

Dean's Newsletter

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Table of Contents

- Discovery, Innovation and the NIH
- School of Medicine Financial Update
- Emerging International Interactions
- Debate on the Physician Workforce
- Fellowship Opportunity at the Stanford Center on Longevity
- Some Notable Comings and Goings
 - Dr. Renee Pera will Join Stanford
 - Dr. Alan Krensky will Leave Stanford for a Leadership Position at the NIH
- Awards and Honors
- Appointments and Promotions

Discovery, Innovation and the NIH

There is little question that the flattening of the NIH budget has caused considerable anxiety throughout academia – and for good reason. And while NIH leaders attribute much of the current funding challenges now being faced by investigators and faculty to the increased number of applications being submitted, the reality is that three years of budgets below inflation have taken a serious toll on NIH funding and have eroded many of the gains achieved during the doubling that took place between 1998-2003 – especially in basic discovery research.

I have previously written on the challenges we now face in biomedical funding and on the need to do all we can to educate and engage the public and federal government leaders to bring the NIH budget to a better level – and at least in line with inflation. The challenges we now face are multifaceted. They include the severe limitations on the federal discretionary budget that have contributed to some of the cutbacks as well as the perception by many Congressional Members that NIH had its turn for increased financial support and that other agencies should now receive a higher priority. This position has been fueled by the view that cures and breakthroughs did not follow the increases in NIH funding several years ago – an unfortunate and unintended consequence of setting expectations too high during the build up to the NIH doubling. Further, the loss of confidence of the NIH due to recent conflict of interest scandals as well as the general rise in anti-science sentiments, which have been more visibly expressed during the past several years, have also negatively impacted the wide bipartisan support previously enjoyed by the NIH.

Some of these issues posed a serious challenge to the integrity of the 2006 NIH reauthorization process. A number of us at Stanford and nationally became quite engaged with this process, which, thankfully, had a better outcome than was anticipated last

summer. As you know, I have been working with other leaders of academic medical centers, not only on this issue but on related topics from a public policy and advocacy point of view – and I am well aware, and appreciative, that many of our faculty have also been doing all they can to address these important challenges.

While our support for discovery and innovation is unwavering – as is our recognition that they serve as the both the foundation and the “glow factor” of modern science and, of course, of Stanford – it is also important to seek additional funding for the NIH, which remains the engine of discovery in this country, in terms that Congress can resonate to. One quite appropriate argument is that discovery and innovation not only create new knowledge and the potential for improving the diagnosis, treatment and prevention of disease, but that they also fuel economic development. Such an argument has proved successful in the pursuit of much needed and justified support for the physical and engineering sciences. I have also championed this argument with our colleagues in biotechnology in California, who also fully understand and support this perspective. In fact, I had an opportunity to further promote this viewpoint last week in Washington in meetings with numerous House Members representing various districts in California. Specifically, I joined a small group of CEOs and leaders from the California Healthcare Institute for a daylong set of congressional visits on Thursday January 18th. Our message on the importance of basic research discovery and innovation to the health of our nation was clear and, thankfully, very well received by every congressional member with whom we visited. While there is no question that funding challenges remain, I was encouraged by the clear change in interest that has seemed to follow the November elections.

We certainly have much work to do, but there does seem to be a more receptive audience to our message about discovery and innovation in the biosciences. I would thus encourage you to continue working through your professional societies and contacts to foster support for the NIH and biomedical research. For the first time in a while I am hopeful that positive changes may be on the horizon, which, even if they are slow to come and less than we need, may be a new beginning of support for discovery, innovation and biomedical research.

School of Medicine Financial Update

At the Executive Committee meeting on January 19th, Marcia Cohen, Senior Associate Dean, Finance and Administration, provided an update on the financial state of the School. The focus of her presentation was on the financial results for FY 2006, which ended August 31, 2006, and the budget projected for FY 2007. The School ended FY 2006 with a surplus of \$50 million on a base of total revenues of \$939 million. This compares favorably to the surplus of \$20 million in FY 2005 and a budgeted deficit of \$24 million. However, it is important to note that this is a consolidated surplus that includes departments as well as the Dean’s Office and that contains some elements that mask the true bottom line.

