FILED PURSUANT TO RULE 424(B)(2)
REGISTRATION STATEMENT NO. 333-64704

PROSPECTUS SUPPLEMENT TO PROSPECTUS DATED JULY 20, 2001

PROSPECTUS
AVANT IMMUNOTHERAPEUTICS, INC.

3,057,905 Shares of Common Stock

UNLESS THE CONTEXT OTHERWISE REQUIRES, ALL REFERENCES TO "WE," "US," OR "OUR" IN THIS PROSPECTUS SUPPLEMENT REFER TO AVANT IMMUNOTHERAPEUTICS, INC. (F/K/A T-CELL SCIENCES, INC.), A DELAWARE CORPORATION.

This Prospectus Supplement and the attached Prospectus relate to the offering and sale of 3,057,905 shares of our common stock, par value $.001 per share, to a number of institutional investors resulting in our receipt of gross proceeds of approximately $14 million. In connection with this offering, we have agreed to pay a fee equal to 4% of the gross proceeds from this offering to Ladenburg Thalmann & Co. Inc. for its services as placement agent.

Our common stock is listed on the Nasdaq National Market (the "NASDAQ") under the symbol "AVAN." On October 16, 2001, the reported last sale price of our common stock on the NASDAQ was $4.10 per share. As of October 16, after giving effect to this offering there are 60,448,542 shares of our common stock issued and outstanding.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR PASSED UPON THE ADEQUACY OR ACCURACY OF THIS PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

THIS PROSPECTUS SUPPLEMENT IS NOT COMPLETE WITHOUT THE PROSPECTUS DATED JULY 20, 2001 AND WE HAVE NOT AUTHORIZED ANYONE TO DELIVER OR USE THIS PROSPECTUS SUPPLEMENT WITHOUT THE PROSPECTUS.

The date of this Prospectus Supplement is October 17, 2001

THE COMPANY

"SAFE HARBOR" STATEMENT UNDER THE PRIVATE SECURITIES LITIGATION REFORM ACT OF 1995: THIS PROSPECTUS, INCLUDING THE INFORMATION INCORPORATED BY REFERENCE HEREIN, CONTAINS FORWARD-LOOKING STATEMENTS WITHIN THE MEANING OF SECTION 27A OF THE SECURITIES ACT OF 1933 AND SECTION 21E OF THE SECURITIES EXCHANGE ACT OF 1934 WHICH REFLECT OUR CURRENT VIEWS WITH RESPECT TO FUTURE EVENTS AND FINANCIAL PERFORMANCE. THE WORDS "BELIEVE," "EXPECT," "ANTICIPATE," AND SIMILAR EXPRESSIONS IDENTIFY FORWARD-LOOKING STATEMENTS. INVESTORS SHOULD NOT RELY ON FORWARD-LOOKING STATEMENTS BECAUSE THEY ARE SUBJECT TO A VARIETY OF RISKS, UNCERTAINTIES, AND OTHER FACTORS THAT COULD CAUSE ACTUAL RESULTS TO DIFFER MATERIALLY FROM THOSE EXPRESSED IN ANY SUCH FORWARD-LOOKING STATEMENTS, INCLUDING THOSE MENTIONED UNDER THE HEADING "RISK FACTORS" IN THE ATTACHED PROSPECTUS AND THOSE DETAILED FROM TIME TO TIME IN OUR FILINGS WITH THE SECURITIES AND EXCHANGE COMMISSION WHICH ARE INCORPORATED HEREIN BY REFERENCE. THESE FACTORS INCLUDE, BUT ARE NOT LIMITED TO:

- THE ABILITY TO SUCCESSFULLY COMPLETE DEVELOPMENT AND COMMERCIALIZATION OF PRODUCTS, INCLUDING THE COST, TIMING, SCOPE AND RESULTS OF PRE-CLINICAL AND CLINICAL TESTING;

- THE ABILITY TO SUCCESSFULLY COMPLETE PRODUCT RESEARCH AND FURTHER DEVELOPMENT, INCLUDING ANIMAL, PRE-CLINICAL AND CLINICAL STUDIES;

- OUR ABILITY TO MANAGE MULTIPLE LATE STAGE CLINICAL TRIALS FOR A VARIETY OF PRODUCT CANDIDATES;

- THE VOLUME AND PROFITABILITY OF PRODUCT SALES OF MEGAN-REGISTERED TRADEMARK-VAC 1 AND OTHER FUTURE PRODUCTS;

