

# Dean's Newsletter

## September 2, 2003

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### **Welcome to New Medical Students.**

For our 86 new medical students, classes began earlier this year than usual in order to accommodate to the exciting New Stanford Curriculum that begins this Fall. With Orientation complete, our new students will begin classes today – and I want to take the opportunity to welcome them and wish them wonderful success at Stanford. We are all very pleased and proud to have them as new members of our Stanford family and community.

### **State-of-the-School: 2003**

With the opening of the new academic year, I thought it would be helpful to offer a brief update on the State-of-the-School. It is an exciting time at Stanford and I hope that the comments that follow provide an update about some of the exciting things that have been going on.

#### **Our Mission:**

*To be a premier research-intensive medical school that improves health through leadership and collaborative discoveries and innovations in patient care, education and research.*

#### **Our Goals:**

- Lead the movement to reform and rejuvenate the educational and career development of biomedical innovators.
- Transform the future of biomedical, translational and clinical research, and education by fostering novel collaborative alignments between basic and clinical scientists, clinicians, and educators throughout the University, as well as with public and private partners worldwide.
- Earn the public's trust and respect as a premier medical school through outstanding patient care and academic medicine.

From *Translating Discoveries: A Strategic Plan for the Stanford University School of Medicine*

Stanford University School of Medicine is a unique and special institution that is committed to serve as a role model for the transformation of American medicine at this important juncture in history. As we begin the 21<sup>st</sup> century, we are the beneficiaries of remarkable discoveries and innovations emanating from science and technology during the past several decades. Indeed, we stand poised to rapidly expand knowledge in basic biomedical science that will lead to new insights into the etiology and pathogenesis of human disease, and that will permit us to translate discoveries to improve their diagnosis, management and prevention. Ironically, at the same time, we are also the recipients of a health care system that suffers from disparity, problems in accessibility and financial challenges that impact the very integrity of academic medical centers across our nation. Accordingly, it is essential that Stanford serve as a leader in the training of physicians and bioscientists, in discovery and innovation and in the translation of knowledge from the laboratory to the bedside in a manner that improves the health of children and adults during this time of transition.

Stanford's history has been shaped by transitions. The Stanford University School of Medicine began in 1908 when the Cooper Medical College, located in San Francisco, became part of the University. Outstanding clinical training and practice characterized the first half of its history, during which time the School's clinical programs remained in San Francisco. In 1959 the School's clinical programs moved to Palo Alto, consolidating the basic and clinical sciences and, even more importantly, aligning the School of Medicine to Stanford University. During this period, the contributions by Stanford faculty in basic research and clinical medicine have been extraordinary and far ranging. From discoveries that shaped our knowledge of DNA synthesis, spawned the revolution in genetic engineering, contributed significantly to the sequencing of the human genome and discovered the gene chip and microarray, to the first heart transplant, first heart-lung transplant, first application of the linear accelerator and the first use of monoclonal antibodies to treat human cancer, Stanford faculty have played a remarkable role in the creation and application of new knowledge to improve human health and well-being. Our mandate must be to continue this tradition of excellence and to provide a beacon of hope for the future of American medicine.

To help assure the stewardship for the School of Medicine, a comprehensive Strategic Planning process was initiated upon my arrival in April 2001. Recognizing the intricate interrelationships of our missions in education, research and patient care, our planning process was comprehensive and embraced medical and graduate student education as well as the training of postdoctoral scholars; basic and clinical research; patient care; the organization and structure of the professoriate to oversee our tripartite missions; the use of information resources and technology to shape our future programs; the role of finance and administrative services to support our programs; and the need for communication, advocacy, public policy to help engage the public trust and contribute to the philanthropic support for the School and its programs. The first phase of our efforts led to our comprehensive planning document *Translating Discoveries*, which was published at the end of 2002 and which is available at <http://medstrategicplan.stanford.edu/>.

Of course developing a strategic plan is only useful if it is implemented. I am pleased to say that during the past eighteen months, we have made considerable progress in achieving many of our initial goals and objectives, some of which have been highlighted in my bi-weekly Dean's Newsletter, which is distributed to all members of the School of Medicine community and which is available on our Web Site (<http://deansnewsletter.stanford.edu/>).

Critical planning is essential for Stanford. Among the smallest of the research-intensive schools of medicine, Stanford must critically assess and prioritize its goals and objectives and apply its resources wisely and creatively. *Translating Discoveries* provides a partial road map, providing an overall strategic direction while still valuing the creative contributions that can chart new directions, emerging from the ideas and scholarship of our faculty, students and staff.

