short-term investments with original maturities of three months or less. Cash and cash equivalents are stated at cost, which approximates fair value.

We invest our non-operating cash in debt instruments of financial institutions, government entities and corporations, and mutual funds. We have established guidelines relative to credit ratings, diversification and maturities to mitigate risk and maintain liquidity.

(D) Fair Value of Financial Instruments

AVANT enters into various types of financial instruments in the normal course of business. Fair values for cash, cash equivalents, short-term investments, accounts and notes receivable, accounts and notes payable and accrued expenses approximate carrying value at December 31, 2002 and 2001, due to the nature and the relatively short maturity of these instruments.

(E) Revenue Recognition

AVANT has entered into various license and development agreements with pharmaceutical and biotechnology companies. The terms of the agreements typically include non-refundable license fees, funding of research and development, payments based upon achievement of certain milestones and royalties on net product sales. Non-refundable license fees are recognized as contract and license fee revenue when AVANT has a contractual right to receive such payment, provided a contractual arrangement exists, the contract price is fixed or determinable, the collection of the resulting receivable is reasonably assured and AVANT has no further performance obligations under the license agreement. When we have performance obligations under the terms of a contact, non-refundable fees are recognized as revenue as we complete our obligations. Where AVANT's level of effort is relatively constant over the performance period, the revenue is recognized on a straight-line basis. The determination of the performance period involves judgment on management's part. Funding of research and development is recognized over the term of the applicable contract as costs are incurred related to that contract. Revenues from milestone payments related to arrangements under which we have no continuing performance obligations are recognized upon achievement of the related milestone. Revenues from milestone payments related to arrangements under which we have continuing performance obligations are recognized as revenue upon achievement of the milestone only if all of the following conditions are met: the milestone payments are non-refundable; achievement of the milestone was not reasonably assured at the inception of the arrangement; substantive effort is involved in achieving the milestone; and, the amount of the milestone is reasonable in relation to the effort expended or the risk associated with achievement of the milestone. If any of these conditions are not met, the milestone payments are deferred and recognized as revenue over the term of the arrangement as AVANT completes its performance obligations. Option fees are recognized over the related option period. Royalty revenue consists of payments received from licensees for a portion of sales proceeds from products that utilize AVANT's licensed technologies and would be recognized when the amount of and basis for such royalty payments are reported to us in accurate and appropriate form and in accordance with the related license agreement. Payments received in advance of activities being performed are recorded as deferred revenue. Any significant changes in our estimates or assumptions could impact our revenue recognition. Revenues from product sales are recorded when the product is

shipped providing no significant post-delivery obligations remain and collection of the related receivable is reasonably assured.

(F) Research and Development Costs

Research and development costs, including internal and contract research costs, are expensed as incurred.

(G) Inventories

Inventories are stated at the lower of cost or market. Inventories consist of finished products at December 31, 2001. Cost is determined using the first-in, first-out (FIFO) method.

(H) Property and Equipment

Property and equipment is stated at cost and depreciated over the estimated useful lives of the related assets using the straight-line method. Laboratory equipment and office furniture and equipment are depreciated over a five year period and computer equipment is depreciated over a three year period. Leasehold improvements are amortized over the shorter of the estimated useful life or the noncancelable term of the related lease.

(I) Licenses, Patents and Trademarks

Included in other assets are costs associated with purchased licenses and some costs associated with patents and trademarks which are capitalized and amortized over the shorter of the estimated useful lives or ten years using the straight-line method. We evaluate the recoverability of these assets when facts and circumstances suggest the asset could be impaired in accordance with Statement of Financial Accounting Standards No. 121 ("SFAS 121"), "Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to be Disposed Of".

(J) Loss Per Share

We compute and report earnings per share in accordance with the provisions of SFAS No. 128, "Earnings Per Share". The computations of basic and diluted loss per common share are based upon the weighted average number of common shares outstanding and potentially dilutive securities. Potentially dilutive securities include stock options and warrants. Options and warrants to purchase 4,963,092, 5,113,466 and 5,109,162 shares of common stock were not included in the 2002, 2001 and 2000 computation of diluted net loss per share, respectively, because inclusion of such shares would have an anti-dilutive effect on net loss per share.

(K) Comprehensive Income

Comprehensive income is comprised of two components, net income and other comprehensive income. For the years ended December 31, 2002, 2001 and 2000, the Company had no other comprehensive income.

(L) Stock-Based Compensation

AVANT's employee stock compensation plans are accounted for in accordance with Accounting Principles Board Opinion No. 25, "Accounting for Stock Issued to Employees" and related interpretations, including FASB Interpretation No. 44, "Accounting for Certain Transactions Involving Stock Compensation." We adopted the disclosure requirements of Statement of Financial Accounting Standards No. 123 ("SFAS 123"), "Accounting for Stock-Based Compensation". All stock based awards to non-employees are accounted for at their fair value as prescribed by SFAS 123 and Emerging Issues Task Force (EITF) 96-18, "Accounting for Equity Instruments that are issued to other than Employees for Acquiring, or in conjunction with Selling, Goods and Services" (see Note 7). Accordingly, no compensation cost has been recognized under SFAS 123 for the Company's employee stock option plan. Had compensation cost for the awards under the plan been determined based on the grant date fair values, consistent with the method required under SFAS 123, the Company's net loss and net loss per share would have been reduced to the pro forma amounts indicated below:

	2002	2001	2000
Net Loss:			
As reported	$ 13,829,200	$ 22,753,000	$ 21,975,000
Deduct: Stock-based employee compensation expense determined under fair value based method for all awards, net of related tax effects	917,300	1,026,800	950,300
Pro forma	$ 14,746,500	$ 23,779,800	$ 22,925,300
Basic and Diluted Net Loss Per Share:			
As reported	$ 0.23	$ 0.39	$ 0.42
Pro forma	0.24	0.41	0.44

(M) Use of Estimates

The preparation of the financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect reported amounts and disclosures. Actual results could differ from those estimates.

(N) Segments

Management uses consolidated financial information in determining how to allocate resources and assess performance. For this reason, AVANT has determined that it is engaged in one industry segment. Substantially all of our revenue since inception has been generated in the United States and all of our assets are in the United States.

(O) Recent Pronouncements

In July 2002, the FASB issued SFAS 146, *Accounting for Costs Associated with Exit or Disposal Activities*. SFAS 146 requires that a liability for a cost associated with an exit or disposal activity be recognized at its fair market value when the liability is incurred, rather than at the date of an entity's commitment to an exit plan. The provisions of SFAS 146 are effective for exit or disposal activities that

are initiated after December 31, 2002. The adoption of SFAS 146 has not had a material effect on the Company's financial statements.

In December 2002, the Financial Accounting Standards Board issued Statement of Financial Accounting Standards No. 148, "Accounting for Stock-Based Compensation—Transition and Disclosure" ("SFAS 148"). SFAS 148 provides alternative methods of transition for a voluntary change to the fair value method of accounting for stock-based employee compensation as originally provided by SFAS No. 123 "Accounting for Stock-Based Compensation". Additionally, SFAS 148 amends the disclosure requirements of SFAS 123 to require prominent disclosure in both the annual and interim financial statements about the method of accounting for stock-based compensation and the effect of the method used on reported results. The transitional requirements of SFAS 148 will be effective for all financial statements for fiscal years ending after December 15, 2002. The disclosure requirements shall be effective for financial reports containing condensed financial statements for interim periods beginning after December 15, 2002. We expect to adopt the disclosure portion of this statement for the quarter ending March 31, 2003. The application of this standard will have no impact on our consolidated financial position or results of operations.