- CHANGES IN EXISTING AND POTENTIAL RELATIONSHIPS WITH CORPORATE COLLABORATORS;

- THE COST, DELIVERY AND QUALITY OF CLINICAL AND COMMERCIAL GRADE MATERIALS SUPPLIED BY CONTRACT MANUFACTURERS;

- THE TIMING, COST AND UNCERTAINTY OF OBTAINING REGULATORY APPROVALS;

- THE ABILITY TO OBTAIN SUBSTANTIAL ADDITIONAL FUNDING;

- THE ABILITY TO ATTRACT MANUFACTURING, SALES, DISTRIBUTION AND MARKETING PARTNERS AND OTHER STRATEGIC ALLIANCES;

- THE ABILITY TO DEVELOP AND COMMERCIALIZE PRODUCTS BEFORE COMPETITORS;

- THE INTEGRATION OF MEGAN HEALTH, INC.'S BUSINESS AND PROGRAMS; AND

- THE ABILITY TO RETAIN CERTAIN MEMBERS OF MANAGEMENT.

GENERAL

We are a biopharmaceutical company engaged in the discovery, development and commercialization of products that harness the human immune response to prevent and treat disease. We are building our own business franchises in three areas. The first of these areas is in cardiac surgery where we focus on compounds with the potential to inhibit inappropriate activation of the complement cascade, a vital part of the body's immune defense system. Secondly, we are developing a portfolio of oral vaccines aimed at protecting people traveling to areas where these diseases are endemic. Thirdly, we are conducting clinical investigations with a proprietary therapeutic vaccine for the management of cholesterol. Additionally, through our corporate collaborations, we are developing a variety of infectious disease vaccines, including an oral human rotavirus vaccine.

RECENT DEVELOPMENTS

CLINICAL DEVELOPMENT

COMPLEMENT INHIBITORS: We are conducting two Phase IIb studies of TP10 in pediatric cardiac surgery utilizing cardiopulmonary bypass. The first study, begun earlier this year, is in babies born with hypoplastic left heart syndrome who often have high morbidity and mortality after heart surgery. The second study in the pediatric cardiac surgery setting investigates the use of TP10 in a lower risk infant population. The objective of these studies is to assess the ability of TP10 to mitigate the injury to the

heart, brain and other organs that occurs when patients are placed on cardiopulmonary bypass circuits, thus potentially improving post-operative outcomes.

On September 27, 2001, we announced the FDA had removed a clinical hold on the enrollment of new patients in our two Phase IIb studies of TP10 in infants undergoing cardiac surgery and said the company expected to resume enrollment as soon as possible. We had initially announced suspension of enrollment in the clinical studies on August 1, 2001, following our receipt from the Data Safety Monitoring Board (DSMB) of a request for additional detailed information from these studies, including patient records for reported serious adverse events. While the DSMB met, reviewed the information requested and unanimously recommended patient enrollment be resumed with the addition of new laboratory tests in the study protocol, the FDA placed the pediatric programs on clinical hold pending their review of the same data. Both trials are placebo-controlled studies, one in babies born with hypoplastic left heart syndrome, who often have high morbidity and mortality after heart surgery, and the second in a lower risk population of infants undergoing cardiac surgery.

We are actively enrolling a placebo-controlled Phase II trial of TP10 in approximately 600 adult patients undergoing cardiac surgery utilizing cardiopulmonary bypass. We expect to release preliminary data from the adult trial around year-end 2001. The objective of this study, as well as the two infant cardiac by-pass trials, is to assess the ability of TP10 to mitigate the injury to the heart, brain and other organs that occurs when patients are placed on cardiopulmonary bypass circuits, thus potentially improving post-operative outcomes. We may partner the cardiac surgery program when additional clinical data become available.

CHOLESTEROL TREATMENT VACCINE: In February 2001, we announced preliminary results from a double-blinded placebo controlled extension of the earlier completed Phase I trial of our cholesteryl ester transfer protein vaccine (CETi-1) in 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 (high density lipoprotein) cholesterol. Results from the extension study showed measurable antibody titers in all dose groups treated with study medication, suggesting a dose-response relationship. In August 2001, we initiated a placebo controlled, Phase II study of our CETi-1 vaccine 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 principal endpoint is the change in HDL cholesterol measured after the six-month booster. The study is being conducted at the Chicago Center for Clinical Research and Rush-Presbyterian-St. Luke's Medical Center. As clinical data become available, we plan to seek a corporate partner to complete development and to commercialize the vaccine.