Among the key contributors to the positive bottom line was the \$57 million increase in clinical revenues from the prior year, due in part to the change in the funds

flow between the School and Stanford Hospital and Clinics, and in part to growth in the size of clinical activities. Without question these are positive changes that reflect an improvement in professional service payments as well as the hard work of our clinical faculty. The overall positive bottom line was also a result of delays in transferring funds for major capital projects, including the renovation of leased space at 1050 Arastradero for the Institute of Stem Cell Biology and Regenerative Medicine and the Neuroscience Institute, and the initiation of construction of the Learning and Knowledge Center (LKC) and Connective Elements. However, these capital expenditures are anticipated for FY 2007. Thus, the bottom line for FY 2006 is somewhat artificially elevated, since ultimately these funds will be spent.

That said, the positive result in FY 2006 occurred in spite of slowed growth in sponsored research – the School's total direct and indirect revenues from sponsored projects totaled \$371 million in FY 2006 compared to \$372 million in FY 2005. We are of course quite concerned about this trend, which reflects, in part, decreased funding from the NIH (see above). Since sponsored research awards represent one of the most important sources of income for faculty and the school, erosion in this sector can have dire consequences. While we anticipate that federal support from the NIH will likely be flat to slightly negative, we are projecting that support for stem cell research through the California Institute for Regenerative Medicine will help alleviate some of the negative impact in federally sponsored research support. While I am pleased that there is likely to be state support for stem cell research, it is also of some concern to me that the current politics around stem cell research is shifting the research agenda in this area from the federal to the state level. The immediate benefits of moving the research agenda are clear – at least in California - but the potential that this will further weaken the prominence of the NIH in biomedical research is a source of concern.

The School budget for FY 2007 includes total revenues of \$946 million, total expenses of \$956 million, and an overall projected deficit of \$10 million. Modest growth of clinical activity (+2%) and growth in sponsored project revenues (4%) are projected in the FY 2007 budget. However, the ability to further increase clinical volume is negatively impacted by capacity constraints at both Stanford Hospital & Clinics and the Lucile Packard Children's Hospital. Further it is anticipated that the funding climate for health care providers is likely to worsen over the next several years – in contrast to the recent past. As noted, the decline in federal support for sponsored research is a serious challenge that is partly alleviated by the probability of state funding for stem cell research.

At the same time, the Dean's Office is increasing its investments in strategic initiatives, including more than \$7 million on recruitment commitments, \$11 million on institutes and centers, \$3.7 million on interschool initiatives (Bio X/Clark, Bioengineering), \$5.3 million on central services (Office of Medical Development, Clinical Research/SPCTRM, and Diversity and Leadership), and \$1.8 million in education. These investments reflect our commitment to the Stanford Challenge and to enhancing our excellence in research and patient care.

Ms. Cohen also presented financial information on the Dean's Office operations, showing that while, overall, departments had a surplus in FY 2006 and also a projected surplus in FY 2007, the Dean's Office experienced a net deficit of \$9 million in FY 2006 and has a budgeted deficit of \$28 million in FY 2007. The results are indicative of the investments the Dean's Office is making and plans to make in recruitments, strategic initiatives and capital projects that exceed current year revenues. Obviously this is not sustainable over time. Future years will require discussions between the Dean's Office and departments about how to optimize funding and spending to meet individual and collective needs for the School and our missions in education, research and patient care.

Emerging International Interactions

One of the major goals of the Stanford Challenge is to reach out to our global colleagues and use our knowledge and skills to improve the world we live in. As communications and information technology have recalibrated international initiatives, we frequently encounter individual colleagues as well as institutions and even nations seeking intersections and collaborations with Stanford. During the past two weeks I had several experiences that serve to underscore the importance of international initiatives and partnerships.

On January 15-16th the leaders of the Stanford Neuroscience Institute hosted a meeting with scientists from the University of Lund in Sweden. I had the opportunity to meet with the Dean of the School of Medicine and several faculty leaders from Lund. I was struck by the similarity of their goals to ours in fostering research that transcends traditional institutional boundaries and disciplines and that seeks new interactions among the physical and life sciences to better understand the workings of the brain and nervous system – and as a consequence to enhance and even transform the approach to important neurological disorders. A continued exchange of ideas and, potentially, of students and faculty will help to promote future dialogue and collaboration – a goal consistent with the Stanford Challenge.