In November 2002, the FASB issued FASB Interpretation No. 45, Guarantor's Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others, an interpretation of FASB Statements No. 5, 57, and 107 and rescission of FASB Interpretation No. 34 ("FIN 45") requires that a guarantor recognize, at the inception of a guarantee, a liability for the fair value of the obligation undertaken by issuing the guarantee. The Interpretation also requires additional disclosures to be made by a guarantor in its interim and annual financial statements about its obligations under certain guarantees it has issued. The accounting requirements for the initial recognition of guarantees are applicable on a prospective basis for guarantees issued or modified after December 31, 2002. The disclosure requirements are effective for all guarantees outstanding, regardless of when they were issued or modified, during the first quarter of fiscal 2003. The adoption of FIN No. 45 did not have a material effect on our consolidated financial statements. The following is a summary of our agreements that we have determined are within the scope of FIN No. 45.

As permitted under Delaware law, our Third Restated Certificate of Incorporation provides that AVANT will indemnify its officers and directors for certain claims asserted against them in connection with their service as an officer or director of AVANT. The maximum potential amount of future payments that we could be required to make under these indemnification provisions is unlimited. However, we have purchased certain Directors' and Officers' insurance policies that reduce its monetary exposure and enable it to recover a portion of any future amounts paid. As a result of our insurance coverage, we believe the estimated fair value of these indemnification arrangements is minimal.

In January 2003, the FASB issued FASB Interpretation No. 46, *Consolidation of Variable Interest Entities, an Interpretation of ARB No. 51* (FIN 46). The primary objective of the Interpretation is to provide guidance on the identification of, and financial reporting for, entities over which control is achieved through means other than voting rights; such entities are known as variable-interest entities (VIEs). Although the FASB's initial focus was on special-purpose entities (SPEs), the final guidance applies to a wide range of entities. FIN 46 applies to new entities that are created after the effective date, as well as applies to existing entities. The FIN is effective to preexisting entities as of the beginning of the first interim period beginning after June 15, 2003, and to any new entities beginning

February 1, 2003. Once it goes into effect, FIN 46 will be the guidance that determines (1) whether consolidation is required under the "controlling financial interest" model of Accounting Research Bulletin No. 51 (ARB 51), Consolidated Financial Statements, or (b) other existing authoritative guidance, or, alternatively, (2) whether the variable-interest model under FIN 46 should be used to account for existing and new entities. The Company is evaluating the impact of FIN 46 on its financial statements.

2. SHORT-TERM INVESTMENTS

AVANT invests in high quality, short-term investments which are considered highly liquid and are available to support current operations. We also invest in high quality, debt securities which are classified as held-to-maturity. At December 31, 2002 and 2001, our investments that met the definition of cash equivalents were recorded at cost, which approximated fair value.

3. PROPERTY, EQUIPMENT AND LEASES

Property and equipment includes the following:

	December 31, 2002	December 31, 2001
Laboratory Equipment	$ 2,323,800	$ 2,235,200
Office Furniture and Equipment	1,577,500	1,504,700
Leasehold Improvements	1,612,600	1,206,300
Total Property and Equipment	5,513,900	4,946,200
Less Accumulated Depreciation	(4,394,400)	(3,958,400)
	$ 1,119,500	$ 987,800

During 2001, we wrote off approximately $504,800 of fully depreciated equipment no longer used in our operations. Depreciation expense related to equipment and leasehold improvements was approximately $436,000, $587,974 and $524,200 for the years ended December 31, 2002, 2001 and 2000, respectively.

In August 2001, we extended our lease of approximately 54,300 sq. ft. of laboratory and office space in Needham, Massachusetts through April 30, 2007. We are leasing approximately 12,400 sq. ft. of laboratory and office space in St. Louis, Missouri through March 31, 2004.

Obligations for base rent under these and other noncancelable operating leases as of December 31, 2002 are approximately as follows:

Year ending December 31, 2003	$ 2,325,200
2004	2,204,100
2005	2,159,200
2006	2,136,300
2007 and thereafter	709,700
Total minimum lease payments	$ 9,534,500

Our total rent for all operating leases (including rent expense net of sublease income) was approximately $1,905,300, $1,343,800, and $1,159,300 for the years ended December 31, 2002, 2001 and 2000, respectively.

4. GOODWILL, INTANGIBLE AND OTHER ASSETS

In June 2001, the Financial Accounting Standards Board issued SFAS 142, "Goodwill and Other Intangible Assets". Under SFAS 142, goodwill and intangible assets with indefinite lives are no longer amortized but are reviewed at least annually for impairment. The amortization provisions of SFAS 142 apply to goodwill and intangible assets acquired after June 30, 2001. With respect to goodwill and intangible assets acquired prior to July 1, 2001, AVANT was required to adopt SFAS 142 and cease amortization of goodwill effective January 1, 2002.

Goodwill: We adopted SFAS 142 in January 2002. Prior to the adoption, the carrying amount of goodwill was approximately $1,036,300. In accordance with the provisions of SFAS 142, we reclassified our assembled workforce intangible assets of $277,800 to goodwill. AVANT has concluded that it currently has one reporting unit and has assigned the entire balance of goodwill to this reporting unit for purposes of performing a transitional impairment test as of January 1, 2002 and an annual impairment test as of July 1, 2002. The fair value of the reporting unit was determined using AVANT's market capitalization as of January 2, 2002 and July 1, 2002, adjusted for a control premium. The fair value on January 1, 2002 and July 1, 2002 exceeded the net assets of the reporting unit, including goodwill. Accordingly, we concluded that no impairment existed as of these dates.

Adjusted Net Loss: The following table presents the impact SFAS 142 would have had on our net loss and net loss per share had the standard been in effect for the year ended December 31, 2001 and 2000:

	The Year Ended December 31, 2001		
	As Reported	Goodwill Amortization Adjustment	As Adjusted

Net Loss	$ (22,753,000)	$ (795,100)	$ (21,957,900)
Net Loss per Common Share	$ (0.39)	$ (0.01)	$ (0.38)

	The Year Ended December 31, 2000		
	As Reported	Goodwill Amortization Adjustment	As Adjusted
Net Loss	$ (21,975,000)	$ (66,200)	$ (21,908,800)
Net Loss per Common Share	$ (0.42)	$ (0.001)	$ (0.42)

Intangible and Other Assets: Intangible and other assets include the following:

	Estimated Lives	December 31, 2002	December 31, 2001
Capitalized Patent Costs	10 years	$ 2,743,600	$ 2,470,700
Accumulated Amortization		(1,568,300)	(1,177,300)
Capitalized Patent Costs, Net		1,175,300	1,293,400
Acquired Intangible Assets:			
Collaborative Relationships	5 years	1,090,000	1,090,000
Core Technology	10 years	1,786,900	1,786,900
Developed Technology	7 years	3,263,100	3,263,100
Strategic Partner Agreement	17 years	2,563,900	2,563,900
Accumulated Amortization		(2,746,500)	(1,951,400)
Acquired Intangible Assets, Net		5,957,400	6,752,500
Other Non Current Assets		84,700	71,300
		$ 7,217,400	$ 8,117,200

In accordance with SFAS 121, we evaluated and subsequently wrote off approximately $22,400 and $69,600 in 2001, and 2000, respectively, of capitalized patent costs relating to certain abandoned patent applications in our complement and our SMIR programs. These write offs were included in operating expense as general and administrative expense.

Amortization expense for the years ended December 31, 2002, 2001 and 2000 relating to the capitalized costs of purchased licenses, patents and trademarks was approximately $391,000, $293,455 and $168,600, respectively.

All of our intangible assets are amortized over their useful lives. Total amortization expense for intangible assets for the years ended December 31, 2002, 2001 and 2000 was approximately $795,100, $795,100 and $66,200, respectively.