I envision that change will continue to unfold in both expected and unrecognized areas during the next several years. Among the changes we can predict now will be the initiation of our New Stanford Curriculum for medical student education. Thanks to the close collaboration of the Dean's Office with the School's Faculty Senate, the new curriculum has been built around several guiding goals, including:

- Identifying the core knowledge and skills required for all students to permit a path for lifetime learning. A concurrent goal is to limit the amount of course-work in order to permit time for individual scholarship and research.
- Balancing the curriculum by including both clinical and basic science experiences throughout medical school training in order to assure the essential integration of basic and clinical science.
- Developing required majors ("scholarly concentrations") for all students to enhance independent research and scholarship capabilities

The scholarly concentrations (or majors) will take one of two forms: the Scholars Track (which can be done in four years) and the Original Research Track, which will require five or more years. For students beginning in the Fall of 2003, eight scholarly concentrations have been selected and will be available for entering students. These include Bioengineering; Bioethics and Medical Humanities; Biomedical Informatics; Health Services and Policy Research; Immunology; Molecular and Genetic Medicine; Public Service and Community Medicine; and Women's Health. In addition to these Scholarly Concentrations, four others are in development that also closely align to student interests and include: Clinical Research, Infectious Diseases, International Health and Neuroscience. Finally, some students will also have the opportunity to devise an individual scholarly concentration if one does not exist that meets their own personal goals and direction.

As the New Stanford Curriculum unfolds over the next years, we envision that it will help create a new cadre of physician leaders. Our specific goal is to assure that our

students not only receive outstanding clinical training but that they also acquire knowledge and skills that will permit them to help transform the face of medicine and science in the future.

In tandem with the curriculum changes that are underway for medical students, we are also placing a greater emphasis on the interdisciplinary education and research opportunities for our graduate students and postdoctoral fellows. These are themes that are very much consonant with one of the most exciting directions occurring in science and for which Stanford serves as a national leader.

In order to facilitate the training of the future, we are also deeply involved in the program planning for new facilities for the education of students, post-graduate trainees and faculty. When completed (we hope by 2008), the new Stanford Medicine Information and Learning Environment (SMILE) will offer state-of-the-art facilities for small and large group teaching, immersive learning and a knowledge center. SMILE will also create a bridge that links our medical and graduate students as well as our basic and clinical scientists and clinicians.

As noted, one of the most exciting developments at Stanford is the focus on interdisciplinary education and research. While many universities now recognize the excitement that exists at the intersection of traditional physical, biological and computational sciences, Stanford has a long history of engagement and participation in this arena. Indeed, collaboration across school boundaries is highly valued by Stanford faculty and supported by its leaders. The goal of becoming “one university” recalls the dreams of Stanford’s first president, David Starr Jordan, and bears witness to its current president, John Hennessy.

During the past year, the establishment of a new joint Department of Bioengineering between the Schools of Engineering and Medicine offers tangible evidence of a commitment to interdisciplinary education and research. The goal is to create a fusion of engineering and the life sciences that promotes scientific discovery and the development of new technologies and therapies through research and education. Through programs in graduate and undergraduate education (which we hope will commence in 2004 and 2005 respectively) it is our hope that this new department will permit us to better understand living systems; learn from these systems to improve engineering designs; engineer biological systems; and improve human and environmental health through research, education and therapy.

Interdisciplinary research and education will take on several additional forms at Stanford University during the coming years – each impacting the School of Medicine in one or more ways. Among the major multidisciplinary themes for the University will be the Performing Arts; Bioengineering; BioX and Translational Medicine; the Environment; and International Affairs. The School of Medicine’s faculty and students map to each of these initiatives and for some, will serve as a leader.

As tangible evidence of our multidisciplinary commitment, the Clark Center will be completed in June 2003 and will represent a model for the future. Located on the Medical School campus, this new state-of-the-art facility will house 40 faculty from four schools, representing 24 departments. It will bring together faculty and students from the physical, biological, computational, engineering and environmental sciences. The goal is to create focal areas of investigation that facilitate new collaborations within the Clark Center but, even more importantly, that engage faculty in departments and schools throughout the University. Among the areas for initial focus within the Clark Center are:

- **Biocomputation**, including image processing, bioinformatics, protein folding, biomechanical simulation, remote teaching
- **Bioengineering**, including the administrative home for the new Joint Department of Bioengineering
- **Biodesign**, including biorobotics, biosensors, surgical techniques, medical devices, tissue repair, image guidance, therapeutic delivery systems
- **Imaging**, focusing on molecules, cells, tissues, movement
- **Biophysics** of single molecules
- **Chemical Biology**
- **Genomics/Proteomics**
- **Systems Neuroscience**
- **Regenerative Medicine**

School of Medicine faculty and students will play a major role in a number of these initiatives. Importantly, they will expose students to novel approaches to research and new opportunities for inquiry at the intersection of disciplines.