On January 19th I participated in a meeting led by leaders from the Freeman Spogli Institute for International Studies about the Medical School's potential involvement in education and research initiatives in China. Because several of our faculty are already engaged in interactions or collaborations in China it seemed prudent to first inventory faculty interest – a process now underway by a committee comprised of Drs. Scott Atlas (Radiology), Nancy Shulman (Medicine- Infectious Disease) and Sam So (Surgery). Given the evolving role of China on the global stage it is clearly important that such relationships be better defined and supported.

And then on January 24-25th I joined Drs. Harry Greenberg, Rajiv Doshi and Paul Yock in New Delhi, India. There we met with leaders from academia and the Department of Biotechnology in the Ministry of Science and Technology to explore the potential development of a Stanford-India Bidesign Program modeled on the highly successful program developed at Stanford under the vision and leadership of Dr. Yock and colleagues (see: <http://www.stanford.edu/group/biodesign/>). During an intense two-day

series of meetings and discussions with academic and government leaders, including the Minister of Health, we had the opportunity to learn a considerable amount about shared goals and objectives with academic leaders from engineering and medicine throughout India and forged a path that could lead to very exciting and catalytic collaborations.

What struck me in each of these interactions was the similarity of our thinking on important issues and challenges in science and medicine. Not infrequently we convince ourselves of the uniqueness or at least the distinctiveness of our ideas or plans – at least in our eyes. It is both sobering and refreshing to recognize that good ideas have no geographic boundaries and that physicians and scientists around the world are also thinking about ways to better unite medicine, the biosciences, the physical sciences and engineering to better understand bioscience and medicine. It is true that the ability to implement novel approaches may vary – and that in this respect Stanford is likely among the most distinctive institutions in its ability to foster innovation and discovery in a spirit of entrepreneurship. But it is also true that a focused series of international interactions that build on our core missions of discovery and innovation will surely play an important role in Stanford's future – and in future generations of students, trainees and faculty, not only on our home campus but around the world.

Debate on the Physician Workforce

At the Board of Directors meeting of the Association of Academic Health Centers on Saturday, January 20th we had an interesting discussion about the assumptions behind the proposed increase in the physician workforce being championed by the Association of American Medical Colleges (AAMC). You may recall that the AAMC has called for a 15-30% increase in the physician workforce – which is already being met by increases in the size of medical school classes as well as an outcropping of new medical schools. While I certainly agree that there is a maldistribution of physicians in the USA, a shortage of primary care doctors in various regions of the country, especially rural areas, and a lack of selected specialty physicians, the fundamental assertion that a serious physician workforce problem exists is less well founded.

One of my major concerns with the recent projections and the call to increase the numbers of medical school graduates is that a larger number of physicians *per se* will not necessarily address the national distribution of doctors or the areas of medicine they choose to practice. Unless entry into specific fields is channeled and other areas regulated (neither of which is likely to occur) it seems unlikely that the overall practice patterns or career choices will be significantly altered. From my perspective, rather than focusing on graduating a larger number of new physicians, it would seem more prudent to address the overall health care workforce and, in particular, the roles for non-physician providers. While one of the major drivers for expanding the physician workforce is the projected increase in the elderly, a more careful examination of the scope of medical care being provided seems a more important initial step.

Of interest, the Health Resources and Services Administration (HRSA) issued a report in October 2006 on “Physicians Supply and Demand: Projections to 2020” that

offers a contrasting analysis and perspective. Based on this recent report, the current physician workforce in the USA in the base year (2000) included an estimated 756,000 active physicians under age 75 with approximately 95% being MDs and 5% DOs. Based on projection models, the number of practicing physicians in 2005 who are less than 75 years of age was estimated to be 817,000, with slightly over one third in primary care and the remaining serving as specialists. As the number of women entering medical school has risen during recent decades, so too has the proportion of the workforce that is female. The work patterns of men vs. women (where women have, to date, chosen more primary care practices) serve as another important variable in workforce projections. By 2020, FTE physicians who are engaged primarily in patient care are projected to reach 866,000 (a 10 percent increase from current levels). The census bureau estimates that the USA population will grow by a relatively commensurate rate between 2005 and 2020, resulting in a relatively constant full-time equivalent patient care physician per 100,000 population ratio of approximately 259. In addition, there will be an increasing proportion of elderly citizens who may require medical services.