CHOLERA VACCINE: During the second quarter, we announced results from this Phase IIb human challenge study of our single dose, oral cholera vaccine, Peru-15. Peru-15 showed 100% protection against moderate and severe diarrhea and 93% protection against any diarrhea. The study results suggest that, if confirmed by further investigation, Peru-15 may be an excellent candidate as a potential single dose, oral vaccine for travelers going to areas where cholera is endemic. We also announced a manufacturing agreement with Bio Sidus S.A. of Buenos Aires, Argentina for the production of commercial quantities of Peru-15. We are moving rapidly to complete the manufacture of cGMP grade material this year and plan to initiate pivotal trials in the first half of 2002. Development of a safe, effective cholera vaccine is the first step in establishing our travelers' vaccine franchise.

ROTAVIRUS VACCINE: During the next twelve months, we expect GlaxoSmithKline plc ("Glaxo") to initiate Phase III safety and efficacy studies of Rotarix-TM-. This product is a two dose oral rotavirus vaccine that has been shown to be helpful in preventing rotavirus gastroenteritis (RGE) in young children for at least two years following the vaccine's administration. The design, timing and execution of the clinical program for Rotarix-TM- is the responsibility of Glaxo.

TECHNOLOGY LICENSING

We have adopted a business strategy of out-licensing technology that does not match our development focus or in cases where we lack sufficient resources for the technology's efficient development. For example, when we acquired Megan Health Inc. we 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 our own focus on human health care.

DYNPORT LICENSE: On October 10, 2001, we announced the signing of a license agreement with DynPort Vaccine Company LLC ("DVC") for exclusive rights to use certain components of our vaccine technology. Financial terms of the agreement with DVC include license fees, milestone payments and royalties. DVC, a private company, is chartered with providing an integrated approach for the advanced development of specific vaccines and other products to protect against the threat of biological warfare agents. 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 leverage our vaccine technology into another research area that we do not plan to pursue ourselves.

FORMATION OF PARALLEL SOLUTIONS: During October 2001, we also spun out our polyphosphazenes/polymer adjuvant business (the "PCPP business"), including Adjumer-Registered Trademark- and Micromer-Registered Trademark-, into a newly formed, privately held company, Parallel Solutions, Inc. ("Parallel"). We have retained a non-controlling minority ownership position in Parallel. We believe 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 us to further leverage this technology with the potential for significant upside benefits as a shareholder of Parallel, while divesting our obligations for manufacturing PCPP and the burden of funding the PCPP business. In connection with this transaction, we have assigned all of our rights and obligations under the Aventis Pasteur license agreements to Parallel.

PLAN OF DISTRIBUTION

We will sell the shares of common stock offered hereby directly to institutional investors. In connection with the sale of the shares of common stock offered hereby, Ladenburg Thalmann & Co. Inc. will be paid a fee of 4% of the gross proceeds from the sale of shares for its services as placement agent, except that a reduced placement fee of 2% will be payable with respect to shares sold to investors who were already our shareholders prior to this offering.

PROSPECTUS

AVANT IMMUNOTHERAPEUTICS, INC.

10,000,000 SHARES OF COMMON STOCK

WARRANTS TO PURCHASE 1,000,000 SHARES OF COMMON STOCK

- This prospectus will allow us to issue, from time to time in one or

more offerings,

- (1) up to 10,000,000 shares of our common stock,

- (2) warrants to purchase up to 1,000,000 shares of our common stock, and

- (3) the rights to acquire our series C-1 junior participating cumulative preferred stock that are attached to, and trade with, the common stock.

- The common stock and warrants may be offered and sold separately or together in one or more series of issuances.

- In this prospectus, we refer to the common stock and the warrants collectively as the "securities."

Each time we sell securities we will provide a prospectus supplement that will contain specific information about the terms of that sale and may add, update or change the information contained in this prospectus. You should read this prospectus and any prospectus supplement carefully before you invest in our securities.

Our common stock is listed on the Nasdaq National Market under the symbol "AVAN."