The estimated future amortization expense of intangible assets as of December 31, 2002 and the five succeeding years is as follows:

Year ending December 31,	Estimated Amortization Expense
2003	$ 795,100
2004	795,100
2005	795,100
2006	795,100
2007	760,300

5. ACCRUED EXPENSES

Accrued expenses include the following:

	December 31, 2002	December 31, 2001
Accrued License Fees	$ 400,000	$ 300,000
Accrued Payroll and Employee Benefits	91,100	317,800
Accrued Clinical Trials	232,500	1,732,100
Accrued Professional Fees	115,000	122,400

Other Accrued Expenses	1,260,300	260,300
	$ 2,098,900	$ 2,732,600

6. INCOME TAXES

	Year Ended December 31,		
	2002	2001	2000
Income tax benefit (provision):			
Federal	$ 5,441,500	$ 13,616,000	$ 4,954,600
State	940,600	1,305,000	(572,000)
	6,382,100	14,921,000	4,382,600
Deferred tax assets valuation allowance	(6,382,100)	(14,921,000)	(4,382,600)
	$ —	$ —	$ —

Deferred tax assets are comprised of the following:

	December 31, 2002	December 31, 2001
Net Operating Loss Carryforwards	$ 65,455,000	$ 59,438,000
Tax Credit Carryforwards	7,572,000	6,232,000
Other	2,444,000	3,709,000
Gross Deferred Tax Assets	75,471,000	69,379,000
Deferred Tax Assets Valuation Allowance	(75,471,000)	(69,379,000)
	$ —	$ —

Reconciliation between the amount of reported income tax expenses and the amount computed using the U.S. Statutory rate of 35% follows:

	2002	2001	2000
Loss at Statutory Rates	$ (4,701,900)	$ (7,736,000)	$ (7,471,500)
Research and Development Credits	(745,300)	(585,600)	(500,500)
State tax provision (benefit), net of federal tax liabilities	(1,508,300)	(1,691,600)	572,000
Other	5,700	386,900	(393,600)
Expiration of State NOLS	567,700	387,000	339,000
In Process R&D	—	—	3,072,000
Benefit of losses and credits not recognized, increase in valuation allowance	6,382,100	9,239,300	4,382,600
	$ —	$ —	$ —

AVANT has provided a full valuation allowance for deferred tax assets as management has concluded that it is more likely than not that we will not recognize any benefits from our net deferred tax asset. The timing and amount of future earnings will depend on numerous factors, including our future profitability. We will assess the need for a valuation allowance as of each balance sheet date based on all available evidence.

At December 31, 2002, we had U.S. net operating loss carryforwards of $175,995,000, U.S. capital loss carryforwards of $1,852,000, and U.S. tax credits of $5,952,000 which expire at various dates through 2022. Under the Tax Reform Act of 1986, substantial changes in our ownership could result in an annual limitation on the amount of net operating loss carryforwards, research and development tax credits, and capital loss carryforwards which could be utilized. Approximately $4,644,000 of the net operating loss carryforwards relate to the exercise of non-qualified stock options and disqualifying dispositions of incentive stock options, the tax benefit from which, if realized, will be credited to additional paid in capital.

7. STOCKHOLDERS' EQUITY

(A) Public and Private Stock Offerings

AVANT filed a shelf registration statement in July 2001 with the Securities and Exchange Commission to register 10 million shares of common stock and warrants to purchase 1 million shares of common stock. On October 17, 2001, we completed a direct equity placement of approximately 3,057,900 shares of

common stock off the shelf registration which generated net proceeds totaling approximately $13,575,200 after deducting all associated expenses of approximately $424,800.

In July 2000, we completed a private placement of 4,650,900 newly issued shares of common stock which generated net proceeds totaling approximately $34,481,000 after deducting all associated expenses of approximately $2,019,000.

(B) Preferred Stock

At December 31, 2002 and 2001, AVANT had authorized preferred stock comprised of 1,163,102 shares of convertible Class B and 3,000,000 shares of convertible Class C of which 350,000 shares has been designated as Class C-1 Junior Participating Cumulative, the terms of which are to be determined by our Board of Directors. There was no preferred stock outstanding at December 31, 2002 and 2001.

(C) Warrants

AVANT has issued warrants to purchase common stock in connection with the acquisition of VRI on August 21, 1998. The warrants are exercisable at $6.00 per share and expire August 22, 2003. In connection with the acquisition of VRI, we also assumed the obligations of VRI with respect to each outstanding warrant to purchase VRI common stock (a "VRI Warrant"). Each VRI Warrant assumed by AVANT, which will continue to have, and be subject to, the terms and conditions of the applicable warrant agreements and warrant certificates, has been adjusted consistent with the ratio at which our common stock was issued in exchange for VRI common stock in the acquisition.

Warrants outstanding at December 31, 2002 are as follows:

Security	Number of Shares	Exercise Price Per Share	Expiration Date
Common stock	34,921	$ .62	February 9, 2004
Common stock	67,617	1.26	December 14, 2005
Common stock	1,775,644	6.00	August 22, 2003

(D) Stock Options and Employee Stock Purchase Plans

Stock Options

On May 6, 1999, AVANT's 1999 Stock Option and Incentive Plan (the "1999 Plan") was adopted. The 1999 Plan replaced the Amended and Restated 1991 Stock Compensation Plan, which was an amendment and restatement of our 1985 Incentive Option Plan. The 1999 Plan permits the granting of incentive stock options (intended to qualify as such under Section 422A of the Internal Revenue Code of 1986, as amended), non-qualified stock options, stock appreciation rights, performance share units, restricted stock and other awards of restricted stock in lieu of cash bonuses to employees, consultants and outside directors.

The 1999 Plan, as amended in 2002, allows for a maximum of 3,500,000 shares of common stock to be issued prior to May 6, 2009. The Board of Directors determines the term of each option, option price, number of shares for which each option is granted and the rate at which each option vests. The

term of each option cannot exceed ten years (five years for options granted to holders of more than 10% of the voting stock of AVANT) and the exercise price of stock options cannot be less than the fair market value of the common stock at the date of grant (110% of fair market value for options granted to holders of more than 10% of the voting stock of AVANT).

In connection with the acquisition of Megan, we assumed the obligations of Megan under Megan's Stock Option Plan (the "Megan Plan") and each outstanding option to purchase Megan common stock (a "Megan Stock Option") granted under the Megan Plan. Each Megan Stock Option assumed by AVANT is deemed to constitute an option to acquire, on the same terms and conditions as were applicable under the Megan Plan, shares of AVANT's common stock which has been adjusted consistent with the ratio at which our common stock was issued in exchange for Megan's common stock in the acquisition. As of the date the acquisition was completed we assumed options to acquire 31,910 shares of our common stock at a weighted average exercise price of $4.39. The Megan Stock Options are fully vested as of December 1, 2000 and the term of each option cannot exceed ten years from the date of grant.

Employee Stock Purchase Plan

The 1994 Employee Stock Purchase Plan (the "1994 Plan") was adopted on June 30, 1994. All full time employees of AVANT are eligible to participate in the 1994 Plan. A total of 150,000 shares of common stock are reserved for issuance under this plan. Under the 1994 Plan, each participating employee may contribute up to 15% of his or her compensation to purchase up to 500 shares of common stock per year in any offering and may withdraw from the offering at any time before stock is purchased. Participation terminates automatically upon termination of employment. The purchase price per share of common stock in an offering is 85% of the lower of its fair market value at the beginning of the offering period or the applicable exercise date.