There is considerable variation in projections by specialty area, and some do experience limitations in physician supply. However, it is very hard to accurately project specific specialty or discipline needs – or the choices of medical school graduates in pursuing them. What does seem clear is that simply graduating more MDs won't necessarily fill critical need areas – as has been well demonstrated during past decades. Further, workforce projections can also be influenced by changes in the health status of communities or populations, new technology advances, changes in payment or physician productivity, the entry of non-physician clinicians or variances in the models of health care delivery or of health care systems. Based on the analysis it conducted, the HRSA report notes that “the growth and aging of the United States population will cause a surge in demand for physician services. If current healthcare utilization and delivery patterns continue, the overall supply of physicians should be sufficient to meet the expected demand through the next 10 years. This finding suggests the need for modest increases in United States medical school capacity.” It is certainly at variance with the recommendations by the AAMC to increase the current medical school class size by 30% and to expand the number of medical schools. This is an issue that requires considerable more thought and some tempering of the current focus on expanding MD graduates.

While the issues about the physician workforce are important to all of us, they have a different complexion at Stanford. We are a small research-intensive school of medicine, and while we certainly want to educate and train outstanding physicians, our primary focus should be on educating leaders and physician scholars as well as leaders in the biosciences. If we were to increase our class size, something that requires further contemplation, it would be to address the shortage of physician-scientists - which is a serious problem in the USA and something we are in a unique position to help address. But this too requires additional debate and discussion.

Fellowship Opportunity at the Stanford Center on Longevity

The Stanford Center on Longevity (SCL) will fund postdoctoral fellows for three years of full-time research in interdisciplinary studies related to aging or longevity. We

expect to fund two fellows per year and therefore, after three years, to have six fellows in the program on an ongoing basis. The deadline to apply is April 1, 2007. Funding to begin July 1, 2007.

For eligibility requirements and additional information and application form click here: <http://longevity2.stanford.edu/docs/literal/mission.html> then click on the "Fellowships" link.

Some Notable Comings and Goings

We learned several days ago that **Dr. Renee A. Reijo Pera**, currently Co-Director of the Human Embryonic Stem Cell Research Center and Director of the CIRM Training Program at UCSF, has accepted our offer to join Stanford as the Director of Human Embryonic Stem Cell Research and Education in the Stanford Institute for Stem Cell Biology and Regenerative Medicine, and Director of Human Stem Cell Research in the Department of Obstetrics and Gynecology, where she will have her academic appointment. Dr Pera is an internationally recognized leader in embryonic stem cell research and is highly recognized for her scientific accomplishments as well as for her achievements as an educator and mentor. Dr. Pera received her PhD from Cornell and was a Damon Runyon Fellow at the Whitehead Institute and Instructor at MIT before joining UCSF in 1997. She has received numerous awards for her work including the American Stem Cell Research Foundation Award and the Outstanding Faculty Mentor at UCSF Award. In September 2006 Dr. Pera was cited by Newsweek magazine as one of the twenty most influential leaders in the USA. Critical to Dr. Pera's successful recruitment was the combined efforts of Drs. Irv Weissman, Jonathan Berek and Mike Longaker. I want to thank them and also thank our Provost, John Etchemendy, for his special assistance as well. We are very pleased to have Dr. Pera as a new member of our Stanford community and I hope you will join me in welcoming her.

Dr. Alan Krensky, the Shelagh Galligan Professor of Pediatrics and Chief, Division of Immunology and Transplantation Biology, will officially join the National Institutes of Health in July 2007 as the Deputy Director for the Office of Portfolio Analysis and Strategic Initiatives (OPASI). Dr. Krensky has been a faculty member at Stanford since 1982 and has made numerous and significant contributions as a physician-scientist as well as one of the key architects of the Children's Health Initiative. Indeed he was instrumental in guiding both key initiatives and important recruitments that have helped transform Stanford Pediatrics and the Lucile Packard Children's Hospital. He will be the first incumbent of the newly established OPASI and, as noted by Elias Zerhouni, Director of the NIH, "he will play a key leadership role as the Office of Portfolio Analysis and Strategic Initiatives provides an 'incubator space' to accelerate critical research efforts that address major, cross-cutting NIH priorities."