One of the major goals of the School of Medicine is to benefit from the knowledge emanating from basic science research to improve human health. *Translating Discoveries* thus represents a unifying initiative for the School and its faculty. As is nearly always the case, the best research will result from the creative energy of investigators working in self-initiated collaborations. It is our hope that the environment at Stanford will foster novel collaborations and promote translational discoveries. In addition, we also plan to focus some overarching themes that link basic research with clinical care. Indeed, we believe that such linkages will help make Stanford Medical Center unique and will serve as the basis for judging its excellence and importance to our communities, locally and globally.

Based on our assessment of opportunities in science and technology and the expertise of our faculty, we plan to launch four interdepartmental and interdisciplinary efforts under the banner of the Stanford Institutes of Medicine. Each will provide an area of focus but it is also likely that they will offer opportunities for synergy between them. Equally important are the numerous opportunities for collaborations across the University related to the Stanford Institutes of Medicine.

The four Stanford Institutes of Medicine will be:

- The Stanford Institute of Cancer/Stem Cell Biology and Medicine
- The Stanford Institute for Cardiovascular Medicine
- The Stanford Institute of Neuroscience (aka Stanford Brain Research Institute)
- The Stanford Institute of Immunology, Transplantation and Infectious Diseases

As a School of Medicine and Medical Center, improving patient care is our ultimate mission. We currently benefit from faculty who are leaders in providing state-of-the-art patient care. We are also challenged, however, by being part of a very competitive and costly health care environment. Operating an academic medical center in the 21<sup>st</sup> century carries with it costs for education and research that are not completely funded and that require additional support from institutional resources or the community. Offering excellence in clinical care and patient services along with leading edge innovation and discovery is the key to Stanford's future success. Translational medicine is essential to this effort, as is a close partnership between our faculty and hospital leaders. Communicating effectively with our communities and engaging them in the support for Stanford Medicine is essential and addresses our goal of re-engaging the public trust in academic medicine.

I believe that Stanford Medicine is uniquely poised to play a major role in redefining the future of academic medicine. The challenges are many but the opportunities are extraordinary.

### **CCIS Summer Intern Program**

Twenty-three stellar high-school students were selected from over 180 applicants to participate in an eight-week program of intensive research in the Center for Clinical Immunology at Stanford (CCIS) Summer Research Program. Most students were from the San Francisco Bay area, and "all had much higher SATs (an average of nearly 1550) and grades than I had!" noted P.J. Utz, M.D., Director of the Program. Bench research was complemented by 16 lectures on basic immunology, scientific method, and career opportunities, as well as exposure to patients in the hospitals and clinics. The lecture course was modeled on the same immunology course taken by Stanford medical students, including a 300-page syllabus organized by Dr. Utz, Donna Thibault (course TA and a graduate student in the Utz lab), immunology graduate students, and Professor David Lewis. Almost all lectures were presented by immunology graduate students, contributing greatly to their training as future leaders in education. The program culminated in a two-hour poster session on August 7, attended by 200 members of the Stanford and local community. The program is funded by the National Institutes of Health, Howard Hughes Medical Institute, the Arthritis Foundation Northern California Chapter, and individual benefactors of CCIS. Congratulations to all involved, particularly CCIS Director, Garry Fathman, M.D., and the lab mentors and students for taking on the task of training the next generation of immunologists.

## **Community Lecture Series**

On Wednesday, September 3<sup>rd</sup> at 7:00 p.m. in the Fairchild Auditorium, Drs. Alan Yeung, Bobby Robbins, Bruce Reitz, and Judy Swain, will present “Rejuvenating the Heart: Current Technologies and Future Promise.”

Please join us to hear some of Stanford’s top heart experts discuss innovative new approaches to diagnosing, treating, and preventing cardiovascular disease. This free event is the first of an ongoing series of lectures on important issues in health care and biomedical research.

If you have any questions, please call 650-234-0653.