A summary of stock option activity for the years ended December 31, 2002, 2001 and 2000 is as follows:

	2002		2001		2000	
	Shares	Weighted Average Exercise Price Per Share	Shares	Weighted Average Exercise Price Per Share	Shares	Weighted Average Exercise Price Per Share
Outstanding at January 1,	3,235,284	$ 2.97	3,209,289	$ 2.96	3,138,559	$ 2.34
Granted	60,000	1.30	499,000	3.58	1,060,350	4.66
Assumed in acquisition	—	—	—	—	31,910	4.39

Exercised	—	—	(228,859)	2.02	(738,642)	2.86
Canceled	(210,374)	4.58	(244,146)	4.96	(282,888)	2.80
Outstanding at December 31,	3,084,910	$ 2.83	3,235,284	$ 2.97	3,209,289	$ 2.96
At December 31,						
Options exercisable	2,342,663		1,923,532		1,667,566	
Available for grant	2,218,239		572,713		934,674	
Weighted average fair value of options granted during year		$ 1.20		$ 2.26		$ 2.49

The following tables summarize information about the stock options outstanding at December 31, 2002:

	Options Outstanding		
Range of Exercise Prices	Number Outstanding	Weighted Average Remaining Contractual Life	Weighted Average Exercise Price per Share
$0.30—1.31	649,319	4.14	$ 0.9580
1.41—2.28	853,202	5.63	1.9114
2.41—2.94	655,597	5.04	2.5354
2.99—6.13	636,670	6.04	3.8925
6.17—14.69	290,122	7.14	8.0869
$0.30—14.69	3,084,910	5.42	$ 2.8330

	Options Exercisable	
Range of Exercise Prices	Number Exercisable	Weighted Average Exercise Price per Share
$0.30—1.31	530,069	$ 0.8887
1.41—2.28	714,515	1.8585
2.41—2.94	501,099	2.5660
2.99—6.13	411,086	4.3046
6.17—14.69	185,894	7.8510
$0.30—14.69	2,342,663	$ 2.6952

Fair Value Disclosures

Had compensation costs for AVANT's stock compensation plans been determined based on the fair value at the grant dates, consistent with SFAS 123, our net loss, and net loss per share for the years ending December 31, 2002, 2001 and 2000 would be as follows:

	2002	2001	2000
Net Loss:			
As reported	$ 13,829,200	$ 22,753,000	$ 21,975,000
Pro forma	14,746,500	23,779,800	22,925,300
Basic and Diluted Net Loss Per Share:			
As reported	$ 0.23	$ 0.39	$ 0.42
Pro forma	0.24	0.41	0.44

The fair value of the option grant is estimated on the date of grant using the Black-Scholes option pricing model with the following assumptions:

	2002	2001	2000
Expected dividend yield	0%	0%	0%
Expected stock price volatility	109%	109%	109%
Risk-free interest rate	1.0% — 4.6%	3.3% — 4.7%	5.0% — 6.5%
Expected option term	2.5 Years	2.5 Years	2.5 Years

Because the determination of the fair value of all options granted includes an expected volatility factor in addition to the factors detailed in the table above, and because additional option grants are expected to be made each year, the above pro forma disclosures are not representative of pro forma effects of reported net income for future years.

(E) Shareholder Rights Plan

On November 10, 1994, AVANT's Board of Directors declared a dividend of one preferred share purchase right for each share of common stock outstanding. Each right entitles the holder to purchase from AVANT one-one thousandth of a share of Series C-1 Junior Participating Cumulative Preferred Stock (a "Unit"), par value $0.01 at a price of $16.00 per one-one thousandth of a share, subject to specified adjustments. The Units are exercisable only if a person or a group acquires 15% or more of the outstanding common stock of AVANT or commences a tender offer which would result in the ownership of 15% or more of our outstanding common stock. Once a Unit becomes exercisable, the plan allows our shareholders to purchase common stock at a substantial discount. Unless earlier redeemed, the Units expire on November 10, 2004. AVANT is entitled to redeem the Units at $0.01 per Unit subject to adjustment for any stock split, stock dividend or similar transaction.

As of December 31, 2002 and 2001, we have authorized the issuance of 350,000 shares of Series C-1 Junior Participating Cumulative Preferred Stock for use in connection with the shareholder rights plan.

(F) Acquisition of Megan Health, Inc.

AVANT issued 1,841,200 shares of its common stock and fully vested options to purchase 31,900 shares of its common stock on December 1, 2000, in exchange for all of the outstanding capital stock and options of Megan, respectively (see Note 13).

(G) Share Repurchase Plan

On August 16, 2002, the Company announced that its Board of Directors had authorized the repurchase of up to 2 million shares of the Company's common stock. The repurchased stock provides the Company with treasury shares for general corporate purposes, such as stock to be issued under employee stock option and stock purchase plans. The Company purchased 132,600 shares through December 31, 2002 at a cost of $136,400. Approximately 1,867,400 shares remain authorized for repurchase under this program at December 31, 2002.

8. RESEARCH AND LICENSING AGREEMENTS

AVANT has entered into licensing agreements with several universities and research organizations. Under the terms of these agreements, we have received licenses or options to license technology, specified patents or patent applications. We have made required payments of nonrefundable license fees and royalties, which amounted to approximately $476,000, $413,500 and $307,500 for the years ended December 31, 2002, 2001 and 2000, respectively.

9. PRODUCT DEVELOPMENT AND LICENSING AGREEMENTS

Our revenue from product development and licensing agreements was received pursuant to contracts with different organizations. Total revenue recognized by us in connection with these contracts for the years ended December 31, 2002, 2001 and 2000 were approximately $6,412,400, $2,999,800 and $729,800, respectively. A summary of these contracts follows:

(A) Novartis Pharma AG

In 1997, we entered into an option agreement with Novartis Pharma AG ("Novartis"), a worldwide pharmaceutical company headquartered in Basel, Switzerland, relating to the development of TP10 for use in xenotransplantation (animal organs into humans) and allotransplantation (human to human). Under the agreement, we received annual option fees and supplies of TP10 for clinical trials in return for granting Novartis a two-year option to license TP10 with exclusive worldwide (except Japan) marketing rights. In July 1999, Novartis exercised its option to license TP10 for use in the field of transplantation. The decision to license TP10 resulted in a $6 million equity investment and license fee payment by Novartis which was received by AVANT in January 2000. As of September 6, 2002, Novartis and AVANT agreed to terminate the TP10 agreement pursuant to which Novartis paid a net termination fee of $1.9 million and returned to AVANT all pre-clinical and clinical TP10 material. The termination resulted in a non-recurring recognition of the remaining $2,461,700 in deferred revenue related to the Novartis agreement.

(B) GlaxoSmithKline plc

During 1997, AVANT entered into an agreement with GlaxoSmithKline plc ("Glaxo") to collaborate on the development and commercialization of our oral rotavirus vaccine. Under the terms of the agreement, Glaxo received an exclusive worldwide license to commercialize AVANT's rotavirus vaccine. We were responsible for continuing the Phase II clinical efficacy study of the rotavirus vaccine, which was completed in August 1998. Glaxo made an initial license payment of $250,000 in 1997 upon execution of the agreement and, in June 1999, we received a milestone payment of $500,000 from Glaxo for the successful completion of the Phase II clinical efficacy study and the establishment of a commercially viable process for manufacture of the vaccine. Glaxo has assumed responsibility for all subsequent clinical trials and all other development activities. Glaxo has agreed to make further payments, which have an approximate aggregate value totaling up to $8.5 million, upon the achievement of specified milestones. In addition, we will be entitled to royalties based on net sales of the rotavirus vaccine.

(C) Aventis Pasteur

In 1994, AVANT entered into a license agreement with Aventis Pasteur ("Aventis") which granted Aventis the exclusive right to make, use and sell Adjumer®-formulated vaccines for prevention of influenza, Lyme disease and diseases caused by meningococcus and the co-exclusive right (exclusive, except for the right of AVANT or one other person licensed by AVANT) to make, use and sell Adjumer®-formulated vaccines directed against five other pathogens, including pneumococcus and

RSV. In connection with formation of Parallel Solutions, Inc. in October 2001, AVANT assigned all of its rights and obligations under the Aventis license agreements to Parallel (see Note 10).

(D) Pfizer Inc

In connection with our acquisition of Megan, we entered into a licensing agreement with Pfizer Inc, Animal Health Division ("Pfizer"), whereby Pfizer has licensed Megan's technology for the development of animal health and food safety vaccines. Upon execution of the agreement, Pfizer made an initial license payment of $2.5 million together with a $3 million equity investment. Under the agreement, we may receive additional milestone payments based upon attainment of specified milestones. We have received research and development funding from Pfizer through November 2002 and may receive royalty payments on eventual product sales.