As described by the NIH, the Office of Portfolio Analysis and Strategic Initiatives was built on the success of the NIH Roadmap for Medical Research and has two goals: to identify important areas of emerging scientific opportunities or rising public health challenges, and to help accelerate investments in these areas to make sure new ideas have a chance to develop. Accordingly, OPASI provides new opportunity for more trans-NIH dialogue, decision-making, and funding and provides the National Institutes of Health

with the methods and information necessary to manage its large and complex scientific portfolios and also to help identify important areas of emerging scientific opportunities or rising public health challenges and assists in their rapid implementation.

I want to take this opportunity to thank Dr. Krensky for his many significant contributions, which have been extremely important and which will be enduring. Please also join me in congratulating Dr. Krensky for his important national leadership position. We wish him the very best of success.

Awards and Honors

Helen Blau, PhD, the Donald E. and Delia B. Baxter Professor and Director of the Baxter Laboratory in Genetic Pharmacology, has been appointed to the Scientific Advisory Board of the Ellison Medical Foundation, as of Jan. 1, 2007 for two years. The Ellison Medical Foundation supports basic biomedical research on aging relevant to understanding lifespan development processes and age-related diseases and disabilities, with the goal of stimulating new, creative research that might not be funded by traditional sources or that is often under-funded in the U.S. Congratulations, Dr. Blau.

W. James Nelson, PhD, the Rudy J. and Daphne Donohue Munzer Professor in the School of Medicine, has been appointed by HHS Secretary Michael O. Leavitt as one of three new members to National Advisory General Medical Sciences Council. The council is composed of leaders in the biological and medical sciences, education, health care and public affairs and members are appointed to four-year terms. Congratulations, Dr. Nelson.

Appointments and Promotions

Raffick Bowen has been appointed to Assistant Professor of Pathology, effective 1/1/2007.

Lorinda Chung has been appointed to Assistant Professor of Medicine (Immunology and Rheumatology) at the Veterans Affairs Palo Alto Health Care System, effective 1/1/2007.

Marc Coram has been appointed to Assistant Professor of Health Research and Policy, effective 1/01/2007.

Myriam J. Curet has been promoted to Professor of Surgery, effective 1/1/2007.

Gundeep S. Dhillon has been appointed to Assistant Professor of Medicine (Pulmonary and Critical Care Medicine), effective 1/1/2007.

Dean Felsher has been promoted to Associate Professor of Medicine (Oncology) and of Pathology, effective 2/1/2007.

Shai Friedland has been reappointed to Assistant Professor of Medicine (Gastroenterology and Hepatology) at the Veterans Affairs Palo Alto Health Care System, effective 1/1/2007.

Kathleen Gutierrez has been reappointed to Assistant Professor of Pediatrics (Infectious Diseases) at the Lucile Salter Packard Children's Hospital, effective 4/1/2007.

Judy Illes has been appointed to Associate Professor (Research) of Pediatrics, effective 2/1/2007.

Michael R. Jeng has been promoted to Associate Professor of Pediatrics (Hematology and Oncology) at the Lucile Salter Packard Children's Hospital, effective 1/1/2007.

Bingwei Lu has been reappointed to Assistant Professor of Pathology, effective 1/1/2007.

Greer M. Murphy has been promoted to Professor of Psychiatry and Behavioral Sciences, effective 1/1/2007.

Mei-Chiung Shih has been appointed to Assistant Professor of Health Research and Policy, effective 1/1/2007.

Christopher N. Ta has been promoted to Associate Professor of Ophthalmology, effective 1/1/2007.

Victor Tse has been promoted to Associate Professor of Neurosurgery at the Santa Clara Valley Medical Center, effective 1/1/2007.

Wen-Kai Weng has been appointed to Assistant Professor of Medicine (Bone Marrow Transplantation), effective 1/1/2007.