SEE "RISK FACTORS" BEGINNING ON PAGE 1 FOR A DISCUSSION OF MATERIAL RISKS THAT YOU SHOULD CONSIDER BEFORE YOU INVEST IN OUR SECURITIES.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is July 20, 2001

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or the SEC, utilizing a "shelf" registration process. Under this shelf registration process, we may offer from time to time up to 10,000,000 shares of our common stock and warrants to purchase up to 1,000,000 shares of our common stock, either separately or in units. This prospectus provides you with a general description of the securities we may offer. Each time we sell securities, we will provide a prospectus supplement that will contain specific information about the terms of that offering. The prospectus supplement may also add, update or change information contained in this prospectus. You should read both this prospectus and any prospectus supplement together with additional information described under the heading "Where You Can Find More Information."

We have not authorized any dealer, salesperson or other person to give any information or to make any representation other than those contained or incorporated by reference in this prospectus and any accompanying prospectus supplement. You must not rely upon any information or representation not contained or incorporated by reference in this prospectus or any accompanying prospectus supplement as if we had authorized it. This prospectus and any accompanying prospectus supplement do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the registered securities to which they relate, nor does this prospectus and any accompanying prospectus supplement constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction. You should not assume that the information contained in this prospectus and any accompanying prospectus supplement is correct on any date after their respective dates, even though this prospectus or any prospectus supplement is delivered or securities are sold on a later date.

RISK FACTORS

Before you decide whether to purchase any of our securities, in addition to the other information in this prospectus, you should carefully consider the risk factors set forth under the heading "Risk Factors" in the section entitled "Business" in our most recent Annual Report on Form 10-K, which is incorporated by reference into this prospectus, as the same may be updated from time to time by our future filings under the Securities Exchange Act. Additional risks and uncertainties that are not yet identified or that we think are immaterial may also materially harm our business, operating results and financial condition and could result in a complete loss of your investment. For more information, see the section entitled "Incorporation of Documents by Reference."

ABOUT AVANT

We are a biopharmaceutical company that uses novel applications of immunology to prevent and treat diseases that arise internally, including autoimmune diseases, cardiovascular diseases, cancer and inflammation, as well as those diseases that are triggered by external conditions, including infectious diseases and organ transplant rejection. Our products address large market opportunities for which current therapies are inadequate or non-existent.

We are developing our products using a broad set of technologies that work together to regulate the body's complement system, regulate T and B cell activity, and enable us and others to create and deliver vaccines that prevent and treat some diseases. We are using these technologies to develop both vaccines and immunotherapeutics that prevent or treat disease caused by infectious organisms and drugs and vaccines that modify undesirable activity of the body's own proteins or cells. Our products are in various stages of research and development.

Our common stock has been quoted on the Nasdaq National Market under the symbol "AVAN" since August 24, 1998. Prior to that time, our common stock traded on the Nasdaq National Market, beginning May 15, 1986, under the symbol "TCS."

Our executive offices are located at 119 Fourth Avenue, Needham, Massachusetts 02494-2725 and our telephone number is (781) 433-0771. Additional information regarding our company, including our audited financial statements and descriptions of our business, is contained in the documents incorporated by reference in this prospectus. See "Where You Can Find More Information" on page 7 and "Incorporation of Documents by Reference" on page 7.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus includes or incorporates by reference "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. When we use the words "may," "will," "should," "anticipate," "assume," "believe," "estimate," "expect," "intend" and other similar expressions, they generally identify forward-looking statements. Forward-looking statements include, for example, statements relating to development activities, business strategy and prospects, future capital expenditures, sources and availability of capital, governmental regulations and their effect on us and our competition.

You should exercise caution in interpreting and relying on forward-looking statements since they involve known and unknown risks, uncertainties and other factors which are, in some cases, beyond our control and could materially affect our actual results, performance or achievements. Important factors that could cause our actual results, performance or achievements to differ materially from the forward-looking statements we make or incorporate by reference in this prospectus are set forth under the heading "Risk Factors" in the section entitled "Business" in our most recent Annual Report on Form 10-K, as may be updated from time to time by our future filings under the Securities Exchange Act, and elsewhere in the documents incorporated by reference in this prospectus.

We caution you that, while forward looking statements reflect our good faith beliefs, they are not guarantees of future performance. In addition, we disclaim any obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.

USE OF PROCEEDS

Unless we provide otherwise in a supplement to this prospectus, we intend to use the net proceeds from the sale of our securities for one or more of the following:

- research and clinical development activities;
- working capital;
- capital expenditures;
- potential future acquisitions; and
- other general corporate purposes.