(E) DynPort Vaccine Company LLC

In October 2001, AVANT granted DynPort Vaccine Company LLC (DVC) a license for exclusive rights to use certain components of AVANT's vaccine technology. Financial terms of the agreement with DVC include license fees, milestone payments and royalty payments on eventual product sales. DVC, a privately-held company, is chartered with providing an integrated approach for the advanced development of specific vaccines and other products to protect against the threat of biological warfare agents. DVC has a 10-year contract with the U.S. Department of Defense for the development of vaccines against certain acute infectious and contagious diseases, initiated under the 1997 Joint Vaccine Acquisition Program.

10. FORMATION OF PARALLEL SOLUTIONS, INC.

During October 2001, AVANT contributed its polyphosphazene polymer adjuvant business (the "PCPP business"), including Adjumer® and Micromer®, into a newly formed, privately held company, Parallel Solutions, Inc. ("Parallel"), in exchange for a non-controlling minority ownership position in Parallel. In connection with this transaction, AVANT has assigned all of its rights and obligations under the Aventis Pasteur license agreements to Parallel. The assets contributed to Parallel, primarily laboratory equipment, had a carrying value of $67,300. AVANT has no future funding commitments or other obligations to Parallel and has neither a role in the management of Parallel nor representation on the Parallel board of directors. At December 31, 2002, AVANT had a receivable of approximately $42,000 due from Parallel.

11. DEFERRED SAVINGS PLAN

Under section 401(k) of the Internal Revenue Code of 1986, as amended, the Board of Directors adopted, effective May 1990, a tax-qualified deferred compensation plan for employees of AVANT. Participants may make tax deferred contributions up to 15%, or $11,000 ($12,000 if participant is over the age of 50), of their total salary in 2002. AVANT may, at its discretion, make contributions to the plan each year matching up to 1% of the participant's total annual salary. AVANT contributions amounted to $38,200, $30,400 and $29,200 for the years ended December 31, 2002, 2001 and 2000, respectively.

12. FOREIGN SALES

Product sales were generated geographically as follows:

Net Product Sales for the Twelve Months Ended	USA	Asia	Total
December 31, 2002	$ 214,800	$ 77,600	$ 292,400
December 31, 2001	$ 331,600	$ 14,500	$ 346,100
December 31, 2000	33,400	—	33,400

13. ACQUISITION OF MEGAN HEALTH, INC.

On December 1, 2000, AVANT acquired all of the outstanding capital stock of Megan, a company engaged in the discovery and development of human and animal vaccines using patented gene modification technologies. We issued approximately 1,841,200 shares of AVANT's common stock in exchange for all of the outstanding capital stock of Megan, on the basis of 0.7635 shares of AVANT common stock for each share of Megan preferred stock and 0.0811 shares of AVANT common stock for each share of Megan common stock. The purchase price of $17,332,000 consisted of (i) the issuance of approximately 1,841,200 shares of AVANT common stock valued at $15,803,400, (ii) cash distributed to certain Megan shareholders in lieu of AVANT common stock totaling $236,700, (iii) the issuance of fully vested options to purchase AVANT common stock valued at $239,400 for all of the outstanding options to purchase Megan common stock assumed by us, and (iv) severance and transaction costs totaling $1,052,500. As of the date of the acquisition of Megan, AVANT had identified all significant actions to be taken to terminate certain Megan employees. The severance costs associated with this plan totaled approximately $164,200, were recognized upon consummation of the merger and are included in the $1,052,500 referenced above.

The acquisition has been accounted for as a purchase. Consequently, the operating results of Megan since December 2, 2000 have been included in our consolidated results of operations. The purchase price was allocated to the acquired assets and assumed liabilities, based upon their fair value at the date of acquisition, as follows:

Net tangible assets acquired	$ 550,400
Intangible assets acquired:	
Goodwill	155,400
Core Technology	1,786,900
Developed Technology	3,263,100
Strategic Partner Agreement	2,563,900
In-process Research and Development	9,012,300
Total	$ 17,332,000

The values assigned to the intangible assets acquired, including the IPR&D, were determined based on fair market value using a risk adjusted discounted cash flow approach. Megan was a development stage biotechnology enterprise and its resources were substantially devoted to research and development at the date of acquisition. Management is responsible for determining the fair value of the acquired IPR&D.

Each of Megan's three significant research and development projects in-process were valued through detailed analysis of product development data concerning the stage of development, time and resources needed to complete the project, expected income-generating ability and associated risks. The value of IPR&D was determined by estimating the costs to develop the purchased in-process technology into commercially viable products, estimating the net cash flows from such projects and

discounting the net cash flows back to their present values. The probability of success and discount rates used for each project take into account the uncertainty surrounding the successful development and commercialization of the purchased in-process technology. The resulting net cash flows for these projects were based on our best estimates of revenue, cost of sales, research and development costs, selling, general and administrative costs, and income taxes for each project, and the net cash flows reflect assumptions that would be used by market participants.

The significant assumptions underlying the valuations included potential revenues, costs of completion, the timing of product approvals and the selection of appropriate probability of success and discount rates. None of Megan's projects have reached technological feasibility nor do they have any alternative future use. Consequently, in accordance with generally accepted accounting principles, the amount allocated to IPR&D was charged as an expense in the AVANT consolidated financial statements for the year ended December 31, 2000. The remaining acquired intangible assets arising from the acquisition are being amortized on a straight line basis over their estimated lives which range from 5 to 17 years.

A discussion of the in-process research and development projects identified at the time of acquisition and assumptions used in the valuation analysis follows. The projected costs to complete the projects represent costs to be incurred by AVANT and do not include any costs to be expended by our collaborators. (i) *Megan®Egg vaccine*. Megan®Egg is derived from the same master seed as Megan®Vac 1, the poultry health and food safety vaccine presently marketed by Megan. This development program is required to gain the label clearance needed to make advertising claims about the effectiveness of Megan®Vac in eliminating Salmonella on eggs in mature laying chickens and breeder chickens. A 90% probability of success adjustment has been applied to the project to reflect its late stage of development and low technological risk. A discount rate of 18% was utilized in determining the IPR&D value of $3,340,700 which was assigned to the Megan®Egg project at the time of acquisition. USDA licensure is expected in 2003-2004. The estimated cost to complete the project and commercialize Megan®Egg is between $300,000-$500,000. (ii) *AntiPath™ vaccine*. AntiPath™is a *Salmonella typhimurium* strain containing both chromosomal and plasmid genes derived from pathogenic *E. coli*. AntiPath™ will be labeled for prevention of airsacculitis, perihepatitis, and pericarditis (and possibly cellulitis) caused by *E. coli* infection in poultry. Development work for safety and efficacy studies and licensing will be completed in 2002 and 2003. Additional work is required by AVANT prior to commercialization. USDA licensure is expected in 2003-2004. The estimated cost to complete the project and commercialize AntiPath™ is between $1,025,000-$1,500,000. An 85% probability of success adjustment has been applied to the project to reflect its stage of development and technological risk. A discount rate of 18% was utilized in determining the IPR&D value of $5,360,800 which was assigned to the AntiPath™ project at the time of acquisition. (iii) *Megan®Vac "Kentucky" vaccine*. Megan®Vac "Kentucky" is in the research stage and is focused on the broiler processing plant, where over 30% of the *Salmonella spp*. found on broiler carcasses are the *Salmonella kentucky* strain. Megan®Vac "Kentucky" is an important extension of the Megan®Vac line and is required to make significant inroads into the broiler market in those geographic areas where *Salmonella kentucky* is a problem. With current vaccine strains under development, USDA licensure is expected in 2004-2005. The estimated cost to complete the project and commercialize Megan®Vac "Kentucky" is between $400,000-$800,000. A 75% probability of success adjustment has been applied to the project to reflect its stage of development and technological risk. A discount rate of 18% was utilized in determining the IPR&D value of $310,800 which was assigned to the Megan®Vac "Kentucky" project at the time of acquisition.

As of December 31, 2002, the technological feasibility of the projects had not yet been reached and no significant departures from the assumptions included in the valuation analysis had occurred.

