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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, 2001

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

The aggregate market value of common stock held by non-affiliates as of March 11, 2002 was $112,503,570 (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 11, 2002 was: 60,458,397 shares.

Certain information contained in the registrant's proxy statement relating to its annual meeting of stockholders to be held on May 8, 2002 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: Statements contained in this report, including Part II, Item 5: Market for Registrant's Common Equity and Related Stockholder Matters, 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 the registrant. These factors include, but are not limited to: (i) the registrant's ability to successfully complete product research and development, including pre-clinical and clinical studies, and commercialization; (ii) the registrant's ability to obtain substantial additional funding; (iii) the registrant's ability to obtain required governmental approvals; (iv) the registrant's ability to attract manufacturing, sales, distribution and marketing partners and other strategic alliances; and (v) the registrant's ability to develop and commercialize its products before its competitors.

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 against viral and bacterial diseases, including single-dose oral vaccines aimed at protecting travelers from cholera, typhoid fever and other illnesses. In addition, we are conducting clinical studies of a proprietary vaccine candidate for cholesterol management. AVANT further leverages the value of its technology portfolio through corporate 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.

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. 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.

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., a Delaware corporation ("VRI"), 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.

One of the benefits of focusing on immunology is that this field of science spans a large spectrum of medical endeavors, with implications in widely diverse areas of clinical medicine and public health. Immunology plays a key role in the creation of new vaccines that prevent or treat disease. Thus, developing an understanding of how various components of the immune system function and interact has allowed AVANT to cultivate a variety of opportunities for product development.

Using our expertise in immunology, we are building business franchises in three major disease areas: travelers' vaccines, cholesterol management and anti 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 drugs 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
Travelers' Vaccines	CholeraGarde™ Vaccine	Cholera	—	Phase IIb
	Ty800 Vaccine	Typhoid fever	—	Phase I/II
	Shigella Vaccine	Dysentery	—	Pre-clinical
	ETEC Vaccine	Enterotoxigenic *E coli* infection	—	Pre-clinical
	Campylobacter Vaccine	*Campylobacter* infection	—	Pre-clinical
Immunotherapeutics	CETi-1 Vaccine	Atherosclerosis	—	Phase II
Anti Viral Vaccines	Rotarix™ Vaccine	Rotavirus infection	GlaxoSmithKline	Phase II
	d15-29 Herpes Vaccine	Herpes simplex virus 2 infection	—	Pre-clinical
	Therapore™	Viral infection-HIV - -Hepatitis	US Army —	Pre-clinical Pre-clinical
Other Licensed Vaccines	BioTerrorism Vaccines	Anthrax infection	DynPort Vaccine Company LLC	Pre-clinical
	Food Safety Vaccines	Bacterial contamination of food sources	Pfizer Inc	Pre-clinical

B. Strategy

AVANT'S strategy is to utilize our expertise to design and develop vaccine and therapeutic products 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:

Travelers' Vaccines: AVANT is developing a series of single-dose, genetically-attenuated, live bacterial vaccines to prevent travelers' diarrhea and dysentery. Frost & Sullivan, a leading market research firm, estimated in a 1999 report that the worldwide market for diarrheal vaccines, addressed to the travelers' market only, would reach more than one billion dollars in 2005. Many of these vaccines could also meet the healthcare requirements of less developed countries, where 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, developed 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. AVANT plans to conduct a small dose ranging program prior to initiating Phase III clinical trials with CholeraGarde™ during the second half of 2002.

Development of a safe, effective cholera vaccine is the first step in establishing AVANT's travelers' vaccine franchise. AVANT also plans to initiate Phase II clinical studies during 2002 aimed at demonstrating clinical proof-of-principle for a second product in its travelers' vaccine portfolio. 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. We are also developing three additional vaccines to prevent infection with *Shigella*, enterotoxigenic *E. coli* and *Campylobacter*—all important causes of severe diarrheal illness.

In preparation for large-scale clinical trials and eventual commercialization needs, AVANT has established a key manufacturing partnership for its bacterial vaccines. During 2001, we entered into supply agreements with Bio Sidus S.A. of Argentina, to manufacture cGMP grade quantities of AVANT's cholera and typhoid fever vaccines for planned clinical trials.

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 final stage global clinical development 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 Treatment 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 2003. As clinical data become available, we plan to seek a corporate partner to complete development and to commercialize the CETi-1 vaccine.

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. These include 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. Our success in generating revenues from sales of products may depend on the availability of reimbursement from third-party payors for the products. Accordingly, if we succeed in bringing products to market, there is no means to assure their cost effectiveness or the availability of reimbursement sufficient to sell the products on a profitable basis. If reimbursement is not available or is insufficient, the level of market acceptance of our products could suffer significantly.

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 through limitations on the growth of private health insurance premiums and Medicare and Medicaid 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 alternative 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.

Additional 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. Vaccine Development Programs

1. Travelers' Vaccines

AVANT is developing a series of single-dose, genetically-attenuated, live bacterial vaccines to prevent travelers' diarrhea and dysentery. Frost & Sullivan, a leading market research firm, estimated in a 1999 report that the worldwide market for diarrheal vaccines, addressed to the travelers' market only, would reach more than one billion dollars in 2005. Many of these vaccines could also meet the

healthcare requirements of less developed countries, where the need for cholera and typhoid vaccines is particularly acute.

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, 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 National Institute of Allergy and Infectious Disease ("NIAID") of the NIH also signed a Clinical Trial Agreement that allows 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, immunogenecity 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. AVANT plans to conduct a small dose ranging program prior to initiating pivotal Phase III clinical trials with CholeraGarde™ during the second half of 2002.

Development of a safe, effective cholera vaccine is the first step in establishing AVANT's travelers' vaccine franchise. AVANT has also conducted initial clinical studies of its single dose, oral typhoid vaccine, Ty800, and plans to initiate Phase II clinical studies during 2002 aimed at demonstrating clinical proof-of-principle for this vaccine to offer rapid, single-dose protection against *Salmonella typhi*, the cause of typhoid fever. We are moving swiftly with our manufacturing partner, Bio Sidus S.A., to complete the manufacture of cGMP grade clinical material in the first half of 2002 for these vaccines. In addition, we have a shigella vaccine in pre-clinical development. With our acquisition of Megan, AVANT gained access to technologies for developing vaccines against *Campylobacter* and enterotoxigenic *E. coli*, two additional causes of serious diarrheal diseases worldwide.

AVANT is also leveraging the value of its oral vaccine technology into additional markets through key collaborations. In partnership with the International Vaccine Institute ("IVI"), AVANT is working to bring its products to developing countries where they are most needed. With IVI's support, a Phase II trial of AVANT's cholera vaccine will begin in Bangladesh during 2002. AVANT has also partnered with Pfizer Inc ("Pfizer"), who will apply AVANT's vaccine technology to animal health and human food safety markets.

2. Vaccine Vector Technologies

AVANT's single-dose oral vaccine technology is currently addressed to serious bacterial diseases. However, 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.

AVANT's oral vaccine technology combines the advantages of rapid onset of protection with the flexibility to address a variety of different causes of disease. We are exploring further opportunities to use our technology to create potent, single-dose oral vaccines that rapidly protect military personnel and civilians against bacterial and viral agents used in biowarfare or terrorist activities. Thus, our vector technologies may prove useful for improving and expanding America's vaccine arsenal against microbial agents used in war or terrorist attacks.

3. 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. 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 final stage global clinical development of its investigational rotavirus vaccine, 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. 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™.

4. Other Human Vaccine Programs

We have conducted pre-clinical research and development in vaccines for genital herpes and anthrax infections. Genital herpes afflicts 50 million Americans, with 500,000 new cases diagnosed each year in the United States. Once a person is infected, the virus remains in the body for life and can be transmitted to other people through sexual activity, even in the absence of active disease. AVANT is developing a live, attenuated virus vaccine against herpes that pre-clinical studies have shown to be immunogenic and protective against herpes virus infections in animals. The company believes its approach to developing a herpes vaccine may additionally offer safety benefits over other live herpes vaccine approaches.

In October 2000, we were awarded a Phase I Small Business Innovation Research ("SBIR") grant to support the development of our genital herpes vaccine. The grant was awarded by the NIAID of the NIH. The vaccine, d15-29, utilizes a live, replication-defective mutant of the herpes virus to induce immunity. As with other live, attenuated vaccines, these defective herpes viruses are capable of eliciting a strong immune response in inoculated individuals, but are incapable of replicating themselves and spreading within the body. Previous studies by AVANT and Harvard Medical School have shown excellent pre-clinical safety and efficacy results with this vaccine. The SBIR grant is being used to support work in preparation for manufacturing of material to be used in human clinical trials. We are seeking additional government support for these programs and will be allocating only limited internal resources to these programs ourselves so that we may focus on more advanced projects which are currently in clinical development.

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5. 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 marketed by Megan.

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. 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 three vaccine programs in development for the poultry market. Megan®Egg, with USDA licensure expected in 2003-2004, is from the same master seed as Megan®Vac 1 with titer, dosage recommendations, and product configuration specifically targeting the layer market.

AntiPath™ is a *Salmonella typhimurium* strain containing both chromosomal and plasmid genes derived from avian pathogenic *E. coli*. AntiPath™ will be labeled for prevention of airsacculitis, perihepatitis, and pericarditis caused by *E. coli* infection in poultry. Licensure is expected in 2003-2004.

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. While Megan®Vac 1 does reduce some type C salmonellae, efficacy against *Salmonella kentucky* is inadequate in some cases. With current candidates under development, licensure is expected in 2004-2005.

Because AVANT's focus is on human health care, we are seeking an established animal health company to take over marketing and distribution of Megan's currently marketed poultry products and to assume control of the late-stage food safety and animal health vaccines under development for the commercial poultry market.

D. Therapeutic Drug Programs

1. Cholesterol Treatment 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 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. When complement is activated, it helps to identify and eliminate infectious pathogens and damaged tissue. In some situations, however, excessive complement activation may destroy viable and healthy tissue and tissue which, though damaged, might recover. This excessive response compounds the effects of the initial injury or introduces unwanted tissue destruction in certain clinical situations. Independently published studies have reported that our lead compound, TP10, a soluble form of naturally occurring Complement Receptor 1, effectively inhibits 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.

We started the complement program in 1988. From 1989 through 1994, TP10 was under development in a joint program with Glaxo and Yamanouchi Pharmaceutical Co., Ltd. ("Yamanouchi"). In 1995, AVANT and Glaxo agreed to a mutual termination by which we regained all rights to the program except for co-marketing rights in Japan, which were returned to us in 1999 by Yamanouchi.

In 1995, two separate Phase I clinical trials of TP10 were completed in patients at risk for acute respiratory distress syndrome (ARDS) and in patients with first-time myocardial infarctions. In each trial, TP10 demonstrated excellent safety and pharmacokinetic profiles, had a terminal phase half-life of at least 72 hours and was able to inhibit complement activity in a dose-dependent manner. In 1996, we began enrollment in a Phase I/II clinical trial in patients undergoing lung transplantation. Results showed that TP10 therapy appeared safe and well tolerated and demonstrated significant efficacy. Treated patients undergoing cardiopulmonary by-pass as part of the transplantation procedure showed significantly decreased intubation time and time on ventilation and a trend toward reduced time in the intensive care unit.

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. In December 1999, the Novartis agreement was amended to include the marketing rights for Japan. 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. Under the agreement, we may receive additional milestone payments based upon attainment of development and regulatory goals, which have an approximate aggregate value of up to $14 million. We may also receive funding for research as well as royalty payments on eventual product sales.

We elected to independently develop and commercialize TP10 for pediatric and adult cardiac surgery. In 2000, we completed an open-label, Phase I/II trial of TP10 in infants undergoing cardiac surgery for congenital heart defects. The trial evaluated the ability of TP10 to mitigate the injury to the heart and other organs that occurs when patients are placed on cardiopulmonary bypass circuits. TP10 was well tolerated in the study population. In March 2000, we received orphan drug designation for TP10 in infants undergoing cardiac surgery. In early 2001, AVANT initiated two Phase IIb studies of TP10 in pediatric cardiac surgery utilizing cardiopulmonary bypass. The first study is evaluating babies

born with hypoplastic left heart syndrome who often have high morbidity and mortality after heart surgery. The second study is being conducted in a lower risk infant population.