Our management will have broad discretion in the allocation of the net proceeds of any offering. Pending such uses, we intend to invest the net proceeds in short-term, investment grade, interest-bearing securities.

DESCRIPTION OF COMMON STOCK

As of the date of the prospectus, we are authorized to issue up to 100,000,000 shares of common stock, $.001 par value per share. As of July 1, 2001, 57,364,579 shares of common stock were outstanding.

DIVIDENDS

The Board of Directors may, out of funds legally available, at any regular or special meeting, declare dividends to the holders of shares of our common stock as and when they deem expedient, subject to the rights of holders of the preferred stock.

VOTING

Each share of common stock entitles the holders to one vote per share on all matters requiring a vote of the stockholders, including the election of directors. No holders of shares of common stock shall have the right to vote such shares cumulatively in any election for the Board of Directors.

RIGHTS UPON LIQUIDATION

In the event of our voluntary or involuntary liquidation, dissolution, or winding up, the holders of our common stock will be entitled to share equally in our assets available for distribution after payment in full of all debts and after the holders of preferred stock have received their liquidation preferences in full.

MISCELLANEOUS

No holders of shares of our common stock shall have any preemptive rights to subscribe for, purchase or receive any shares of any class, whether now or hereafter authorized, or any options or warrants to purchase any such shares, or any securities convertible into or exchanged for any such shares, which may at any time be issued, sold or offered for sale by us.

DESCRIPTION OF WARRANTS

We may issue warrants for the purchase of our common stock. Warrants may be issued independently or together with our common stock and may be attached to or separate from any offered securities. Each series of warrants will be issued under a separate warrant agreement to be entered into between us and a bank or trust company, as warrant agent. The warrant agent will act solely as our agent in connection with the warrants and will not have any obligation or relationship of agency or trust for or with any holders or beneficial owners of warrants. This summary of some provisions of the warrants is not complete. You should refer to the warrant agreement, including the forms of warrant certificate representing the warrants, relating to the specific warrants being offered for the complete terms of the warrant agreement and the warrants. Such warrant agreement, together with the terms of warrant certificate and warrants, will be filed with the SEC in connection with the offering of the specific warrants.

The prospectus supplement relating to a particular issue of warrants to issue common stock will describe the terms of the warrants, including the following:

- the title of the warrants;
- the offering price for the warrants, if any;
- the aggregate number of the warrants;
- the designation and terms of the common stock that may be purchased upon exercise of the warrants;

- if applicable, the designation and terms of the securities that the warrants are issued with and the number of warrants issued with each security;
- if applicable, the date from and after which the warrants and any securities issued with the warrants will be separately transferable;
- the number of shares of common stock that may be purchased upon exercise of a warrant and the price at which the shares may be purchased upon exercise;
- the dates on which the right to exercise the warrants commence and expire;
- if applicable, the minimum or maximum amount of the warrants that may be exercised at any one time;
- the currency or currency units in which the offering price, if any, and the exercise price are payable;
- if applicable, a discussion of material United States federal income tax considerations;
- anti-dilution provisions of the warrants, if any;
- redemption or call provisions, if any, applicable to the warrants;
- any additional terms of the warrants, including terms, procedures and limitations relating to the exchange and exercise of the warrants; and
- any other information we think is important about the warrants.

Each warrant will entitle the holder of the warrant to purchase the number of shares of common stock at the exercise price as shall in each case be set forth in, or be determinable as set forth in, the prospectus supplement relating to the warrants offered. Warrants may be exercised at any time up to the close of business on the expiration date set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void. Prior to the exercise of any warrants to purchase common stock, holders of the warrants will not have any of the rights of holders of common stock purchasable upon exercise of the warrants, including the right to vote on the common stock.

PLAN OF DISTRIBUTION

We may sell our securities in any one or more of the following ways:

- directly to investors;
- to investors through agents;
- to dealers;
- through underwriting syndicates led by one or more managing underwriters; and
- through one or more underwriters acting alone.

Any underwritten offering may be on a best efforts or a firm commitment basis. We may also make direct sales through subscription rights distributed to our stockholders on a pro rata basis, which may or may not be transferable. In any distribution of subscription rights to stockholders, if all of the underlying securities are not subscribed for, we may then sell the unsubscribed securities directly to third parties or may engage the services of one or more underwriters, dealers or agents, including standby underwriters, to sell the unsubscribed securities to third parties.