Substantial additional research and development will be required prior to reaching technological feasibility. In addition, each product needs to successfully complete a series of clinical trials and to receive USDA or other regulatory approval prior to commercialization. We are also dependent upon the activities of our collaborators in developing, manufacturing and marketing our products. There can be no assurance that these projects will ever reach feasibility or develop into products that can be marketed profitably, nor can there be assurance AVANT and our collaborators will be able to develop, manufacture and commercialize these products before our competitors. If these products are not successfully developed and do not become commercially viable, our financial condition and results of operations could be materially affected.

The following unaudited pro forma financial summary is presented as if the operations of AVANT and Megan were combined as of January 1, 2000. The unaudited pro forma combined results are not necessarily indicative of the actual results that would have occurred had the acquisition been consummated at that date, or of the future operations of the combined entities. The following pro forma financial summary does not include the charge for in-process research and development, which is a material non recurring charge.

Year Ended December 31,	2000
Revenue	$ 1,839,700
Net loss	(15,662,400)
Basic and diluted net loss per share	(0.29)

14. SELECTED QUARTERLY FINANCIAL DATA (Unaudited)

2002	Q1 2002	Q2 2002	Q3 2002	Q4 2002
Total revenue	$ 690,900	$ 642,800	$ 4,560,400	$ 810,800
Net loss	(4,913,600)	(5,164,300)	(276,200)	(3,475,100)
Basic and diluted net loss per common share	(0.08)	(0.09)	(0.01)	(0.06)

2001	Q1 2001	Q2 2001	Q3 2001	Q4 2001

Total revenue	$ 859,000	$ 825,800	$ 725,500	$ 935,700
Net loss	(4,013,300)	(5,660,300)	(6,224,000)	(6,855,400)
Basic and diluted net loss per common share	(0.07)	(0.10)	(0.11)	(0.11)

2000	Q1 2000	Q2 2000	Q3 2000	Q4 2000
Total revenue	$ 153,800	$ 153,900	$ 153,900	$ 301,600
Net loss	(2,123,400)	(2,723,900)	(3,633,600)	(13,494,100)
Basic and diluted net loss per common share	(0.04)	(0.05)	(0.08)	(0.25)

Item 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURES

None.

PART III

Item 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT

Information in response to this Item appears under the caption "Proposal 2—Election of Directors" and "Management" in the Registrant's definitive Proxy Statement for its Annual Meeting of Stockholders to be filed with the SEC pursuant to Regulation 14A, not later than 120 days after the close of the fiscal year, and is incorporated by reference.

Item 11. EXECUTIVE COMPENSATION

Information in response to this Item appears under the caption "Management" of the Registrant's definitive Proxy Statement for its Annual Meeting of Stockholders to be filed with the SEC pursuant to Regulation 14A, not later than 120 days after the close of the fiscal year, and is incorporated by reference.

Item 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

Equity Compensation Plan Information

The following table provides information as of December 31, 2002 regarding shares of common stock of the Company that may be issued under our existing equity compensation plans, including the Company's 1999 Stock Option and Incentive Plan (the "1999 Plan") and the Company's 1994 Employee Stock Purchase Plan (the "1994 Plan"). Footnote (4) to the table sets forth the total number of shares of common stock of the Company issuable upon the exercise of assumed options as of December 31, 2002, and of assumed options and warrants as of August 21, 1998, and the weighted average exercise price of these options and warrants.

	Equity Compensation Plan Information		
	Number of securities to be issued upon exercise of outstanding options, warrants and rights(1)	Weighted Average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plan (excluding securities referenced in column (a))
	(a)	(b)	(c)
Equity compensation plans approved by security holders[2]	4,345,159 [3,4]	$ 3.93	2,218,239 [5]

1 Does not include any Restricted Stock as such shares are already reflected in the Company's outstanding shares.

2 Consists of the 1999 Plan and the 1994 Plan.

3 Does not include purchase rights accruing under the 1994 Plan because the purchase price (and therefore the number of shares to be purchased) will not be determined until the end of the purchase period.

4 Does not include: (i) outstanding options to acquire 14,594 shares, at a weighted-average exercise price of $4.39 per share, that were assumed in connection with the 2000 merger of Megan with and into the Company, under Megan's Stock Option Plan—no future options may be granted under Megan's Stock Option Plan; (ii) outstanding options to acquire 500,801 shares, at a weighted-average exercise price of $2.34 per share, that were assumed in connection with the 1998 merger of VRI with and into the Company, under the VRI Stock Option Plan—no future options may be granted under the VRI Stock Option Plan; and (iii) outstanding warrants to acquire 102,538 shares, at a weighted-average exercise price of $1.04 per share, that were assumed in connection with the 1998 merger of VRI with and into the Company.

5 Includes shares available for future issuance under the 1994 Plan.

Additional information in response to this Item appears under the caption "Beneficial Ownership of Common Stock" of the Registrant's definitive Proxy Statement for its Annual Meeting of Stockholders to be filed with the SEC pursuant to Regulation 14A, not later than 120 days after the close of the fiscal year, and is incorporated by reference.

Item 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

Information in response to this Item appears under the caption "Proposal 2—Election of Directors" and "Management" of the Registrant's definitive Proxy Statement for its Annual Meeting of Stockholders to be filed with the SEC pursuant to Regulation 14A, not later than 120 days after the close of the fiscal year, and is incorporated by reference.

Item 14. CONTROLS AND PROCEDURES

(a) *Evaluation of disclosure controls and procedures.*

As required by new Rule 13a-15 under the Securities Exchange Act of 1934, within the 90 days prior to the date of this report, we carried out an evaluation under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures. In designing and evaluating our disclosure controls and procedures, we and our management recognize that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and our management necessarily was required to apply its judgment in evaluating and implementing possible controls and procedures. Based upon that evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that they believe that, as of the date of completion of the evaluation, our disclosure controls and procedures were reasonably effective to ensure that information required to be disclosed by us in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Securities and Exchange Commission's rules and forms. In connection with the new rules, we will continue to review and document our disclosure controls and procedures, including our internal controls and procedures for financial reporting, on an ongoing basis, and may from time to time make changes aimed at enhancing their effectiveness and to ensure that our systems evolve with our business.

(b) *Changes in internal controls.*

None.

PART IV

Item 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES, AND REPORTS ON FORM 8-K

(A) The following documents are filed as part of this Form 10-K:

(1) Financial Statements:

See "Index to Consolidated Financial Statements" at Item 8.

(2) Financial Statement Schedules:

Schedules are omitted since the required information is not applicable or is not present in amounts sufficient to require submission of the schedule, or because the information required is included in the Consolidated Financial Statements or Notes thereto.

(3) Exhibits:

No.	Description	Page No.
2.1	Agreement and Plan of Merger, dated as of November 20, 2000, by and among AVANT, AVANT Acquisition Corp., and Megan Health, Inc.	Incorporated by reference to Exhibit 2.1 of the Company's Current Report on Form 8-K filed December 12, 2000
2.2	First Amendment to Agreement and Plan of Merger, dated as of November 20, 2000, by and among AVANT, AVANT Acquisition Corp., and Megan Health, Inc.	Incorporated by reference to Exhibit 2.2 of the Company's Current Report on Form 8-K filed December 12, 2000
3.1	Third Restated Certificate of Incorporation of the Company	Incorporated by reference to Exhibit 3.1 of the Company's Registration Statement on Form S-4 (Reg. No. 333-59215), filed July 16, 1998
3.2	Certificate of Amendment of Third Restated Certificate of Incorporation of the Company	Incorporated by reference to Exhibit 3.1 of the Company's Registration Statement on Form S-4 (Reg. No. 333-59215), filed July 16, 1998
3.3	Certificate of Designation for Series C-1 Junior Participating Cumulative Preferred Stock	Incorporated by reference to Exhibit 3.1 of the Company's Registration Statement on Form S-4 (Reg. No. 333-59215), filed July 16, 1998
3.4	Second Certificate of Amendment of Third Restated	Incorporated by reference to Exhibit 3.2 of the