In November 2000, AVANT initiated a placebo-controlled Phase II trial in adult patients undergoing high-risk cardiac surgery utilizing cardiopulmonary bypass. A total of 564 patients were randomized into the study to receive one of four doses (1, 3, 5 or 10 mg/kg) of TP10, or placebo, as a thirty-minute intravenous infusion and were followed for 28 days post surgery. Recently AVANT announced that the results of this trial 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 apparent 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 is presently in the process of closing out the two Phase IIb studies of TP10 in pediatric cardiac surgery utilizing cardiopulmonary bypass. AVANT is further evaluating the future of its complement inhibitor program but no longer plans to advance clinical development 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 potential new class of drugs and in the extensive intellectual property portfolio that AVANT has established.

E. Immunotherapeutic Delivery Systems

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 believe that Therapore™ will be the core of a novel technology for the development of immunotherapeutics. 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 the HIV. This clinical trial of Therapore™-HIV is expected to begin next year. 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.

F. Collaborative Agreements

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. Under the agreement, we may receive additional milestone payments based upon attainment of development and regulatory goals, which has an approximate aggregate value of up to $14 million. We may also receive funding for research as well as royalty payments on eventual product sales.

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 must assume 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 will also receive research and development funding for up to two years as well as royalty payments on eventual product sales.

DynPort: In October 2001, AVANT granted a license to DynPort Vaccine Company LLC ("DynPort") for exclusive rights to use certain components of AVANT's vaccine technology. Financial terms of the agreement with DynPort include license fees, milestone payments and royalties. DynPort, 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. DynPort 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.

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.

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 $178.1 million, as of December 31, 2001. 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
Shigella vaccine	Dysentery	Pre-clinical
ETEC vaccine	Enterotoxigenic E. coli infection	Pre-clinical
Campylobacter vaccine	Campylobacter infection	Pre-clinical
Rotarix™ vaccine	Rotavirus	Clinical phase II

CETi-1 vaccine	Atherosclerosis	Clinical phase II
d15-29	Herpes simplex virus 2	Pre-clinical
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 3,235,284 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 27.1% of our total common stock outstanding as of December 31, 2001. 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 Novartis, 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 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 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 plan to rely on collaborators and contract manufacturers to manufacture proposed products in both clinical and commercial quantities in the future. There can be no assurances that we will be able to enter into any arrangements with such third party manufacturers on acceptable terms or at all. Further, contract manufacturers must also 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. Our potential 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 Duke University Medical Center, 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 tests. 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 Novartis, Glaxo, Pfizer, and DynPort, 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.

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.

Both demand and ultimately the profitability of Megan®Vac 1, our only current product available for commercial sales, and future products, are key 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 disappear due to obsolescence;
- 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 Lohmann Animal Health International, 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 our discontinuation of the product.

We employ two full time sales and customer support people to sell Megan®Vac 1. The costs associated with the employment of these two people, as well as the costs associated with our marketing and distribution of the product could become prohibitively expensive. Should we be unable to realize

acceptable profits from sales of Megan®Vac 1, we may choose to scale back our commercialization efforts.

Because AVANT's focus is on human health care, we are seeking an established animal health company to take over marketing and distribution of Megan®Vac 1 and to assume control of the late-stage food safety and animal health vaccines under development for the commercial poultry market. If we are unable to find a marketing and distribution partner, or the partner is unable to continue to distribute Megan®Vac 1 in an effective manner, or if we are unable to maintain sufficient personnel with the appropriate levels of experience to manage this function, we may be unable to meet the demand for our products and we may lose potential revenues.

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 2002 we expect to have in progress four Phase II clinical trials and two Phase III clinical trials. 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 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, Berna Biotech, ID Biomedical and Rhein 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:

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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 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.

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 plan to rely upon collaborators or contractors to manufacture our proposed products for both clinical and commercial purposes. We believe that there is currently sufficient capacity worldwide for the production of our potential products by our collaborators or through contract manufacturers.

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 have contracted with Lonza Bologics 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. for the manufacture of cGMP grade quantities of CholeraGarde™ cholera vaccine and Ty800 typhoid fever 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. 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.

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 an issued U.S. patent directed to a rotavirus strain antigen, which forms the basis of our rotavirus vaccine. We also have a license to U.S. patents, and foreign patent applications, directed to a defective HSV2 virus for use in our vaccine directed against genital herpes. 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 two issued patents in foreign countries 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.

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. It should be noted that a party challenging the

validity of a patent has the burden of proving invalidity and that 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; Harvard College and the Dana Farber Cancer Institute relating to a genetically-altered HSV2 virus for use in a genital herpes virus 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, 2002, we employed 71 full time persons, 14 of whom have doctoral degrees. Of these employees, 57 were engaged in or directly support research and development activities.

We have also retained a number of scientific consultants and advisors in various fields and have entered into consulting agreements with each of them. 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, of which we sublease approximately 14,000 square feet of excess laboratory and office space to a tenant. The lease has an initial six-year term which expires 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, 2001 and 2000 for this facility were $1,051,900 and $1,019,700, respectively. The sublease relating to the 14,000 square feet of excess space expires in April 2002. Under the sublease agreement we receive base annual sub-rental income of $308,300. We are currently marketing the space for a new sublessee.

We also lease approximately 17,800 square feet of laboratory and office space in Cambridge, Massachusetts. The lease had a five-year term and expired on November 30, 2001. Under the lease agreement, we were obligated to pay a base annual rent of $293,700. Effective February 1, 1999, we sublet the entire Cambridge, Massachusetts facility through the end of the lease term. Under the sublease agreement, we received base annual sub-rental income of $431,700 of which approximately $41,400 will be payable to the landlord as additional rent.

Our wholly owned subsidiary, Megan Health, Inc., leases approximately 11,000 square feet of laboratory and office space in St. Louis, Missouri. Under the lease agreement, we are obligated to pay a base annual rent of $244,000 until the lease expires on August 31, 2002. In November 2000, our building was sold to a new landlord who subsequently notified us that our lease was being terminated without cause as provided in the lease. As required by the lease, we were given 270 days written notice that its lease would now terminate as of August 31, 2001. Subsequently, we reduced our leased space to 7,400 sq. ft. and extended the lease with the new landlord through February 28, 2002. In March 2002, we entered into a new two-year lease with another landlord for approximately 12,400 square feet in the St. Louis area. 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 SECURITIES 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, 2000		
1Q (Jan. 1–March 31, 2000)	$ 16.75	$ 2.06
2Q (April 1–June 30, 2000)	11.06	4.66
3Q (July 1–Sept. 30, 2000)	12.00	6.50
4Q (Oct. 1–Dec. 31, 2000)	11.00	6.00
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

As of March 1, 2002, there were approximately 668 shareholders of our common stock. The price of the common stock was $1.29 as of the close of the market on March 1, 2002. 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 will be 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 will be 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 will be used to support clinical development of our lead complement inhibitor, TP10, in infants undergoing cardiac surgery on cardiopulmonary bypass and other company activities.

AVANT does not intend to pay dividends on its common stock for the foreseeable future.

Item 6. SELECTED FINANCIAL DATA

The selected consolidated financial data presented below for the years ended December 31, 2001, 2000, 1999, 1998 and 1997 have been derived from the audited consolidated financial statements of AVANT. The results of operations for 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 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	**2001**	**2000**	**1999**	**1998**	**1997**
REVENUE:					
Product Sales, Product Development and Licensing Revenue	$ 3,346	$ 763	$ 1,484	$ 2,150	$ 1,192
OPERATING EXPENSE:					
Research and Development	21,5817	10,774	7,872	5,703	5,257
Charge for Purchased In-Process Research & Development	—	9,012	—	44,630	—
Legal Settlement	—	(500)	—	(166)	6,109
Other Operating Expense	6,326	5,430	5,556	4,377	3,494
Total Operating Expense	27,907	24,716	13,428	54,544	14,860
Investment Income, Net	1,808	1,978	635	594	560
Net Loss	$ (22,753)	$ (21,975)	$ (11,309)	$ (51,800)	$ (13,108)
Basic and Diluted Net Loss Per Common Share	$ (0.39)	$ (0.42)	$ (0.26)	$ (1.56)	$ (0.52)
Weighted Average Common Shares Outstanding	57,982	52,438	44,076	33,177	25,140

	December 31,				
Consolidated Balance Sheet Data	**2001**	**2000**	**1999**	**1998**	**1997**
Working Capital	$ 37,821	$ 46,409	$ 12,289	$ 12,298	$ 4,629
Total Assets	53,485	63,563	19,883	22,650	9,827
Other Long Term Obligations	2,693	4,233	269	563	750
Accumulated Deficit	(178,073)	(155,320)	(133,345)	(122,036)	(70,237)
Total Stockholders' Equity	45,269	53,932	17,413	18,770	6,316

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, 2001 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: (i) our ability to successfully complete product research and development, including pre-clinical and clinical studies, and commercialization; (ii) our ability to obtain substantial additional funding; (iii) our ability to obtain required governmental approvals; (iv) our ability to attract manufacturing, sales, distribution and marketing partners and other strategic alliances; and (v) our ability to develop and commercialize our products before our competitors.

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.

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.

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. 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.

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

We are engaged in the discovery, development and commercialization of products that harness the human immune response to prevent and treat disease. Our products derive from a broad set of complementary technologies with the ability to regulate T and B cell activity and enable the creation and delivery 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 drugs and treatment vaccines that modify undesirable activity by the body's own proteins or cells.

Acquisitions

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, 2001, 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.

Virus Research Institute, Inc.: On August 21, 1998, AVANT acquired VRI, a company engaged in the discovery and development of systems for the delivery of vaccines and immunotherapeutics, and novel vaccines for adults and children. We issued 14,036,400 shares of AVANT's common stock and warrants to purchase 1,811,200 shares of AVANT's common stock in exchange for all of the outstanding common stock of VRI, on the basis of 1.55 shares of our common stock and .20 of an AVANT warrant for each share of VRI common stock. The acquisition 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 collaborative relationships, work force and goodwill and is being amortized on a straight-line basis over 12 to 60 months. An allocation of $44,630,000 was made to 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 third quarter of 1998.

As of the date of the acquisition, VRI was engaged in six significant research and development projects. As of December 31, 2001, technological feasibility had not yet been reached on any of the major projects acquired. Substantial additional research and development will be required prior to reaching technological feasibility on any of these projects. In addition, each project will need to successfully complete a series of clinical trials and will need to receive FDA approval prior to commercialization. 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 that 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, 2001, 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.

New Developments

Complement Inhibitors: In 1997, we entered into an agreement with Novartis relating to the development of TP10 for use in xenotransplantation (animal organs into humans) and allotransplantation (human organs into humans). We granted Novartis a two-year option to license TP10 with exclusive worldwide marketing rights (except Japan) in the fields of xenotransplantation and allotransplantation. In July 1999, Novartis exercised its option to license TP10 for use in the field of transplantation. In December 1999, the Novartis agreement was amended to include marketing rights for Japan. 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. Under the agreement, we may receive additional milestone payments of up to $14 million upon attainment of certain development and regulatory goals. We will also be entitled to royalties on product sales under the agreement.

We elected to independently develop and commercialize TP10 for pediatric and adult cardiac surgery. In 2000, we completed an open-label, Phase I/II trial of TP10 in infants undergoing cardiac surgery for congenital heart defects. The trial evaluated the ability of TP10 to mitigate the injury to the heart and other organs that occurs when patients are placed on cardiopulmonary bypass circuits. TP10 was well tolerated in the study population. In early 2001, AVANT initiated two Phase IIb studies of TP10 in pediatric cardiac surgery utilizing cardiopulmonary bypass. The first study is evaluating babies born with hypoplastic left heart syndrome who often have high morbidity and mortality after heart surgery. The second study is being conducted in a lower risk infant population.

In November 2000, AVANT initiated a placebo-controlled Phase II trial in adult patients undergoing high-risk cardiac surgery utilizing cardiopulmonary bypass. A total of 564 patients were randomized into the study to receive one of four doses (1, 3, 5 or 10 mg/kg) of TP10, or placebo, as a thirty-minute intravenous infusion and were followed for 28 days post surgery. Recently AVANT announced that the results of the trial 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 apparent differences in the safety profiles of the treatment groups.