The distribution of the securities may be effected from time to time in one or more transactions:

- at a fixed price or prices, which may be changed;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices; or
- at negotiated prices.

Any of the prices may represent a discount from the prevailing market prices.

Shares of common stock sold pursuant to the registration statement of which this prospectus is a part will be authorized for quotation and trading on the Nasdaq National Market. In the sale of the securities, underwriters or agents may receive compensation from us or from purchasers of the securities, for whom they may act as agents, in the form of discounts, concessions or commissions. Underwriters may sell the securities to or through dealers, and such dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or commissions from the purchasers for whom they may act as agents. Underwriters, dealers and agents that participate in the distribution of the securities may be deemed to be underwriters under the Securities Act of 1933, and any discounts or commissions they receive from us and any profit on the resale of securities they realize may be deemed to be underwriting discounts and commissions under the Securities Act. The applicable prospectus supplement will, where applicable:

- identify any such underwriter or agent;
- describe any compensation in the form of discounts, concessions, commissions or otherwise received from us by each such underwriter or agent and in the aggregate to all underwriters and agents;
- identify the amounts underwritten; and
- identify the nature of the underwriter's obligation to take the securities.

Until the distribution of the securities is completed, rules of the Securities and Exchange Commission may limit the ability of any underwriters and selling group members to bid for and purchase the securities. As an exception to these rules, underwriters are permitted to engage in some transactions that stabilize the price of the securities. Such transactions consist of bids or purchases for the purpose of pegging, fixing or maintaining the price of the securities.

If any underwriters create a short position in the securities in an offering in which they sell more securities than are set forth on the cover page of the applicable prospectus supplement, the underwriters may reduce that short position by purchasing the securities in the open market.

The lead underwriters may also impose a penalty bid on other underwriters and selling group members participating in an offering. This means that if the lead underwriters purchase securities in the open market to reduce the underwriters' short position or to stabilize the price of the securities, they may reclaim the amount of any selling concession from the underwriters and selling group members who sold those securities as part of the offering.

In general, purchases of a security for the purpose of stabilization or to reduce a short position could cause the price of the security to be higher than it might be in the absence of such purchases. The imposition of a penalty bid might also have an effect on the price of a security to the extent that it were to discourage resales of the security before the distribution is completed.

We do not make any representation or prediction as to the direction or magnitude of any effect that the transactions described above might have on the price of the securities. In addition, we do not make any representation that underwriters will engage in such transactions or that such transactions, once commenced, will not be discontinued without notice.

Under agreements into which we may enter, underwriters, dealers and agents who participate in the distribution of the securities may be entitled to indemnification by us against some liabilities, including liabilities under the Securities Act.

Underwriters, dealers and agents may engage in transactions with us or perform services for us in the ordinary course of business.

If indicated in the applicable prospectus supplement, we will authorize underwriters or other persons acting as our agents to solicit offers by particular institutions to purchase securities from us at the public offering price set forth in such prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on the date or dates stated in such prospectus supplement. Each delayed delivery contract will be for an amount no less than, and the aggregate principal amounts of securities sold under delayed delivery contracts shall be not less nor more than, the respective amounts stated in the applicable prospectus supplement. Institutions with which such contracts, when authorized, may be made include commercial and savings banks, insurance companies, pension funds, investment companies, educational and charitable institutions and others, but will in all cases be subject to our approval. The obligations of any purchaser under any such contract will be subject to the conditions that (a) the purchase of the securities shall not at the time of delivery be prohibited under the laws of any jurisdiction in the United States to which the purchaser is subject, and (b) if the securities are being sold to underwriters, we shall have sold to the underwriters the total principal amount of the securities less the principal amount thereof covered by the contracts. The underwriters and such other agents will not have any responsibility in respect of the validity or performance of such contracts.

To comply with applicable state securities laws, the securities offered by this prospectus will be sold, if necessary, in such jurisdictions only through registered or licensed brokers or dealers. In addition, securities may not be sold in some states unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

EXPERTS

The consolidated financial statements of AVANT Immunotherapeutics, Inc. incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2000, have been so incorporated in reliance upon the report of PricewaterhouseCoopers LLP, independent accountants, given on the authority of said firm as experts in auditing and accounting.

The financial statements of Megan Health, Inc. incorporated in this prospectus by reference to the current Form 8-K/A, have been audited by Arthur Andersen LLP, independent public accountants, as indicated in their report with respect thereto, and are incorporated herein in reliance upon the authority of said firm as experts in auditing and accounting.