	Certificate of Incorporation of the Company	Company's Registration Statement on Form S-4 (Reg. No. 333-59215), filed July 16, 1998
3.5	Amended and Restated By-Laws of the Company as of November 10, 1994	Incorporated by reference to Exhibit 3.3 of the Company's Registration Statement on Form S-4 (Reg. No. 333-59215), filed July 16, 1998
3.6	Third Certificate of Amendment of Third Restated Certificate of Incorporation of the Company	Incorporated by reference to Exhibit 3.1 of the Company's Quarterly Report on Form 10-Q, filed May 10, 2002

4.1	Shareholder Rights Agreement dated November 10, 1994 between the Company and State Street Bank and Trust Company as Rights Agent	Incorporated by reference to Exhibit 4.1 of the Company's Annual Report on Form 10-K filed March 28, 2000
4.2	Amendment to Shareholder Rights Agreement between State Street Bank and Trust Company and AVANT Immunotherapeutics, Inc. dated as of December 17, 2001	Incorporated by reference to Exhibit 4.2 of the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001
10.1	AVANT Immunotherapeutics, Inc. 1994 Employee Stock Purchase Plan	Incorporated by reference to Exhibit 10.1 of the Company's Registration Statement on Form S-8 filed June 8, 1994
10.2	Megan Health, Inc. Stock Option Plan	Incorporated by reference to Exhibit 4.6 of the Company's Registration Statement on Form S-8 (Reg. No. 333-52796), filed December 27, 2000
10.3	AVANT Immunotherapeutics, Inc. 1999 Stock Option and Incentive Plan	Incorporated by reference to Exhibit A to the Company's Proxy Statement on Schedule 14A filed on April 1, 1999
10.4	Virus Research Institute, Inc. 1992 Equity Incentive Plan as amended and restated	Incorporated by reference to Exhibit 10.4 of the Company's Annual Report on Form 10-K filed March 28, 2000
10.5	Performance Plan of the Company	Incorporated by reference to Exhibit 10.5 of the Company's Annual Report on Form 10-K filed March 28, 2000
10.6	Form of Agreement relating to Change of Control	Incorporated by reference to Exhibit 10.6 of the Company's Annual Report on Form 10-K filed March 28, 2000
10.7	Amended and Restated Employment Agreement between the Company and Una S. Ryan, Ph.D. dated August 20, 1998	Incorporated by reference to Exhibit 10.8 of he Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1998
10.8	Commercial Lease Agreement of May 1, 1996 between the Company and Fourth Avenue Ventures Limited Partnership	Incorporated by reference to Exhibit 10.11 of the Company's quarterly report on Form 10-Q/A for the quarterly period ended June 30, 1996 (File No. 0-15006)
10.9	Extension of Lease Agreement of May 1, 1997 between the Company and DIV Needham 53 LLC (successor in interest to Fourth Avenue Ventures Limited Partnership) dated as of August 23, 2001	Incorporated by reference to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001
10.10	Option Agreement by and between the Company and Novartis Pharma AG dated as of October 31, 1997, portions of which are subject to a request for confidential treatment	Incorporated by reference to Exhibit 10.16 of the Company's Quarterly Report on Form 10-Q/A for the quarterly period ended September 30, 1997

10.11	Settlement Agreement between the Company and	Incorporated by reference to Exhibit 10.15 of the

	Forest City 38 Sidney Street, Inc.; Forest City Management, Inc.; and Forest City Enterprises, Inc.	Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1997
10.12	Agreement between Lonza Biologics plc and the Company dated as of April 19, 2000, portions of which are subject to confidential treatment	Incorporated by reference to Exhibit 10.11 of the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000
10.13	Stock Purchase Agreement dated December 1, 2000 by and between the Company and Pfizer Inc	Incorporated by reference to Exhibit 10.12 of the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000
10.14	License and Royalty Agreement by and between Pfizer Inc, the Company and Megan Health, Inc. dated as of December 1, 2000, portions of which are subject to confidential treatment	Incorporated by reference to Exhibit 10.13 of the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000
10.15	Amendment to License and Royalty Agreement by and between Pfizer Inc., the Company and Megan Health, Inc. dated as of December 1, 2000, portions of which are subject to confidential treatment	Incorporated by reference to Exhibit 10.14 of the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000
10.16	Collaborative Research and Development Agreement by and between Pfizer Inc. and Megan Health, Inc. dated as of December 1, 2000, portions of which are subject to confidential treatment	Incorporated by reference to Exhibit 10.15 of the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000
10.17	Exclusive License Agreement between AVANT Immunotherapeutics, Inc. and DynPort Vaccine Company, LLC dated as of October 10, 2001, portions of which are subject to a request for confidential treatment	Incorporated by reference to Exhibit 10.17 of the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001
10.18	First Amendment to AVANT Immunotherapeutics, Inc. 1999 Stock Option and Incentive Plan	Incorporated by reference to Exhibit 10.18 of the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001
10.19	First Amendment to Amended and Restated Employment Agreement between the Company and Una S. Ryan, Ph.D. dated as of December 23, 2002	Filed herewith
21.0	List of Subsidiaries	Incorporated by reference to Exhibit 21.0 of the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001
23.0	Consent of Independent Accountants	Filed herewith

(B) Reports on Form 8-K.

None.

SIGNATURES

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

AVANT IMMUNOTHERAPEUTICS, INC.

Date: March 13, 2003 by: /s/ UNA S. RYAN

Una S. Ryan
President and Chief Executive Officer

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

Signature	Title	Date
/s/ J. BARRIE WARD	Chairman	March 14, 2003
(J. Barrie Ward)		

/s/ UNA S. RYAN (Una S. Ryan)	President, Chief Executive Officer, and Director	March 13, 2003
/s/ AVERY W. CATLIN (Avery W. Catlin)	Senior Vice President, Chief Financial Officer and Treasurer	March 13, 2003
/s/ FREDERICK W. KYLE (Frederick W. Kyle)	Director	March 14, 2003
/s/ THOMAS R. OSTERMUELLER (Thomas R. Ostermueller)	Director	March 13, 2003
/s/ HARRY H. PENNER, JR. (Harry H. Penner, Jr.)	Director	March 14, 2003
/s/ PETER A. SEARS (Peter A. Sears)	Director	March 17, 2003
/s/ KAREN S. LIPTON (Karen S. Lipton)	Director	March 13, 2003

Certification

I, Una S. Ryan, certify that:

1. I have reviewed this annual report on Form 10-K of AVANT Immunotherapeutics, Inc.;

2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;

3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-14 and 15d-14) for the registrant and we have:

   a. designed such disclosure controls and procedures to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;

   b. evaluated the effectiveness of the registrant's disclosure controls and procedures as of a date within 90 days prior to the filing date of this annual report (the "Evaluation Date"); and

   c. presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures based on our evaluation as of the Evaluation Date;

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

   a. all significant deficiencies in the design or operation of internal controls which could adversely affect the registrant's ability to record, process, summarize and report financial data and have identified for the registrant's auditors any material weaknesses in internal controls; and

   b. any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal controls; and

6.

The registrant's other certifying officer and I have indicated in this annual report whether or not there were significant changes in internal controls or in other factors that could significantly affect internal controls subsequent to the date of our most recent evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

Date: March 25, 2003

/s/ UNA S. RYAN

Una S. Ryan
President and Chief Executive Officer

Certification

I, Avery W. Catlin, certify that:

1. I have reviewed this annual report on Form 10-K of AVANT Immunotherapeutics, Inc.;

2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;

3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-14 and 15d-14) for the registrant and we have:

   a. designed such disclosure controls and procedures to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;

   b. evaluated the effectiveness of the registrant's disclosure controls and procedures as of a date within 90 days prior to the filing date of this annual report (the "Evaluation Date"); and

   c. presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures based on our evaluation as of the Evaluation Date;

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

   a. all significant deficiencies in the design or operation of internal controls which could adversely affect the registrant's ability to record, process, summarize and report financial data and have identified for the registrant's auditors any material weaknesses in internal controls; and

   b. any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal controls; and

6. The registrant's other certifying officer and I have indicated in this annual report whether or not there were significant changes in internal controls or in other factors that could significantly affect internal controls subsequent to the date of our most recent evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

Date: March 25, 2003

/s/ AVERY W. CATLIN

Avery W. Catlin
Chief Financial Officer

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PART I
CURRENT PROGRAMS AND PARTNERSHIPS
PART II
Report of Independent Accountants
CONSOLIDATED BALANCE SHEET

Exhibit 10.19

FIRST AMENDMENT TO AMENDED AND RESTATED EMPLOYMENT AGREEMENT

THIS FIRST AMENDMENT TO AMENDED AND RESTATED EMPLOYMENT AGREEMENT ("Amendment") by and between AVANT Immunotherapeutics, Inc., a Delaware corporation (f/k/a "T Cell Sciences, Inc.," the "Company") and Una S. Ryan, Ph.D. (the "Executive"), is dated as of December 23, 2002.