Based on the outcomes of the adult TP10 trial, AVANT is presently in the process of closing out the two Phase IIb studies of TP10 in pediatric cardiac surgery utilizing cardiopulmonary bypass. AVANT is further evaluating the future of its complement inhibitor program but no longer plans to advance clinical development 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.

Travelers' Vaccines: AVANT has assembled a technology portfolio for the development of single-dose, oral vaccines aimed at providing rapid protection from five of the most important causes of severe diarrhea diseases. We are developing a single dose, oral cholera vaccine using a live, genetically attenuated cholera strain. Based on this technology, developed in academia, we have developed the vaccine through early clinical trials. In May 2001, AVANT announced results of a Phase IIb clinical trial performed and funded by the Walter Reed Army Institute of Research ("WRAIR") and the National Institute of Health ("NIH") in vaccinated individuals challenged with live, virulent cholera. Results of this study demonstrated the ability of AVANT's vaccine candidate, CholeraGarde™, to provide complete protection against the primary endpoint, moderate and severe diarrhea. AVANT

plans to conduct a small dose ranging program prior to initiating pivotal Phase III clinical trials with CholeraGarde™ during the second half of 2002.

Development of a safe, effective cholera vaccine is the first step in establishing AVANT's travelers' vaccine franchise. AVANT has conducted initial clinical studies of its single dose, oral typhoid vaccine and has a shigella vaccine in pre-clinical development. During 2002, we plan to initiate Phase II clinical studies aimed at demonstrating clinical proof-of-principle for the second product in our vaccine portfolio, Ty800. AVANT has designed the Ty800 vaccine to offer rapid, single-dose protection against *Salmonella typhi*, the cause of typhoid fever. With the acquisition of Megan, AVANT gained access to technologies for developing vaccines against *Campylobacter* and enterotoxigenic *E. coli*, two additional causes of serious diarrheal diseases worldwide.

AVANT's single dose, oral vaccine technology is currently addressed to serious bacterial diseases. However, the attenuated live bacteria used to create these vaccines also can serve as vectors for the development of vaccines against other bacterial and viral diseases. We are exploring further opportunities to use this technology to create potent, single-dose oral vaccines that rapidly protect military personnel and civilians against bacterial and viral agents used in biowarfare or terrorist activities.

Cholesterol Treatment 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 2003. As clinical data become available, we plan to seek a corporate partner to complete development and to commercialize the CETi-1 vaccine.

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 using its

newly manufactured rotavirus vaccine, called Rotarix™. Glaxo is now planning to initiate final stage global clinical development 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™.

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 Inc 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 ("DynPort") for exclusive rights to use certain components of AVANT's vaccine technology. Financial terms of the agreement with DynPort include license fees, milestone payments and royalties. DynPort, 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. DynPort 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, 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.

Fiscal Year Ended December 31, 2000 compared with Fiscal Year ended December 31, 1999

AVANT reported a net loss of $21,975,000, or $0.42 per share, for the year ended December 31, 2000, compared to a net loss of $11,309,100, or $0.26 per share, for the year ended December 31, 1999. 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, the net loss for 2000 increased $1,653,600, or 14.6%, to $12,962,700, or $0.25 per share, compared to a net loss of $11,309,100, or $0.26 per share, for 1999. The weighted average common shares outstanding used to calculate the net loss per common share was 52,438,100 in 2000 and 44,076,400 in 1999.

Revenue

Total revenue decreased $720,300, or 48.6%, to $763,200 in 2000 from $1,483,500 in 1999.

Product development and licensing revenue decreased $753,700, or 50.8%, to $729,800 in 2000 from $1,483,500 in 1999. In 2000, we recognized $729,800 in the amortization of nonrefundable license fees from Novartis and Pfizer in product development and licensing revenue. In 1999, product development and licensing revenue consisted primarily of $750,000 in the amortization of a nonrefundable option fee associated with our agreement with Novartis, a milestone payment of $500,000 from SmithKline and $193,500 received in connection with our SBIR grants.

Product sales for 2000 totaled $33,400 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. There were no product sales recorded in 1999.

Operating Expense

Total operating expense for 2000 was $24,716,300 compared to $13,427,800 for 1999. 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, operating expense increased $2,276,200, or 17.0%, to $15,104,000 for 2000 compared to $13,427,800 for 1999. The increase in total operating expense for 2000 compared to 1999 is primarily due to increased clinical trial costs and clinical materials costs incurred in connection with AVANT's TP10 and CETi-1 clinical programs. These cost increases were offset in part by the receipt in 2000 of legal settlement payments totaling $500,000 and a reduction in the charge for amortization of acquired intangible assets.

Research and development expense increased $2,902,400, or 36.9%, to $10,774,200 in 2000 from $7,871,800 in 1999. The increase in 2000 compared to 1999 is primarily due to costs associated with conducting clinical trials of CETi-1 and TP10, and an increase in expense associated with the manufacture of clinical materials.

Selling, general and administrative expense increased $528,100, or 12.3%, to $4,808,300 in 2000 compared to $4,280,200 in 1999. Included in selling, general and administrative expense in 2000 and 1999 are charges of $69,600 and $105,900 for the write-off of certain capitalized patent costs associated with our complement and SMIR programs, respectively. Excluding the writeoff of patent costs in 2000 and 1999, selling, general and administrative expense increased $564,400, or 13.5%, to $4,738,700 for 2000 compared to $4,174,300 for 1999. The increase in expense in 2000 compared to 1999 is primarily attributed to higher consultant, investor relations and personnel costs.

Investment Income, Net

Interest income increased $1,342,900, or 211%, to $1,978,100 for 2000 compared to $635,200 for 1999. The increase in interest income is primarily due to higher average cash balances in 2000.

Liquidity and Capital Resources

AVANT's cash, cash equivalents and marketable securities at December 31, 2001 was $42,665,900 compared to $50,177,000 at December 31, 2000. Cash used in operations was $20,825,400 in 2001 compared $4,431,900 in 2000 and $8,539,100 in 1999.

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.

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. In September 1999, we completed a private placement of 5,459,400 shares of common stock to institutional investors at a price of $1.92 per share. Net proceeds from the common stock issuance totaled approximately $9,838,900.

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, 2002 and into the first half of 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 2002, 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.

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, 2001 and 2000, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2001, 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.

PricewaterhouseCoopers LLP
Boston, Massachusetts
February 7, 2002

CONSOLIDATED BALANCE SHEET

	December 31, 2001	December 31, 2000
ASSETS		
Current Assets:		
Cash and Cash Equivalents	$ 42,665,900	$ 50,177,000
Accounts Receivable, Net of Allowance for Doubtful Accounts of $300 at December 31, 2000	267,200	153,500
Inventories	71,500	59,200
Current Portion Lease Receivable	—	395,700
Prepaid and Other Current Assets	338,800	1,021,200
Total Current Assets	43,343,400	51,806,600
Property and Equipment, Net	987,800	1,037,900
Intangible and Other Assets	9,153,500	10,718,500
Total Assets	$ 53,484,700	$ 63,563,000
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current Liabilities:		
Accounts Payable	$ 1,129,500	$ 902,300
Accrued Expenses	2,732,600	2,681,600
Current Portion Deferred Revenue	1,660,400	1,539,600
Current Portion Lease Payable	—	274,500
Total Current Liabilities	5,522,500	5,398,000
Long-Term Deferred Revenue	2,693,400	4,233,000
Commitments and Contingent Liabilities (Note 3)		
Stockholders' Equity:		
Common Stock, $.001 Par Value 75,000,000 Shares Authorized; 60,449,100 Issued and Outstanding at December 31, 2001; 57,144,200 Issued and Outstanding at December 31, 2000	60,400	57,100
Additional Paid-In Capital	223,281,800	209,195,300
Accumulated Deficit	(178,073,400)	(155,320,400)
Total Stockholders' Equity	45,268,800	53,932,000
Total Liabilities and Stockholders' Equity	$ 53,484,700	$ 63,563,000

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

CONSOLIDATED STATEMENT OF OPERATIONS

	Year Ended December 31, 2001	Year Ended December 31, 2000	Year Ended December 31, 1999
REVENUE:			
Product Development and Licensing Revenue	$ 2,999,800	$ 729,800	$ 1,483,500
Product Sales	346,100	33,400	—
Total Revenue	3,345,900	763,200	1,483,500
OPERATING EXPENSE:			
Research and Development	21,580,500	10,774,200	7,871,800
Selling, General and Administrative	4,914,100	4,808,300	4,280,200
Cost of Product Sales	36,800	3,500	—
Charge for Purchased In-Process Research & Development	—	9,012,300	—
Legal Settlement	—	(500,000)	—
Amortization of Acquired Intangible Assets	1,375,900	618,000	1,275,800
Total Operating Expense	27,907,300	24,716,300	13,427,800
Operating Loss	(24,561,400)	(23,953,100)	(11,944,300)
Investment Income, Net	1,808,400	1,978,100	635,200
Net Loss	$ (22,753,000)	$ (21,975,000)	$ (11,309,100)
Basic and Diluted Net Loss Per Common Share	$ (0.39)	$ (0.42)	$ (0.26)
Weighted Average Common Shares Outstanding	57,981,800	52,438,100	44,076,400

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

CONSOLIDATED STATEMENT OF STOCKHOLDERS' EQUITY

FOR THE YEARS ENDED DECEMBER 31, 2001, 2000 AND 1999

	Shares	Common Stock Par Value	Additional Paid-In Capital	Treasury Stock Cost	Accumulated Deficit	Total Stockholders' Equity
Balance at December 31, 1998	42,512,400	$ 42,500	$ 140,777,200	$ (13,800)	$ (122,036,300)	$ 18,769,600
Shares Issued upon Exercise of Stock Options	152,100	100	102,000	—	—	102,100
Employee Stock Purchase Plan Issuance	3,500	—	(2,200)	13,800	—	11,600
Net Proceeds from Stock Issuance	5,459,400	5,500	9,833,300	—	—	9,838,800
Net Loss	—	—	—	—	(11,309,100)	(11,309,100)
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	13,300	—	47,700	—	—	47,700

Issuance						
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

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, 2001	Year Ended December 31, 2000	Year Ended December 31, 1999
Cash Flows From Operating Activities:			
Net Loss	$ (22,753,000)	$ (21,975,000)	$ (11,309,100)
Adjustments to Reconcile Net Loss to Cash			
Used by Operating Activities:			
Depreciation and Amortization	2,257,300	1,310,800	1,988,600
Write-off of Capitalized Patent Costs	22,400	69,600	105,900
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:			
Current Portion Restricted Cash	—	—	750,000
Accounts Receivable	(113,700)	(8,100)	—
Inventories	(12,300)	2,400	—
Prepaid and Other Current Assets	682,400	(541,900)	190,700
Accounts Payable and Accrued Expenses	278,200	1,787,900	358,400
Deferred Revenue	(1,418,800)	5,772,600	(750,000)
Lease Receivable	395,700	431,700	395,600
Lease Payable	(274,500)	(294,200)	(269,200)
Other Non Current Assets	43,500	—	—
Net Cash Used in Operating Activities	(20,825,500)	(4,431,900)	(8,539,100)
Cash Flows From Investing Activities:			
Acquisition of Property and Equipment	(605,200)	(177,200)	(688,500)
Redemption of Marketable Securities	—	—	4,903,100
Increase in Patents and Licenses	(170,200)	(282,000)	(344,200)
Decrease in Long-Term Restricted Cash	—	217,000	148,000
Cash Paid for Acquisition of Megan Health, Inc.	—	(724,000)	—
Payment of Notes Payable	—	—	(750,000)
Net Cash Provided by (Used in) Investing Activities	(775,400)	(966,200)	3,268,400
Cash Flows From Financing Activities:			
Net Proceeds from Stock Issuance	13,575,200	39,515,900	9,850,400
Proceeds from Exercise of Stock Options and Warrants	514,600	2,440,200	102,100
Net Cash Provided by Financing Activities	14,089,800	41,956,100	9,952,500
Increase (Decrease) in Cash and Cash Equivalents	(7,511,100)	36,558,000	4,681,800
Cash and Cash Equivalents at Beginning of Period	50,177,000	13,619,000	8,937,200
Cash and Cash Equivalents at End of Period	$ 42,665,900	$ 50,177,000	$ 13,619,000

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

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

YEARS ENDED DECEMBER 31, 2001, 2000 and 1999

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. We develop and commercialize products on a proprietary basis and in collaboration with established pharmaceutical partners and other collaborators, including Novartis Pharma AG, GlaxoSmithKline plc, Pfizer Inc, and DynPort Vaccine Company LLC.