LEGAL MATTERS

Certain legal matters with respect to the securities offered pursuant to this registration statement will be passed upon for us by Goodwin Procter LLP, Boston, Massachusetts. Certain legal matters may be passed upon for any agents or underwriters by counsel for such agents or underwriters identified in the applicable prospectus supplement.

WHERE YOU CAN FIND MORE INFORMATION

We must comply with the informational requirements of the Securities Exchange Act of 1934, as amended, and we are required to file reports and proxy statements and other information with the Securities and Exchange Commission. You may read and copy these reports, proxy statements and other information at the public reference facilities maintained by the Securities and Exchange Commission at Judiciary Plaza, 450 Fifth Street, N.W., Room 1024, Washington, D.C. 20549, and at the Securities and Exchange Commission's Regional Offices at 7 World Trade Center, 13th Floor, New York, New York 10048, and Citicorp Center, 500 W. Madison Street, Suite 1400, Chicago, Illinois 60661-2511. You may also obtain copies at the prescribed rates from the Public Reference Section of the Securities and Exchange Commission at its principal office in Washington, D.C. You may call the Securities and Exchange Commission at 1-800-SEC-0330 for further information about the public reference rooms. The Securities and Exchange Commission maintains a web site that contains reports, proxy and information statements and other information regarding issuers like us that file electronically with the Securities and Exchange Commission. You may access the Securities and Exchange Commission's web site at http://www.sec.gov.

This prospectus constitutes part of a registration statement on Form S-3 filed under the Securities Act with respect to the securities. As permitted by the Securities and Exchange Commission's rules, this prospectus omits some of the information, exhibits and undertakings included in the registration statement. You may read and copy the information omitted from this prospectus but contained in the registration statement, as well as the periodic reports and other information we file with the Securities and Exchange commission, at the public reference facilities maintained by the Securities and Exchange Commission in Washington, D.C., New York, New York and San Francisco, California.

Statements contained in this prospectus as to the contents of any contract or other document are not necessarily complete, and in each instance we refer you to the copy of the contract or document filed as an exhibit to the registration statement, each such statement being qualified in all respects by such reference.

INCORPORATION OF DOCUMENTS BY REFERENCE

The Securities and Exchange Commission allows us to incorporate by reference in this prospectus the information that we file with them. Incorporation by reference means that we can disclose important information to you by referring you to other documents that are legally considered to be part of this prospectus, and later information that we file with the Securities and Exchange Commission will automatically update and supersede the information in this prospectus, any supplement and the documents listed below. We incorporate by reference the specific documents listed below and any future filings made with the Securities and Exchange Commission under Section 13(a), 13(c), 14, or 15(d) of the Securities Exchange Act of 1934, as amended, until all of the shares are sold:

- our Current Report on Form 10-Q filed with the Securities and Exchange Commission on May 11, 2001;
- our Annual Report on Form 10-K for the fiscal year ended December 31, 2000, including information specifically incorporated by reference into our Form 10-K from our definitive proxy statement for our 2001 Annual Meeting of Stockholders;
- our Current Report on Form 8-K filed with the Securities and Exchange Commission on December 12, 2000, Form 8-K/A filed with the Securities and Exchange Commission on January 30, 2001 and Form 8-K/A filed with the Securities and Exchange Commission on July 3, 2001;
- the definitive Proxy Statement for our annual meeting of stockholders filed on March 28, 2000; and

- the description of the rights to purchase shares of our Series C-1 Junior Participating Cumulative Preferred Stock contained in our Registration Statement on Form 8-A, filed on November 14, 1994, including all amendments and reports updating that description.

We will furnish without charge to each person, including any beneficial owner, to whom this prospectus is delivered, upon written or oral request, a copy of any documents incorporated by reference other than exhibits to those documents. Requests should be addressed to: 119 Fourth Avenue, Needham, Massachusetts 02494, Attention: Corporate Secretary (telephone number (781) 433-0771).

You should rely only on the information incorporated by reference or provided in this prospectus. We have not authorized anyone to provide you with different information. You should not assume that the information in this prospectus or the documents incorporated by reference is accurate as of any date other than the date on the front of this prospectus or those documents.

AVANT
IMMUNOTHERAPEUTICS,
INC.

PROSPECTUS

July 20, 2001