WHEREAS, the Company and the Executive entered into an Employment Agreement as of May 28, 1996 (the "Original Agreement");

WHEREAS, the Company and the Executive entered into an Amended and Restated Employment Agreement as of August 20, 1998 (the "Employment Agreement"), which Employment Agreement amended, restated and superseded the Original Agreement; and

WHEREAS, the parties agree to amend certain provisions of the Employment Agreement in accordance with Paragraph 19 thereof.

NOW, THEREFORE, the Company and the Executive, each intending to be legally bound hereby, do mutually covenant and agree as follows:

1. Section 3 of the Employment Agreement is hereby amended by adding the following at the end thereof:

"If a Change in Control (as defined in Section 6(d) hereof) occurs during the original or extended Term of this Agreement, the Term of this Agreement shall continue in effect for a period of not less than one (1) year beyond the month in which the Change in Control occurs."

2. Section 6(c) of the Employment Agreement is hereby amended by deleting said Section in its entirety and substituting therefor the following:

"**c. Termination by the Company Without Cause.** If the Executive is terminated by the Company without Cause prior to a Change in Control (as defined in Section 6(d) hereof), then the Executive shall be entitled to receive a severance payment pursuant to Section 6(e) hereof. If the Executive is terminated by the Company without Cause on or after a Change in Control, then the Executive shall be entitled to receive a severance payment pursuant to Section 6(f) hereof. Notwithstanding the foregoing, if the Executive is terminated by the Company without Cause prior to a Change in Control, but a Change in Control occurs within one (1) year thereafter, the Executive shall be deemed terminated by the Company without Cause after a Change in Control and the severance benefits inuring to the Executive shall be recalculated and paid to the Executive as determined pursuant to Section 6(f) hereunder, offset by the amount of the severance benefits previously provided."

3. Section 6(e) of the Employment Agreement is hereby amended by deleting said Section in its entirety and substituting therefor the following:

"**e. Termination Benefits Prior to a Change in Control.** Unless otherwise specifically provided in this Agreement or otherwise required by law, all compensation and benefits payable to the Executive under this Agreement shall terminate on the date of termination of the Executive's employment under this Agreement. Notwithstanding the foregoing, in the event of termination of the Executive's employment with the Company pursuant to Section 6(c) above prior to a Change in Control, the Company shall provide to the Executive the following termination benefits:

(i) a lump sum amount equal to the Executive's annual Salary at the rate then in effect pursuant to Section 4(a);

(ii) continuation of group health plan benefits to the extent authorized by and consistent with 29 U.S.C. §1161 *et seq.* (commonly known as "COBRA"), with the cost of the regular

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premium for such benefits shared in the same relative proportion by the Company and the Executive as in effect on the date of termination; and

(iii) a mutually agreed upon press release announcing the termination of the Executive's employment and mutually agreed upon written reference from the Company for the Executive.

The health benefits set forth in (ii) above shall continue for twelve (12) months after the date of termination so long as the Executive otherwise remains eligible for continuation under COBRA. Nothing in this Section 6(e) shall be construed to affect the Executive's right to receive COBRA continuation entirely at the Executive's own cost to the extent that the Executive may continue to be entitled to COBRA continuation after the Executive's right to cost sharing under Section 6(e)(ii) ceases."

4. Section 6 of the Employment Agreement is hereby further amended by adding the following new subsection (f) immediately after subsection (e) thereof:

"**f. Termination Benefits On or After Change in Control.** In the event of termination of the Executive's employment with the Company pursuant to Section 6(c) or 6(d) above on or after a Change in Control, the Company shall pay to the Executive an aggregate amount equal to (a) three (3) times the "base amount" (as defined in Section 280G(b)(3) of the Internal Revenue Code of 1986, as amended (the "Code")) applicable to the Executive, less (b) One Dollar ($1.00), payable in one lump sum in cash on the date of such termination.

It is the intention of the Executive and of the Company that no payments by the Company to or for the benefit of the Executive under this Agreement and/or any other agreement or plan pursuant to which the Executive is entitled to receive payments or benefits shall be non-deductible to the Company by reason of the operation of Section 280G of the Code relating to parachute payments. Accordingly, and notwithstanding any other provision of this Agreement or any such agreement or plan, if by reason of the operation of said Section 280G, any such payments exceed the amount which can be deducted by the Company in the aggregate, such payments shall be reduced to the maximum amount which can be deducted by the Company. To the extent that payments exceeding such maximum deductible amount have been made to or for the benefit of the Executive, such excess payments shall be refunded to the Company with interest thereon at the applicable Federal Rate determined under Section 1274(d) of the Code, compounded annually, or at such other rate as may be required in order that no such payments shall be non-deductible to the Company by reason of the operation of said Section 280G. To the extent that there is more than one method of reducing the

payments to bring them within the limitations of said Section 280G, the Executive shall determine which method shall be followed, provided that if the Executive fails to make such determination within 45 days after the Company has sent her written notice of the need for such reduction, the Company may determine the method of such reduction in its sole discretion.

If any dispute between the Company and the Executive as to any of the amounts to be determined under this subsection (f), or the method of calculating such amounts, cannot be resolved by the Company and the Executive, either the Company or the Executive after giving three days' written notice to the other, may refer the dispute to a partner in the Boston office of a firm of independent certified public accountants selected jointly by the Company and the Executive. The determination of such partner as to the amount to be determined under this subsection (f) and the method of calculating such amounts shall be final and binding on both the Company and the Executive. The Company shall bear the costs of any such determination."

5. Section 6(f) of the Employment Agreement is hereby amended to be renumbered Section 6(g).

6. Section 6(g) of the Employment Agreement is hereby amended to be renumbered Section 6(h).

7. Except as so amended, the Employment Agreement in all other respects is hereby confirmed.

IN WITNESS WHEREOF, this Amendment has been executed as a sealed instrument by the Company, by its duly authorized officer, and by the Executive, as of the date first written herein above.

AVANT IMMUNOTHERAPEUTICS, INC.

By: /s/ THOMAS R. OSTERMUELLER

Its: Director—Compensation Committee Chairman

/s/ UNA S. RYAN

Executive

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Exhibit 23.0

CONSENT OF INDEPENDENT ACCOUNTANTS

We hereby consent to the incorporation by reference in the Registration Statements on Forms S-8, (File Nos. 333-52796, 333-34780, 33-80036, 33-80050 and 333-62017) and the Registration Statements on Forms S-3 (File Nos. 333-64704, 333-43204, 333-52736, 33-64021, 333-08607, 333-56755, 333-64761 and 333-89341), of AVANT Immunotherapeutics, Inc. (f/k/a TCell Sciences, Inc.) of our report dated February 19, 2003 relating to the financial statements of AVANT Immunotherapeutics, Inc. (f/k/a TCell Sciences, Inc) which appears in the Annual Report on Form 10-K for the year ended December 31, 2002.

PricewaterhouseCoopers LLP

Boston, Massachusetts
March 25, 2003

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CONSENT OF INDEPENDENT ACCOUNTANTS