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. In September 1999, we completed a private placement of 5,459,400 shares of common stock to institutional investors at a price of $1.92 per share. Net proceeds from the common stock issuance totaled approximately $9,838,800.

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.

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. The payment included an equity investment of $2,307,700 for 1,439,500 shares of our common stock at $1.60 per share and a license fee of $3,692,300.

AVANT's cash and cash equivalents at December 31, 2001 was $42,665,900. Our working capital at December 31, 2001 was $37,820,900. We incurred a loss of $22,753,000 for the year ended December 31, 2001. 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, 2002. 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 2002, 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, 2001 and 2000, 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. 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.

The adoption of Staff Accounting Bulletin 101 "Revenue Recognition in Financial Statements" had no impact on our financial statements.

(F) Research and Development Costs

Research and development 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 and 2000. 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 some 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 periodically evaluate the recoverability of these assets 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 to purchase 3,235,284, 3,209,289 and 3,138,559 shares of common stock were not included in the 2001, 2000 and 1999 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, 2001, 2000 and 1999, the Company had no other comprehensive income.

(L) Stock 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 (ETIF) 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).

(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 its assets are in the United States.

(O) Recent Pronouncements

In June 2001, the Financial Accounting Standards Board issued FAS 142, Goodwill and Other Intangible Assets. Under FAS 142, goodwill and intangible assets with indefinite lives are no longer amortized but are reviewed at least annually for impairment. The amortization provisions of FAS 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 is required to adopt FAS 142 effective January 1, 2002. Application of the non-amortization provisions of FAS 142 for goodwill is expected to result in an increase in operating income of approximately $580,800 in 2002. Changes in the estimated useful lives of intangible assets are not expected to result in a material effect on net income in 2002. At December 31, 2001, we had goodwill of approximately $2.3 million. Pursuant to FAS 142, we will test goodwill for impairment upon adoption and, if impairment is indicated, record such impairment as a cumulative effect of an accounting change. AVANT is currently evaluating the effect that the adoption may have on its consolidated results of operation and financial position.

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, 2001 and 2000, 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, 2001	December 31, 2000
Laboratory Equipment	$ 2,235,200	$ 2,800,500
Office Furniture and Equipment	1,504,700	1,355,600
Leasehold Improvements	1,206,300	962,200
Total Property and Equipment	4,946,200	5,118,300
Less Accumulated Depreciation	(3,958,400)	(4,080,400)
	$ 987,800	$ 1,037,900

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 $587,974, $524,200 and $543,100 for the years ended December 31, 2001, 2000 and 1999, 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 7,400 sq. ft. of laboratory and office space in St. Louis, Missouri through February 28, 2002 and are presently investigating alternative lease arrangements in the St. Louis area.

Obligations for base rent under these and other noncancelable operating leases as of December 31, 2001 are approximately as follows:

Year ending December 31, 2002	$ 1,422,100
2003	1,496,200
2004	1,513,600
2005	1,536,800
2006 and thereafter	2,072,200
Total minimum lease payments	$ 8,040,900

Our total rent for all operating leases (including rent expense net of sublease income) was approximately $1,343,845, $1,159,300 and $804,900 for the years ended December 31, 2001, 2000 and 1999, respectively.

4. INTANGIBLE AND OTHER ASSETS

Other assets include the following:

	December 31, 2001	December 31, 2000
Capitalized Patent Costs	$ 2,470,700	$ 2,322,900
Accumulated Amortization	(1,177,300)	(883,900)
Capitalized Patent Costs, Net	1,293,400	1,439,000
Acquired Intangible Assets:		
Goodwill	2,901,100	2,901,100
Collaborative Relationships	1,090,000	1,090,000
Core Technology	1,786,900	1,786,900
Developed Technology	3,263,100	3,263,100
Strategic Partner Agreement	2,563,900	2,563,900
Accumulated Amortization	(3,816,200)	(2,440,300)
Acquired Intangible Assets, Net	7,788,800	9,164,700
Other Non Current Assets	71,300	114,800
	$ 9,153,500	$ 10,718,500

In accordance with SFAS 121, we evaluated and subsequently wrote off approximately $22,400, $69,600 and $105,900 in 2001, 2000 and 1999, 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, 2001, 2000 and 1999 relating to the capitalized costs of purchased licenses, patents and trademarks was approximately $293,455, $168,600 and $169,700, respectively.

Amortization expense for goodwill and acquired intangible assets for the years ended December 31, 2001, 2000 and 1999 was approximately $1,375,900, $618,000 and $1,275,800, respectively.

5. ACCRUED EXPENSES

Accrued expenses include the following:

	December 31, 2001	December 31, 2000
Accrued License Fees	$ 300,000	$ 201,800
Accrued Payroll and Employee Benefits	317,800	294,600
Accrued Clinical Trials	1,732,100	1,286,000
Accrued Professional Fees	122,400	165,000
Other Accrued Expenses	260,300	734,200
	$ 2,732,600	$ 2,681,600

6. INCOME TAXES

	Year Ended December 31,		
	2001	2000	1999
Income tax benefit (provision):			
Federal	$ 13,616,000	$ 4,954,600	$ 3,628,500
State	1,305,000	(572,000)	189,000
	14,921,000	4,382,600	3,817,500
Deferred tax assets valuation allowance	(14,921,000)	(4,382,600)	(3,817,500)
	$ —	$ —	$ —

Deferred tax assets are comprised of the following:

	December 31, 2001	December 31, 2000
Net Operating Loss Carryforwards	$ 59,438,000	$ 45,841,000
Tax Credit Carryforwards	6,232,000	5,276,000
Other	3,709,000	2,937,000
Gross Deferred Tax Assets	69,379,000	54,054,000
Deferred Tax Assets Valuation Allowance	(69,379,000)	(54,054,000)
	$ —	$ —

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

	2001	2000	1999
Loss at Statutory Rates	$ (7,736,000)	$ (7,471,500)	$ (3,866,800)
Research and Development Credits	(585,600)	(500,500)	(200,000)
State tax provision (benefit), net of federal tax liabilities	(1,691,600)	572,000	(747,200)
Other	386,900	(393,600)	438,300
Expiration of State NOLS	387,000	339,000	558,200
In Process R&D	—	3,072,000	—
Benefit of losses and credits not recognized, increase in valuation allowance	9,239,300	4,382,600	3,817,500

$	—	$	—	$	—

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.

6. INCOME TAXES (Continued)

At December 31, 2001, we had U.S. net operating loss carryforwards of $159,922,000, U.S. capital loss carryforwards of $1,852,000, and U.S. tax credits of $4,907,000 which expire at various dates through 2021. 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.

In September 1999, we completed a private placement of 5,459,400 newly issued shares of common stock. Net proceeds were approximately $9,838,800 after deducting all associated expenses of approximately $661,200.

(B) Preferred Stock

At December 31, 2001 and 2000, 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, 2001 and 2000.

(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, 2001 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 allows for a maximum of 2,000,000 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, 2001, 2000 and 1999 is as follows:

	2001		2000		1999	
	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,	3,209,289	$ 2.96	3,138,559	$ 2.34	3,354,708	$ 2.65
Granted	499,000	3.58	1,060,350	4.66	557,500	1.60
Assumed in acquisition	—	—	31,910	4.39	—	—
Exercised	(228,859)	2.02	(738,642)	2.86	(152,056)	0.67
Canceled	(244,146)	4.96	(282,888)	2.80	(621,593)	3.76
Outstanding at December 31,	3,235,284	$ 2.97	3,209,289	$ 2.96	3,138,559	$ 2.34
At December 31,						
Options exercisable	1,923,532		1,667,566		2,091,562	
Available for grant	572,713		934,674		2,833,818	
Weighted average fair value of options granted during year		$ 2.26		$ 2.49		$ 0.83

The following tables summarize information about the stock options outstanding at December 31, 2001:

	Options Outstanding		
Range of Exercise Prices	Number Outstanding	Weighted Average Remaining Contractual Life	Weighted Average Exercise Price per Share
$0.30—1.59	744,559	4.87	$ 1.0556
1.63—2.28	732,837	6.78	1.9853
2.41—2.94	682,054	6.04	2.5381
2.99—4.97	654,257	8.01	3.6163
5.06—14.69	421,577	6.85	7.7962
$0.30—14.69	3,235,284	6.44	2.9749

	Options Exercisable	
Range of Exercise Prices	Number Exercisable	Weighted Average Exercise Price per Share
$0.30—1.59	619,059	$ 1.0034
1.63—2.28	433,963	1.9113
2.41—2.94	443,930	2.5949
2.99—4.97	207,007	3.8343
5.06—14.69	219,573	7.1860
$0.30—14.69	1,923,532	2.5859

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, 2001, 2000 and 1999 would be as follows:

	2001	2000	1999
Net Loss:			
As reported	$ 22,753,000	$ 21,975,000	$ 11,309,100
Pro forma	22,779,800	22,925,300	11,416,700
Basic and Diluted Net Loss Per Share:			
As reported	$ 0.39	$ 0.42	$ 0.26
Pro forma	0.39	0.44	0.26

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:

	2001	2000	1999
Expected dividend yield	0%	0%	0%
Expected stock price volatility	109%	109%	63%
Risk-free interest rate	3.3%—4.7%	5.0%—6.5%	5.0%—6.1%
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, 2001 and 2000, 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).

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 $413,500, $307,500 and $221,500 for the years ended December 31, 2001, 2000 and 1999, 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, 2001, 2000 and 1999 were approximately $2,999,800, $729,800 and $1,483,500, 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. Under the agreement, we may receive additional milestone payments based upon attainment of specified development and regulatory goals totaling up to $14 million. We may also receive funding for research as well as royalty payments on eventual product sales.

(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 will also receive research and development funding for up to two years as well as royalty payments on eventual product sales.

(E) DynPort Vaccine Company LLC

In October 2001, AVANT granted a license to DynPort Vaccine Company LLC ("DynPort") for exclusive rights to use certain components of AVANT's vaccine technology. Financial terms of the agreement with DynPort include license fees, milestone payments and royalty payments on eventual product sales. DynPort, 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. DynPort 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. We have not assigned any value on our balance sheet to our 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 and was charged to expense on the date of the transaction. 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.

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 $10,500, of their total salary in 2001. 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 $30,400, $29,200 and $30,100 for the years ended December 31, 2001, 2000 and 1999, respectively.

12. FOREIGN SALES

Product sales were generated geographically as follows:

Net Product Sales for the Twelve Months Ended	Europe	USA	Asia	Total
December 31, 2001	$ —	$ 331,600	$ 14,500	$ 346,100
December 31, 2000	—	33,400	—	33,400
December 31, 1999	—	—	—	—

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, 2001, 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 and 1999, respectively. 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	1999
Revenue	$ 1,839,700	$ 3,462,500
Net loss	(15,662,400)	(13,688,100)
Basic and diluted net loss per share	(0.29)	(0.25)

14. SELECTED QUARTERLY FINANCIAL DATA (Unaudited)

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)
1999	**Q1 1999**	**Q2 1999**	**Q3 1999**	**Q4 1999**
Total revenue	$ 337,900	$ 847,900	$ 297,700	$ —
Net loss	(2,741,800)	(2,356,200)	(2,552,000)	(3,659,100)
Basic and diluted net loss per common share	(0.06)	(0.06)	(0.06)	(0.08)

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

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.

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 21, 2002 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 21, 2002
(J. Barrie Ward)		
/s/ UNA S. RYAN	President, Chief Executive Officer, and Director	March 21, 2002
(Una S. Ryan)		
/s/ AVERY W. CATLIN	Senior Vice President, Chief Financial Officer and Treasurer	March 21, 2002
(Avery W. Catlin)		
/s/ FREDERICK W. KYLE	Director	March 21, 2002
(Frederick W. Kyle)		
/s/ THOMAS R. OSTERMUELLER	Director	March 21, 2002
(Thomas R. Ostermueller)		
/s/ HARRY H. PENNER, JR.	Director	March 21, 2002
(Harry H. Penner, Jr.)		
/s/ PETER A. SEARS	Director	March 21, 2002
(Peter A. Sears)		
/s/ KAREN S. LIPTON	Director	March 21, 2002
(Karen S. Lipton)		

PART IV

Item 14. 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
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 Certificate of Incorporation of the Company. Incorporated by reference to Exhibit 3.2 of the 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.
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.
10.1	AVANT Immunotherapeutics, Inc. 1994 Employee Stock Purchase Plan. Incorporated by reference to 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 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 the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1998.
10.8	Commercial Lease Agreement of May 1, 1997 between the Company and Fourth Avenue Ventures Limited. Incorporated by reference to the Company's quarterly report on Form 10-Q for the quarterly period ended September 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.
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 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 Forest City 38 Sidney Street, Inc.; Forest City Management, Inc.; and Forest City Enterprises, Inc. Incorporated by reference to the 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 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 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 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 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 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.
*10.18	First Amendment to AVANT Immunotherapeutics, Inc. 1999 Stock Option and Incentive Plan.
21.0	List of Subsidiaries. Incorporated by reference to Exhibit 21.0 of the Company's Annual Report on Form 10-K for the year ended December 31, 2000.
*23.0	Consent of Independent Accountants.

* Filed herewith.

(B) Reports on Form 8-K.

None.

QuickLinks

AMENDMENT TO RIGHTS AGREEMENT

1. GENERAL BACKGROUND. In accordance with Supplements and Amendments Section of the Rights Agreement between State Street Bank and Trust Company (the "Rights Agent") and Avant Immunotherapeutics, Inc. ("AVANT IMMUNOTHERAPEUTICS") dated November 10, 1994 (the "Agreement"), the Rights Agent and Avant Immunotherapeutics desire to amend the Agreement to appoint EquiServe Trust Company, N.A.

2. EFFECTIVENESS. This Amendment shall be effective as of December 17, 2001 (the "Amendment") and all defined terms and definitions in the Agreement shall be the same in the Amendment except as specifically revised by the Amendment.

3. REVISION. The section in the Agreement entitled "Change of Rights Agent" is hereby deleted in its entirety and replaced with the following:

CHANGE OF RIGHTS AGENT. The Rights Agent or any successor Rights Agent may resign and be discharged from its duties under this Agreement upon 30 days' notice in writing mailed to the Company and to each transfer agent of the Common Shares or Preferred shares by registered or certified mail and to the holders of the Right Certificates by first-class mail. The Company may remove the Rights Agent or any successor Rights Agent upon 30 days' notice in writing mailed to the Rights Agent or successor Rights Agent, as the case may be, and to each transfer agent of the Common Shares or Preferred Shares by registered or certified mail, and to the holders of the Right Certificates by first-class mail. If the Rights Agent shall resign or be removed or shall otherwise become incapable of acting, the Company shall appoint a successor to the Rights Agent. If the Company shall fail to make such appointment within a period of 30 days after giving notice of such removal or after it has been notified in writing of such resignation or incapacity by the resigning or incapacitated rights Agent or by the holder of a Right Certificate (who shall, with such notice, submit such holder's Right Certificate for inspection by the company), then the registered holder of any Right Certificate may apply to any court of competent jurisdiction for the appointment of a new Rights Agent. Any successor Rights Agent, whether appointed by the Company or by such a court, shall be a corporation or trust company organized and doing business under the laws of the United States, in good standing, which is authorized under such laws to exercise corporate trust or stock transfer powers and is subject to supervision or examination by federal or state authority and which has individually or combined with an affiliate at the time of its appointment as Rights Agent a combined capital and surplus of at least $100 million dollars. After appointment, the successor Rights Agent shall be vested with the same powers, rights, duties and responsibilities as if it had been originally named as Rights Agent without

further act or deed; but the predecessor Rights Agent shall deliver and transfer to the successor Rights Agent any property at the time held by it hereunder, and execute and deliver any further assurance, conveyance, act or deed necessary for the purpose. Not later than the effective date of any such appointment the Company shall file notice thereof in writing with the predecessor Rights Agent and each transfer agent of the Common Shares or Preferred Shares, and mail a notice thereof in writing to the registered holders of the Right Certificates. Failure to give any notice provided for in this Section 21, however, or any defect therein, shall not affect the legality or validity of the resignation or removal of the Rights Agent or the appointment of the successor Rights Agent, as the case may be.

4. Except as amended hereby, the Agreement and all schedules or exhibits thereto shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have caused this Amendment to be executed in their names and on their behalf by and through their duly authorized officers, as of this 17th day of December, 2001.

AVANT IMMUNOTHERAPEUTICS, INC

/s/ Avery W. Catlin
- ----------

By: Avery W. Catlin
Title: Senior Vice President and CFO

STATE STREET BANK AND TRUST COMPANY

/s/ Carol Mulvey-Eori

By: Carol Mulvey-Eori
Title: Managing Director, Client Administration

EQUISERVE TRUST COMPANY, N.A.

/s/ Carol Mulvey-Eori

By: Carol Mulvey-Eori
Title: Managing Director,
Client Administration

[LETTERHEAD OF THE DAVIS COMPANIES]

August 23, 2001

Mr. Avery W. Catlin
Senior Vice President and
Chief Financial Officer — Via Fax and Certified Mail
AVANT Immunotherapeutics, Inc.
119 Fourth Avenue
Needham, MA 02494-2725

Re: Lease at 115-119 Fourth Avenue, Needham, MA

Dear Chip:

With reference to the Lease of space at 115 Fourth Avenue, Needham, MA dated May 1, 1996 between AVANT Immunotherapeutics, Inc. (formerly known as T Cell Sciences, Inc.), as Lessee, and DIV Needham 53 LLC as successor in interest to Fourth Avenue Ventures Limited Partnership, as Lessor: In accordance with Section 1.1 and Section 4.2 of the Lease, Tenant has timely exercised its option to extend the term of the Lease for an additional five years, from May 1, 2002 through April 30, 2007 (the "Extension Term").

In accordance with Section 4.3 of the Lease, Landlord and Tenant hereby agree and confirm the Annual Fixed Rent for the Extension Term in accordance with Section 4.2 of the Lease shall be as follows:

May 1, 2002 - April 30, 2003@ net rent of $27.00/SF or $1,466,559.00 per year.
May 1, 2003 - April 30, 2004@ net rent of $27.00/SF or $1,466,559.00 per year.
May 1, 2004 --April 30, 2005@ net rent of $27.50/SF or $1,493,717.50 per year.
May 1, 2005 -April 30, 2006@ net rent of $28.00/SF or $1,520,876.00 per year.
May 1, 2006 - April 30, 2007@ net rent of $28.75/SF or $1,561,613.75 per year.

All other terms and conditions of the Lease shall remain unchanged and in full force and effect. Please sign below and return a copy of this letter to me, and this letter will serve as our Confirmation of the Extension Term Rent.

I am glad we were able to come to agreement, and look forward to working with you during your continued tenancy. If you have any questions, or I can be of any assistance, please do not hesitate to call me.

Sincerely, '
DIV NEEDHAM 115 LLC
By: Davis Management Corp., Its Managing Agent

/s/ Amy B. Klein
- ----------------
By: Amy E. Klein
Its: Senior Vice President

Agreed to and accepted by AVANT Immunotherapeutics, Inc.

By: /s/ Avery W. Catlin, its: Senior VP & CFO
---------- ----------
Duly authorized

Confidential Treatment Requested As To Certain
Information Contained In This Exhibit

EXCLUSIVE LICENSE AGREEMENT

This Agreement, effective October 10, 2001 (the "Effective Date"), is between AVANT Immunotherapeutics, Inc. ("AVANT"), a Delaware corporation, and DynPort Vaccine Company LLC ("DVC"), a Virginia Limited Liability Company.

R E C I T A L S

WHEREAS, AVANT has expertise in the expression, purification, and characterization of the BACILLUS ANTHRACIS bacterial protein Protective Antigen ("PA") from ESCHERICHIA COLI ("E COLI");

WHEREAS, AVANT owns materials, information and documents for the manufacture of clinical grade recombinant PA (expressed from E COLI) in accordance with Good Manufacturing Practices ("cGMP");

WHEREAS, AVANT owns information and documents relating to preclinical development of recombinant PA (expressed from E COLI);

WHEREAS, AVANT owns a United States patent application titled "Improved Vaccination Against Anthrax"; and

WHEREAS, DVC desires to obtain and AVANT is willing to grant to DVC a license to AVANT's PA technology in the field of prophylactic anthrax vaccines.

NOW, THEREFORE, AVANT and DVC hereby agree as follows:

1. DEFINITIONS.

1.1. "AFFILIATE" means any legal entity (such as a corporation, partnership, or limited liability company) that is controlled by AVANT or by DVC. For the purposes of this definition, the term "control" means (i) beneficial ownership of at least fifty percent (50%) of the voting securities of a corporation or other business organization with voting securities or (ii) a fifty percent (50%) or greater interest in the net assets or profits of a partnership or other business organization without voting securities.

1.2. "BIOLOGICAL MATERIALS" means certain tangible biological materials owned or licensed by AVANT, which materials are described in EXHIBIT A, as well as tangible materials that are routinely produced through use of the original materials, including, for example, any progeny derived from a cell line, monoclonal antibodies produced by hybridoma cells, DNA or RNA replicated from isolated DNA or RNA, recombinant proteins produced through use of isolated DNA or RNA, and substances routinely purified from a source material included in the original materials (such as recombinant proteins isolated from a cell extract or supernatant by non-proprietary affinity purification methods). These Biological Materials shall be listed in EXHIBIT A, which will be periodically amended to include any additional Biological Materials that AVANT may furnish to DVC.

1.3. "COMBINATION PRODUCT" means a product that contains a Licensed Product component and at least one other essential functional component. For example, a combination vaccine for prevention of anthrax and a second disease would be a Combination Product.

1.4. "CONFIDENTIAL INFORMATION" means any confidential or proprietary information furnished by one party (the "Disclosing Party") to the other party (the "Receiving Party") in connection with this Agreement, provided that such information is specifically designated as confidential. Such Confidential Information shall include, without limitation, any diligence reports furnished to AVANT under Section 3.1. and royalty reports furnished to AVANT under Section 5.2.

1.5. "FIELD" means human prophylactic vaccines for prevention of anthrax.

1.6. "LICENSED PRODUCT" means any product that cannot be developed, manufactured, used, or sold without (i) infringing one or more claims under the Patent Rights, (ii) using or incorporating some portion of one or more Biological Materials, or (iii) using some portion of the Related Technology. This Section 1.6. is not intended to preclude DVC from using industry standard practices in the development of anthrax vaccines or other vaccine products, nor to require payment to AVANT for such uses. The parties acknowledge that DVC is working on a parallel development effort with PA expressed from BACILLUS ANTHRACIS. Nothing in this agreement abridges DVC's rights to pursue that

development.

1.7. "MINIMUM ROYALTY PERIOD" means the one-year period commencing on the earliest of the January 1, April 1, July 1 or October 1 following the date of NDA or BLA approval of a Licensed Product, and each one-year period thereafter during the term of this Agreement.

1.8. "NET SALES" means the gross amount received on sales by DVC and its Affiliates and Sublicensees of Licensed Products, less the following: (i) customary trade, quantity, or cash discounts and commissions to non-affiliated brokers or agents to the extent actually allowed and taken; and (ii) amounts repaid or credited by reason of rejection or return; (iii) to the extent separately stated on purchase orders, invoices, or other documents of sale, any taxes or other governmental charges levied on the production, sale, transportation, delivery, or use of a Licensed Product which is paid by or on behalf of DVC; and (iv) outbound transportation costs prepaid or allowed and costs of insurance in transit.

In any transfers of Licensed Products between DVC and an Affiliate or Sublicensee, Net Sales shall be calculated based on the final sale of the Licensed Product to an independent third party. In the event that DVC or an Affiliate or Sublicensee receives non-monetary consideration for any Licensed Products, Net Sales shall be calculated based on the fair market value of such consideration. In the event that DVC or its Affiliates or Sublicensees use or dispose of a Licensed Product in the provision of a commercial service, the Licensed Product shall be considered sold and the Net Sales shall be calculated based on the sales price of the Licensed Product to an independent third party during the same Royalty Period or, in the absence of such sales, on the fair market value of the Licensed Product as determined by the parties in good faith.

In the case of Combination Products, Net Sales means the gross amount billed or invoiced on sales of the Combination Product less the deductions set forth above, multiplied by a proration factor that is determined as follows:

(i) If all components of the Combination Product were sold separately during the same or immediately preceding Royalty Period, the proration factor shall be determined by the formula [A / (A+B)], where A is the aggregate gross sales price of all Licensed Product components during such period when sold separately from the other essential functional components, and B is the aggregate gross sales price of the other essential functional components during such period when sold separately from the Licensed Product Components; or

(ii) If all components of the Combination Product were not sold separately during the same or immediately preceding Royalty Period, the proration factor shall be determined by the formula [C / (C+D)], where C is the aggregate fully absorbed cost of the Licensed Product components during the prior Royalty Period and D is the aggregate fully absorbed cost of the other essential functional components during the prior Royalty Period, with such costs being determined in accordance with generally accepted accounting principles.

1.9. "PATENT RIGHTS" means the U.S. patent applications listed on EXHIBIT A, and any divisional, continuation, or continuation-in-part of such patent applications to the extent the claims are directed to subject matter specifically described therein, as well as any patent issued thereon and any reissue or reexamination of such patent, and any foreign counterparts to such patents and patent applications. EXHIBIT A shall be periodically amended to include any additional Patent Rights that may arise. "AVANT PATENT RIGHTS" means Patent Rights assigned solely to AVANT. "JOINT PATENT Rights" means Patent Rights assigned to both AVANT and DVC.

1.10. "RELATED TECHNOLOGY" means any know-how, technical information, research and development information, test results, and data related to PA which has been developed by AVANT as of the Effective Date and which is owned by AVANT.

1.11. "ROYALTY PERIOD" means the partial calendar quarter commencing on the date on which the first Licensed Product is sold or used and every complete or partial calendar quarter thereafter during which either (i) this Agreement remains in effect or (ii) DVC has the right to complete and sell work-in-progress and inventory of Licensed Products pursuant to Section 8.5.

1.12. "SUBLICENSE INCOME" means any payments that DVC receives from a Sublicensee in consideration of the sublicense of the rights granted DVC under Section 2.1., including without limitation license fees, royalties, milestone payments, and license maintenance fees, but excluding the following payments: (i) payments made in consideration for the issuance of equity or debt securities

of DVC at fair market value, and (ii) payments specifically committed to the development of Licensed Products.

1.13. "SUBLICENSEE" means any permitted sublicensee of the rights granted DVC under this Agreement, as further described in Section 2.2.

2. GRANT OF RIGHTS.

2.1. LICENSE GRANTS.

(a) PATENT RIGHTS AND BIOLOGICAL MATERIALS. Subject to the terms of this Agreement, AVANT hereby grants to DVC and its Affiliates an exclusive, worldwide, royalty-bearing license (with the right to sublicense) under its rights in the Patent Rights and Biological Materials to develop, make, have made, use, and sell Licensed Products in the Field.

(b) RELATED TECHNOLOGY. Subject to the terms of this Agreement, AVANT hereby grants to DVC and its Affiliates a non-exclusive, royalty-bearing license (with the right to sublicense) under its rights in the Related Technology to develop, make, have made, use, and sell Licensed Products in the Field.

2.2. SUBLICENSES. DVC shall have the right to grant sublicenses of its rights under Section 2.1. with the consent of AVANT, which consent shall not be unreasonably withheld or delayed. All sublicense agreements executed by DVC pursuant to this Article 2 shall expressly bind the Sublicensee to the terms of this Agreement and shall provide for the automatic assignment of such agreement to AVANT if this Agreement is terminated as described in Article 8 below. DVC shall promptly furnish AVANT with a fully executed copy of any such sublicense agreement.

2.3. RETAINED RIGHTS.

(a) AVANT. AVANT retains the right to make and use Licensed Products for research, teaching, and non-commercial patient care, without payment of compensation to DVC. AVANT may license its retained rights under this Section to academic research collaborators of AVANT. AVANT's retained rights for research specifically exclude clinical research in the Field.

(b) FEDERAL GOVERNMENT. To the extent that any invention claimed in the Patent Rights has been partially funded by the United States federal government, this Agreement and the grant of any rights in such Patent Rights are subject to and governed by federal law as set forth in 35 U.S.C. Sections 201-211, and the regulations promulgated thereunder, as amended, or any successor statutes or regulations. The parties acknowledge that these statutes and regulations reserve to the federal government a royalty-free, non-exclusive, non-transferrable license to practice any government-funded invention claimed in any Patent Rights. If any term of this Agreement fails to conform with such laws and regulations, the relevant term shall be deemed an invalid provision and modified in accordance with Section 10.11.

3. DVC OBLIGATIONS RELATING TO COMMERCIALIZATION.

3.1. DILIGENCE REQUIREMENTS. DVC shall use diligent efforts, or shall cause its Affiliates and Sublicensees to use diligent efforts, to develop Licensed Products and to introduce Licensed Products into the commercial market; thereafter, DVC or its Affiliates or Sublicensees shall make Licensed Products reasonably available to the public. Specifically, DVC or Affiliate or Sublicensee shall fulfill the following obligations:

(1) Within thirty (30) days after the Effective Date, DVC shall furnish AVANT with a written research and development plan under which DVC intends to develop Licensed Products. Due to the sensitive nature of the underlying federal program, this report shall be a top level overview only of the development plan.

(2) Within sixty (60) days after each anniversary of the Effective Date, DVC shall furnish AVANT with a written report on the progress of its efforts during the prior year to develop and commercialize Licensed Products, including without limitation research and development efforts, efforts to obtain regulatory approval, marketing efforts, and sales figures. The report shall also contain a discussion of intended efforts and sales projections for the current year. Due to the sensitive nature of the underlying federal program, this report shall be a top level overview only of the development progress.

(3) No later than ***Confidential Treatment Requested as to this Information*** DVC shall initiate a clinical trial of a Licensed Product.

In the event that AVANT determines that DVC (or an Affiliate or Sublicensee) has not fulfilled its obligations under this Section 3.1., AVANT shall furnish DVC with written notice of such determination. Within sixty (60) days after receipt of such notice, DVC shall either (i) fulfill the relevant obligation or (ii) negotiate with AVANT a mutually acceptable schedule of revised diligence obligations, failing which AVANT shall have the right, immediately upon written notice to DVC, to grant additional licenses to third parties to the Patent Rights and Biological Materials in the Field.

3.2. INDEMNIFICATION.

(a) INDEMNITY. DVC shall indemnify, defend, and hold harmless AVANT and its directors, officers, employees, and agents and their respective successors, heirs and assigns (the "Indemnitees"), against any liability, damage, loss, or expense (including reasonable attorneys fees and expenses of litigation) incurred by or imposed upon any of the Indemnitees in connection with any claims, suits, actions, demands or judgments arising out of any theory of liability (including without limitation actions in the form of tort, warranty, or strict liability and regardless of whether such action has any factual basis) concerning any product, process, or service that is made, used, or sold pursuant to any right or license granted under this Agreement; provided, however, that such indemnification shall not apply to any liability, damage, loss, or expense to the extent directly attributable to (i) the negligent activities or intentional misconduct of the Indemnitees or (ii) the settlement of a claim, suit, action, or demand by Indemnitees without the prior written approval of DVC.

(b) PROCEDURES. The Indemnitees agree to provide DVC with prompt written notice of any claim, suit, action, demand, or judgment for which indemnification is sought under this Agreement. DVC agrees, at its own expense, to provide attorneys reasonably acceptable to AVANT to defend against any such claim. The Indemnitees shall cooperate fully with DVC in such defense and will permit DVC to conduct and control such defense and the disposition of such claim, suit, or action (including all decisions relative to litigation, appeal, and settlement); provided, however, that any Indemnitee shall have the right to retain its own counsel, at the expense of DVC, if representation of such Indemnitee by the counsel retained by DVC would be inappropriate because of actual or potential differences in the interests of such Indemnitee and any other party represented by such counsel. DVC agrees to keep AVANT informed of the progress in the defense and disposition of such claim and to consult with AVANT with regard to any proposed settlement.

(c) INSURANCE. DVC shall maintain insurance that is reasonably adequate to fulfill any potential obligation to the Indemnitees, but in any event not less than one million dollars ($1,000,000) for injuries to any one person arising out of a single occurrence and five million dollars ($5,000,000) for injuries to all persons arising out of a single occurrence. DVC shall provide AVANT, upon request, with written evidence of such insurance. DVC shall continue to maintain such insurance after the expiration or termination of this Agreement during any period in which DVC or any Affiliate or Sublicensee continues to make, use, or sell a product that was a Licensed Product under this Agreement, and thereafter for a period of five (5) years.

3.3. USE OF AVANT NAME. In accordance with Section 7.3., DVC and its Affiliates and Sublicensees shall not use the name "AVANT Immunotherapeutics, Inc." or any variation of that name in connection with the marketing or sale of any Licensed Products without the prior written consent of AVANT.

3.4. MARKING OF LICENSED PRODUCTS. To the extent commercially feasible and consistent with prevailing business practices, DVC shall mark, and shall cause its Affiliates and Sublicensees to mark, all Licensed Products that are manufactured or sold under this Agreement with the number of each issued patent under the Patent Rights that applies to such Licensed Product.

3.5. COMPLIANCE WITH LAW. DVC shall comply with, and shall ensure that its Affiliates and Sublicensees comply with, all local, state, federal, and international laws and regulations relating to the development, manufacture, use, and sale of Licensed Products. DVC expressly agrees to comply with the following:

(i) DVC or its Affiliates or Sublicensees shall obtain all necessary approvals from the United States Food & Drug Administration and any similar governmental authorities of any foreign jurisdiction in which DVC or an Affiliate or Sublicensee intends to make, use, or sell Licensed Products.

(ii) DVC and its Affiliates and Sublicensees shall comply with all United States laws and regulations controlling the export of certain commodities and technical data,

including without limitation all Export Administration Regulations of the United States Department of Commerce. Among other things, these laws and regulations prohibit, or require a license for, the export of certain types of commodities and technical data to specified countries. DVC hereby gives written assurance that it will comply with, and will cause its Affiliates and Sublicensees to comply with, all United States export control laws and regulations, that it bears sole responsibility for any violation of such laws and regulations by itself or its Affiliates or Sublicensees, and that it will indemnify, defend, and hold AVANT harmless (in accordance with Section 3.2.) for the consequences of any such violation.

(iii) To the extent that any invention claimed in the Patent Rights has been partially funded by the United States government, and only to the extent required by applicable laws and regulations, DVC agrees that any Licensed Products used or sold in the United States will be manufactured substantially in the United States or its territories. Current law provides that if domestic manufacture is not commercially feasible under the circumstances, AVANT may seek a waiver of this requirement from the relevant federal agency on behalf of DVC.

4. CONSIDERATION FOR GRANT OF RIGHTS.

4.1. MATERIALS FEE. DVC shall pay AVANT on the Effective Date a payment of ***Confidential Treatment Requested as to this Information*** AVANT for its expenses incurred in connection with developing and manufacturing cGMP PA. This payment is nonrefundable and is not creditable against any other payments due to AVANT under this Agreement.

4.2. LICENSE MAINTENANCE FEES. DVC shall pay AVANT on the Effective Date a license maintenance fee of ***Confidential Treatment Requested as to this Information***. On January 1, 2003, and on January 1 of each year thereafter during the term of this Agreement, DVC shall pay AVANT an annual license maintenance fee of ***Confidential Treatment Requested as to this Information***. These license maintenance fees are nonrefundable and are not creditable against any other payments due to AVANT under this Agreement.

4.3. MILESTONE PAYMENTS. DVC shall pay AVANT the following milestone payments within thirty (30) days after the occurrence of each event:

Confidential Treatment Requested as to this Information

These milestone payments are nonrefundable and are not creditable against any other payments due to AVANT under this Agreement.

4.4. ROYALTIES.

(a) BASE ROYALTY. In partial consideration of the rights granted DVC under this Agreement, DVC shall pay AVANT a royalty of (i) ***Confidential Treatment Requested as to this Information*** of Licensed Products sold to the United States federal government by DVC and its Affiliates (but not Sublicensees) and (ii) ***Confidential Treatment Requested as to this Information*** of Licensed Products sold to any buyer other than the United States federal government by DVC and its Affiliates (but not Sublicensees).

(b) ROYALTY REDUCTION. If AVANT grants additional licenses to third parties pursuant to Section 3.1., the royalty rates set forth in Subsection 4.5.(a) shall be adjusted, if necessary, so as not to exceed the royalty rates charged any other licensee of the Patent Rights during the term of the non-exclusive license.

4.5. MINIMUM ROYALTY. Within sixty (60) days after the end of each Minimum Royalty Period, if the actual royalty is less than ***Confidential Treatment Requested as to this Information*** for the Minimum Royalty Period, DVC shall pay AVANT a minimum royalty payment of ***Confidential Treatment Requested as to this Information*** less any actual royalties paid by DVC to AVANT for the Minimum Royalty Period.

4.6. SUBLICENSE INCOME. DVC shall pay AVANT a total of ***Confidential Treatment Requested as to this Information*** of all Sublicense Income. Except for royalty-based payments, such amounts shall be due and payable

within sixty (60) days after DVC receives the relevant payment from the Sublicensee; royalty-based payments of Sublicense Income shall be due and payable as provided in Article 5 below.

5. ROYALTY REPORTS; PAYMENTS; RECORDS.

5.1. FIRST SALE. DVC shall report to AVANT the date of first commercial sale of each Licensed Product within thirty (30) days of occurrence in each country.

5.2. REPORTS AND PAYMENTS. Within sixty (60) days after the conclusion of each Royalty Period, DVC shall deliver to AVANT a report containing the following information:

(i) the number of doses of Licensed Products sold to the United States federal government, and the number of doses of Licensed Products used by DVC and its Affiliates in the provision of services to the United States federal government;

(ii) the number of doses of Licensed Products sold to independent third parties other than the United States federal government in each country, and the number of doses of Licensed Products used by DVC and its Affiliates in the provision of services to such parties in each country;

(iii) calculation of total royalty payable; and

(iv) the portion of royalty-based Sublicense Income due to AVANT for the applicable Royalty Period from each Sublicensee.

All such reports shall be considered DVC Confidential Information. If no royalties are due to AVANT for any Royalty Period, the report shall so state. Concurrent with this report, DVC shall remit to AVANT any payment due for the applicable Royalty Period.

5.3. PAYMENTS IN U.S. DOLLARS. All payments due under this Agreement shall be payable in United States dollars. Conversion of foreign currency to U.S. dollars shall be made at the conversion rate existing in the United States (as reported in the WALL STREET JOURNAL) on the last working day of the calendar quarter preceding the applicable Royalty Period. Such payments shall be without deduction of exchange, collection, or other charges.

5.4. PAYMENTS IN OTHER CURRENCIES. If by law, regulation, or fiscal policy of a particular country, conversion into United States dollars or transfer of funds of a convertible currency to the United States is restricted or forbidden, DVC shall give AVANT prompt written notice of such restriction, which notice shall satisfy the sixty-day payment deadline described in Section 5.2. DVC shall pay any amounts due AVANT through whatever lawful methods AVANT reasonably designates; provided, however, that if AVANT fails to designate such payment method within thirty (30) days after AVANT is notified of the restriction, DVC may deposit such payment in local currency to the credit of AVANT in a recognized banking institution selected by DVC and identified by written notice to AVANT, and such deposit shall fulfill all obligations of DVC to AVANT with respect to such payment.

5.5. RECORDS. DVC shall maintain, and shall cause its Affiliates and Sublicensees to maintain, complete and accurate records of Licensed Products that are made, used, or sold, under this Agreement and any amounts payable to AVANT in relation to such Licensed Products, which records shall contain sufficient information to permit AVANT to confirm the accuracy of any reports delivered to AVANT under Section 5.2. The relevant party shall retain such records relating to a given Royalty Period for at least three (3) years after the conclusion of that Royalty Period, during which time AVANT shall have the right, at its expense, to cause its internal accountants or an independent, certified public accountant to inspect such records during normal business hours for the sole purpose of verifying any reports and payments delivered under this Agreement. Such accountant shall not disclose to AVANT any information other than information relating to accuracy of reports and payments delivered under this Agreement. The parties shall reconcile any underpayment or overpayment within thirty (30) days after the accountant delivers the results of the audit. In the event that any audit performed under this Section reveals an underpayment in excess of five percent (5%) in any Royalty Period, DVC shall bear the full cost of such audit. AVANT may exercise its rights under this Section only once every year and only with reasonable prior notice to DVC.

5.6. LATE PAYMENTS. Any payments by DVC that are not paid on or before the date such payments are due under this Agreement shall bear interest, to the extent permitted by law, at two percentage points above the Prime Rate of interest as reported in the WALL STREET JOURNAL on the date payment is due, with

interest calculated based on the number of days that payment is delinquent.

5.7. METHOD OF PAYMENT. All payments under this Agreement should be made in the name of the "AVANT Immunotherapeutics, Inc." and sent to the address identified below. Each

payment should reference this Agreement and identify the obligation under this Agreement that the payment satisfies.

5.8. WITHHOLDING AND SIMILAR TAXES. Royalty payments and other payments due to AVANT under this Agreement shall not be reduced by reason of any withholding or similar taxes applicable to such payments to AVANT.

6. PATENTS AND INFRINGEMENT.

6.1. RESPONSIBILITY FOR AVANT PATENT RIGHTS. AVANT shall have primary responsibility for the preparation, filing, prosecution, and maintenance of all AVANT Patent Rights, using patent counsel reasonably acceptable to DVC. DVC shall reimburse AVANT for all reasonable patent-related expenses incurred by AVANT in accordance with Section 6.4. below. AVANT shall consult with DVC as to the preparation, filing, prosecution, and maintenance of all such Patent Rights reasonably prior to any deadline or action with the U.S. Patent & Trademark Office or any foreign patent office and shall furnish DVC with copies of all relevant documents reasonably in advance of such consultation.

6.2. RESPONSIBILITY FOR JOINT PATENT RIGHTS. DVC shall have primary responsibility, at its expense, for the preparation, filing, prosecution, and maintenance of all Joint Patent Rights, using patent counsel reasonably acceptable to AVANT. DVC shall consult with AVANT as to the preparation, filing, prosecution, and maintenance of all such Patent Rights reasonably prior to any deadline or action with the U.S. Patent & Trademark Office or any foreign patent office and shall furnish AVANT with copies of all relevant documents reasonably in advance of such consultation.

6.3. COOPERATION. AVANT and DVC shall cooperate fully in the preparation, filing, prosecution, and maintenance of all Patent Rights. Such cooperation includes, without limitation, (i) promptly executing all papers and instruments or requiring employees of AVANT or DVC to execute such papers and instruments as reasonable and appropriate so as to enable AVANT or DVC to file, prosecute, and maintain such Patent Rights in any country; and (ii) promptly informing the other party of matters that may affect the preparation, filing, prosecution, or maintenance of any such Patent Rights (such as becoming aware of an additional inventor who is not listed as an inventor in a patent application).

6.4. PAYMENT OF EXPENSES. Within thirty (30) days after AVANT invoices DVC, DVC shall reimburse AVANT for all reasonable patent-related expenses incurred by AVANT pursuant to Section 6.1., up to a maximum of ***Confidential Treatment Requested as to this Information*** for United States patent expenses. In the event AVANT incurs patent expenses in excess of ***Confidential Treatment Requested as to this Information*** incurs foreign patent expenses, AVANT shall notify DVC, and DVC shall in turn notify AVANT as to whether DVC shall reimburse AVANT for such expenses. DVC may elect, upon sixty (60) days written notice to AVANT, to cease payment of the expenses associated with obtaining or maintaining patent protection for one or more Patent Rights in one or more countries. In such event, DVC's rights under this Agreement with respect to such Patent Rights in such countries shall become non-exclusive.

6.5. ABANDONMENT. In the event that a party desires to abandon any patent or patent application within the Patent Rights for which it has primary responsibility, such party shall provide the other party with reasonable prior written notice of such intended abandonment or decline of responsibility, and the other party shall have the right, at its expense, to prepare, file, prosecute, and maintain the relevant Patent Rights.

6.6. INFRINGEMENT.

(a) NOTIFICATION OF INFRINGEMENT. Each party agrees to provide written notice to the other party promptly after becoming aware of any infringement of the Patent Rights.

(b) DVC RIGHT TO PROSECUTE. So long as DVC remains the only licensee of the Patent Rights and Biological Materials in the Field, DVC shall have the right, under its own control and at its own expense, to prosecute any third party infringement of the Patent Rights in the Field. Prior to commencing any

such action, DVC shall consult with AVANT and shall consider the views of AVANT regarding the advisability of the proposed action and its effect on the public interest. DVC shall not enter into any settlement, consent judgment, or other voluntary final disposition of any infringement action under this Subsection without the prior written consent of AVANT, which consent shall not be unreasonably withheld or delayed. Any recovery obtained in an action under this Subsection shall be distributed as follows: (i) each party shall be reimbursed for any expenses incurred in the action, and (ii) as to damages, DVC shall receive seventy five percent (75%) and AVANT shall receive twenty five percent (25%).

(c) AVANT RIGHT TO PROSECUTE. In the event that DVC fails to initiate an infringement action within a reasonable time after it first becomes aware of the basis for such action, or to answer a declaratory judgment action within a reasonable time after such action is filed, AVANT shall have the right to prosecute such infringement or answer such declaratory judgment action, under its sole control and at its sole expense, and any recovery obtained shall be given to AVANT.

(d) COOPERATION. Each party agrees to cooperate fully in any action under this Section 6.6. which is controlled by the other party, provided that the controlling party reimburses the cooperating party promptly for any costs and expenses incurred by the cooperating party in connection with providing such assistance.

7. CONFIDENTIAL INFORMATION; PUBLICATIONS; PUBLICITY.

7.1. CONFIDENTIAL INFORMATION.

(a) DESIGNATION. Confidential Information that is disclosed in writing shall be marked with a legend indicating its confidential status (such as "Confidential" or "Proprietary"). Confidential Information that is disclosed orally or visually shall be documented in a written notice prepared by the Disclosing Party and delivered to the Receiving Party within thirty (30) days of the date of disclosure; such notice shall summarize the Confidential Information disclosed to the Receiving Party and reference the time and place of disclosure.

(b) OBLIGATIONS. For a period of five (5) years after disclosure of any portion of Confidential Information, the Receiving Party shall (i) maintain such Confidential Information in strict confidence, except that the Receiving Party may disclose or permit the disclosure of any Confidential Information to its directors, officers, employees, consultants, and advisors who are obligated to maintain the confidential nature of such Confidential Information and who need to know such Confidential Information for the purposes of this Agreement; (ii) use such Confidential Information solely for the purposes of this Agreement; and (iii) allow its directors, officers, employees, consultants, and advisors to reproduce the Confidential Information only to the extent necessary for the purposes of this Agreement, with all such reproductions being considered Confidential Information.

(c) EXCEPTIONS. The obligations of the Receiving Party under Subsection 7.1.(b) above shall not apply to the extent that the Receiving Party can demonstrate that certain Confidential Information (i) was in the public domain prior to the time of its disclosure under this Agreement; (ii) entered the public domain after the time of its disclosure under this Agreement through means other than an unauthorized disclosure resulting from an act or omission by the Receiving Party; (iii) was independently developed or discovered by the Receiving Party without use of the Confidential Information; (iv) is or was disclosed to the Receiving Party at any time, whether prior to or after the time of its disclosure under this Agreement, by a third party having no fiduciary relationship with the Disclosing Party and having no obligation of confidentiality with respect to such Confidential Information; or (v) is required to be disclosed to comply with applicable laws or regulations, or with a court or administrative order, provided that the Disclosing Party receives reasonable prior written notice of such disclosure and the Receiving Party cooperates in legal efforts to limit such disclosure.

(d) OWNERSHIP AND RETURN. The Receiving Party acknowledges that the Disclosing Party (or any third party entrusting its own information to the Disclosing Party) claims ownership of its Confidential Information in the possession of the Receiving Party. Upon the expiration or termination of this Agreement, and at the request of the Disclosing Party, the Receiving Party shall return to the Disclosing Party all originals, copies, and summaries of documents, materials, and other tangible manifestations of Confidential Information in the possession or control of the Receiving Party, except that the Receiving Party may retain one copy of the Confidential Information in the possession of its legal counsel solely for the purpose of monitoring its obligations under this Agreement.

7.2. PUBLICATIONS. AVANT and its employees will be free to publicly disclose (through journals, lectures, or otherwise) the results of any research in the Field or relating to the subject matter of the Patent Rights.

7.3. PUBLICITY RESTRICTIONS. DVC shall not use the name of AVANT or any of its directors, officers, employees, or agents, or any adaptation of such names, or any terms of this Agreement in any promotional material or other public announcement or disclosure without the prior written consent of AVANT. The foregoing notwithstanding, DVC shall have the right to disclose such information without the consent of AVANT in any prospectus, offering memorandum, or other document or filing required by applicable securities laws or other applicable law or regulation, provided that DVC shall have given AVANT at least ten (10) days

prior written notice of the proposed text for the purpose of giving AVANT the opportunity to comment on such text.

8. TERM AND TERMINATION.

8.1. TERM. This Agreement shall commence on the Effective Date and shall remain in effect until (i) the expiration of all issued patents within the Patent Rights or (ii) for a period of twenty (20) years after the Effective Date if no such patents have issued within that twenty-year period, unless earlier terminated in accordance with the provisions of this Agreement.

8.2. VOLUNTARY TERMINATION BY DVC. DVC shall have the right to terminate this Agreement, for any reason, upon ninety (90) days prior written notice to AVANT. In the event that DVC terminates this Agreement under this Section 8.2., DVC shall (i) return all rights under this Agreement to AVANT; (ii) give AVANT manufacturing materials and manufacturing, regulatory and clinical documents and information relating to Licensed Products, along with rights, without further obligation to DVC, for AVANT to use such materials, documents and information for development, manufacture, use and sale of anthrax vaccines; and (iii) pay AVANT any license maintenance fees and any milestone payments due to AVANT under Sections 4.2. and 4.3. of this Agreement.

8.3. TERMINATION FOR DEFAULT. In the event that either party commits a material breach of its obligations under this Agreement and fails to cure that breach within sixty (60) days after receiving written notice thereof, the other party may initiate executive discussions regarding resolution of the breach. If these good-faith discussions fail to yield a resolution of the breach within another sixty (60) day period, the other party may terminate this Agreement upon written notice to the party in breach.

8.4. FORCE MAJEURE. Neither party will be responsible for delays resulting from causes beyond the reasonable control of such party, including without limitation fire, explosion, flood, war, strike, or riot, provided that the nonperforming party uses commercially reasonable efforts to avoid or remove such causes of nonperformance and continues performance under this Agreement with reasonable dispatch whenever such causes are removed.

8.5. EFFECT OF TERMINATION. The following provisions shall survive the expiration or termination of this Agreement: Articles 1 and 9; Sections 3.2., 3.5., 5.2. (obligation to provide final report and payment), 5.5., 6.4., 7.1., 7.3., 8.5., and 10.9. Upon the early termination of this Agreement, DVC and its Affiliates and Sublicensees may complete and sell any work-in-progress and inventory of Licensed Products that exist as of the effective date of termination, provided that (i) DVC is current in payment of all amounts due AVANT under this Agreement, (ii) DVC pays AVANT the applicable royalty on such sales of Licensed Products in accordance with the terms and conditions of this Agreement, and (iii) DVC and its Affiliates and Sublicensees shall complete and sell all work-in-progress and inventory of Licensed Products within six (6) months after the effective date of termination. Upon the early termination of this Agreement, except to the extent necessary to fulfill the provisions of the preceding sentence, DVC and its Affiliates and Sublicensees shall stop using all Biological Materials and return all Biological Materials to AVANT.

9. DISPUTE RESOLUTION.

9.1. PROCEDURES MANDATORY. The parties agree that any dispute arising out of or relating to this Agreement shall be resolved solely by means of the procedures set forth in this Article, and that such procedures constitute legally binding obligations that are an essential provision of this Agreement; provided, however, that all procedures and deadlines specified in this Article

may be modified by written agreement of the parties. If either party fails to observe the procedures of this Article, as modified by their written agreement, the other party may bring an action for specific performance in any court of competent jurisdiction.

9.2. DISPUTE RESOLUTION PROCEDURES.

(a) NEGOTIATION. In the event of any dispute arising out of or relating to this Agreement, the affected party shall notify the other party, and the parties shall attempt in good faith to resolve the matter within ten (10) days after the date of such notice (the "Notice Date"). Any disputes not resolved by good faith discussions shall be referred to senior executives of each party, who shall meet at a mutually acceptable time and location within thirty (30) days after the Notice Date and attempt to negotiate a settlement.

(b) MEDIATION. If the matter remains unresolved within sixty (60) days after the Notice Date, or if the senior executives fail to meet within thirty (30) days after the Notice Date, either party may initiate mediation upon written notice to the other party, whereupon both parties shall be obligated to engage in a mediation proceeding under the then current Center for Public Resources ("CPR") Model Procedure for Mediation of Business Disputes, except that specific provisions of this Section shall override inconsistent provisions of the CPR Model Procedure. The mediator will be selected from the CPR Panels of Neutrals. If the parties cannot agree upon the selection of a mediator within ninety (90) days after the Notice Date, then upon the request of either party, the CPR shall appoint the mediator. The parties shall attempt to resolve the dispute through mediation until one of the following occurs: (i) the parties reach a written settlement; (ii) the mediator notifies the parties in writing that they have reached an impasse; (iii) the parties agree in writing that they have reached an impasse; or (iv) the parties have not reached a settlement within one hundred and twenty (120) days after the Notice Date.

(c) TRIAL WITHOUT JURY. If the parties fail to resolve the dispute through mediation, or if neither party elects to initiate mediation, each party shall have the right to pursue any other remedies legally available to resolve the dispute, provided, however, that the parties expressly waive any right to a jury trial in any legal proceeding under this Section.

9.3. PRESERVATION OF RIGHTS PENDING RESOLUTION.

(a) PERFORMANCE TO CONTINUE. Each party shall continue to perform its obligations under this Agreement pending final resolution of any dispute arising out or relating to this Agreement; provided, however, that a party may suspend performance of its obligations during any period in which the other party fails or refuses to perform its obligations.

(b) PROVISIONAL REMEDIES. Although the procedures specified in this Article are the sole and exclusive procedures for the resolution of disputes arising out of relating to this Agreement, either party may seek a preliminary injunction or other provisional equitable relief if, in its reasonable judgment, such action is necessary to avoid irreparable harm to itself or to preserve its rights under this Agreement.

(c) STATUTE OF LIMITATIONS. The parties agree that all applicable statutes of limitation and time-based defenses (such as estoppel and laches) shall be tolled while the procedures set forth in Subsections 9.2.(a) and 9.2(b) are pending. The parties shall take any actions necessary to effectuate this result.

10. MISCELLANEOUS.

10.1. REPRESENTATIONS AND WARRANTIES. AVANT represents and warrants that its employees have assigned to AVANT their entire right, title, and interest in the Patent Rights and that it has authority to grant the rights and licenses set forth in this Agreement. AVANT MAKES NO OTHER WARRANTIES CONCERNING THE PATENT RIGHTS, RELATED TECHNOLOGY, AND BIOLOGICAL MATERIALS, INCLUDING WITHOUT LIMITATION ANY EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Specifically, AVANT makes no warranty or representation (i) regarding the validity or scope of the Patent Rights, (ii) that the exploitation the Patent Rights or any Licensed Product will not infringe any patents or other intellectual property rights of a third party, and (iii) that any third party is not currently infringing or will not infringe the Patent Rights.

10.2. COUNTERPARTS. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, and all of which together shall be deemed to be one and the same instrument.

10.3. HEADINGS. All headings are for convenience only and shall not affect

the meaning of any provision of this Agreement.

10.4. BINDING EFFECT. This Agreement shall be binding upon and inure to the benefit of the parties and their respective permitted successors and assigns.

10.5. ASSIGNMENT. This Agreement may not be assigned by either party without the prior written consent of the other party, except that either party may assign this Agreement to an Affiliate or to a successor in connection with the merger, consolidation, or sale of all or substantially all of its assets or that portion of its business to which this Agreement relates.

10.6. AMENDMENT AND WAIVER. This Agreement may be amended, supplemented, or otherwise modified only by means of a written instrument signed by both parties. Any waiver of any rights or failure to act in a specific instance shall relate only to such instance and shall not be construed as an agreement to waive any rights or fail to act in any other instance, whether or not similar.

10.7. GOVERNING LAW. This Agreement shall be governed by and construed in accordance with the laws of the State of Delaware irrespective of any conflicts of law principles.

10.8. NOTICE. Any notices required or permitted under this Agreement shall be in writing, shall specifically refer to this Agreement, and shall be sent by hand, recognized national overnight courier, confirmed facsimile transmission, confirmed electronic mail, or registered or certified mail, postage prepaid, return receipt requested, to the following addresses or facsimile numbers of the parties:

If to AVANT:

Una S. Ryan, Ph.D.
President and CEO
AVANT Immunotherapeutics, Inc.
119 Fourth Avenue
Needham, MA 02494

Tel: (781) 433-0771
Fax: (781) 433-0262

If to DVC:

Scott Stewart
Senior Director of Contracts
DynPort Vaccine Company LLC
60 Thomas Johnson Drive
Frederick, MD 21702

Tel: (301) 607-5000
Fax: (301) 607-5099

All notices under this Agreement shall be deemed effective upon receipt. A party may change its contact information immediately upon written notice to the other party in the manner provided in this Section.

10.11. SEVERABILITY. In the event that any provision of this Agreement shall be held invalid or unenforceable for any reason, such invalidity or unenforceability shall not affect any other provision of this Agreement, and the parties shall negotiate in good faith to modify the Agreement to preserve (to the extent possible) their original intent. If the parties fail to reach a modified agreement within sixty (60) days after the relevant provision is held invalid or unenforceable, then the dispute shall be resolved in accordance with the procedures set forth in Article 9. While the dispute is pending resolution, this Agreement shall be construed as if such provision were deleted by agreement of the parties.

10.12. ENTIRE AGREEMENT. This Agreement constitutes the entire agreement between the parties with respect to its subject matter and supersedes all prior agreements or understandings between the parties relating to its subject matter.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives as of the date first written above.

AVANT IMMUNOTHERAPEUTICS, INC.	DYNPORT VACCINE COMPANY LLC
By: /s/ Una S. Ryan	By: /s/ Scott K. Stewart

Name: Una S. Ryan, Ph.D.	Name: Scott K. Stewart
Title: President and CEO	Title: Senior Director of Contracts

EXHIBIT A

LIST OF PATENT RIGHTS AND BIOLOGICAL MATERIALS

PATENT RIGHTS

Confidential Treatment Requested as to this Information

BIOLOGICAL MATERIALS

Confidential Treatment Requested as to this Information

FIRST AMENDMENT
TO THE
AVANT IMMUNOTHERAPEUTICS, INC.
1999 STOCK OPTION AND INCENTIVE PLAN

This First Amendment to the AVANT Immunotherapeutics, Inc. 1999 Stock Option and Incentive Plan (the "Plan") shall become effective upon approval by the holders of a majority of the votes cast at a meeting of stockholders at which a quorum is present.

1. STOCK ISSUABLE UNDER THE PLAN. The Plan is hereby amended by increasing the maximum number of shares of Common Stock, par value $.001 per share, of AVANT Immunotherapeutics, Inc. reserved and available for issuance under the Plan by 1,500,000 shares, from 2,000,000 shares to 3,500,000 shares.

2. STATUS OF PLAN. Except as specifically amended hereby, the Plan shall continue in full force and effect. From and after the date hereof, all references in any agreements covering awards granted under the Plan shall be deemed to be references to the Plan as hereby amended.

AVANT IMMUNOTHERAPEUTICS, INC.

BY: /s/ Una S. Ryan

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, 33-80048 and 333-62017) and the Registration Statements on Forms S-3 (File Nos. 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 7, 2002 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, 2001.

PricewaterhouseCoopers LLP

Boston, Massachusetts
March 26, 2002