

Dean's Newsletter

June 18, 2007

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Commemorating Commencement 2007

The year since our last Commencement in 2006 has been a highly memorable one for the Stanford University School of Medicine. It witnessed the remarkable excellence of our faculty with two Nobel Prizes along with more than 50 other major honors, awards and distinctions. It was a time of continued progress in the fulfillment of *Translating Discoveries*, and included the significant milestone of being named an NCI-Designated Cancer Center. It was a time of compelling basic science discoveries as well as of notable achievements in clinical research and innovations in patient-care. During this past year we recruited numerous extraordinary faculty and leaders and admitted a class of exceptional graduate and medical students who will be joining the Stanford community in late summer. But to the purpose of the moment, on June 16th we celebrated our 2007 Commencement and graduated a class of highly talented individuals who will join the ranks of our bioscience and medical communities. They emerge with extraordinary promise but face significant challenges due to the worrisome climate now casting shadows over the nation's support for biomedical research as well as the continued deterioration of our "healthcare system." It is our obligation to do all we can to foster their future careers and help create the opportunities for their continued success. But it is also my hope – and should be our expectation – that these new graduates will continue the tradition of Stanford by becoming leaders who will transform medicine, science and our society. They are our source of hope and promise and we are proud to celebrate their achievements to date – and to anticipate their contributions for tomorrow.

Reflections – Representing PhD and MD Graduating Students

Joe Dan Dunn, Candidate for Doctor of Philosophy

Graduation. Graduation is what brings us together today. Graduation, that blessed arrangement, that dream within a dream...

At this ceremony marking the end of my formal education, I will tell a story about the beginning. On a warm August day in Texas in the -- let's say -- early 80's, my father drove me to my first ever day of school. During the drive he explained that I would go to school for only half a day; I would have class in the mornings until Christmas break and then would switch to afternoons for the remainder of the school year. Upon hearing this information, my eyes grew wide, and I exclaimed in dismay, "Christmas? I have to go to school until Christmas?"

Of course, at the time I had no idea that I would be in school not only until that Christmas but also for many, many Christmases to come. My classmates and I chose the long road. Earning a PhD is no quick and easy task but rather an arduous, sometimes lengthy, sometimes very, very lengthy journey. And let us not forget that science can be a particularly harsh teacher.

Why do we do it? Is it for the prestige? The snazzy lab coats? The freedom to work long hours for low pay? The wary, frightened, and rarely respectful glances from the undergrads? No. We do it because, as Antoine de Saint Exupery wrote in *The Little Prince*, "When a mystery is too overpowering, one dare not disobey." We do it for the thrill of discovery and for the chance to expand the boundaries of human knowledge – even if, admittedly, we only push the boundary back a few millimeters at a time.

And why does it take so long? Is it because *The Onion* consistently publishes such hilarious and distracting articles? No. Borrowing again from *The Little Prince*, it is because, "Straight ahead of him, no one can go very far." The road to a PhD is often filled with unexpected twists and turns. Indeed, these surprises are what make science so darned interesting. For some of us, an analogy can be drawn between our graduate careers and the plot of the classic Cohen brothers film *The Big Lebowski*: after a series of perplexing and seemingly random observations, we manage to sort through all the strands of data in our heads to solve the puzzles set before us as thesis projects. Of course, our solutions often raise more questions than answers, but hey, we've got to save something for future graduate students.

For others of us, our graduate careers are more like the experiences of the protagonists of *Harold and Kumar Go to White Castle*: after a series of mishaps and zany adventures that force us to grow as scientists, we finally reach our goal and earn the degree.

And for all of us, at times it no doubt seemed like we were trapped in an episode of the Teletubbies: upon hearing us present beautiful data from that perfect experiment our advisors would say, "again."

Regardless of how we reached our goals, the fact remains that my classmates and I have all been deemed worthy of the degrees we sought to obtain. So congratulations to all that are graduating today. And, on behalf of my classmates, I would to thank our advisors,

mentors, colleagues, friends, and family for their support over the years... sometimes many years... sometimes many, many years.

In the midst of this celebratory moment I pose a challenge to my fellow graduates: whether you continue to do research, whether you continue to practice medicine, whether you decide to enter a new field, do what you can to promote science education. A strong science curriculum inspires and prepares the next generation of scientists. Moreover, a solid science education is also critical for the next generation of non-scientists so we can avoid a future in which public health and environmental policy decisions are based on ideologies and political agendas rather than scientific data. I urge you: please, do what you can to defend science.

Graduation is a crossroads of journeys that signifies both an end and a beginning. And so I will close with the following poem from *The Lord of the Rings*:

The Road Goes Ever On and On
Down from the door where it began.
Now far ahead the Road has gone,
And I must follow, if I can,
Pursuing it with eager feet,
Until it joins some larger way
Where many paths and errands meet.
And whither then? I cannot say

Joshua Spanogle, Candidate for Doctor of Medicine

Man, what a difference four years to twelve years makes.

I think back to the beginning of school—two weeks into classes and already we magnets for medical questions. Family and friends treating us like we'd been in practice since the Eisenhower administration. The questions about glucosamine and beta blockers, the question about what to do when Zoe got a FruitLoop stuck up her nose. And, my personal favorite: the frantic call from my mother. “Josh, the dog just ate a bug and his head is the size of a basketball.” We fumbled through answers and explanations, we quickly learned that “I don't know” doesn't wash with anyone claiming blood ties or history with us. And so we—some of the best and brightest students in medicine—did what any reasonable person would do in such circumstances—we went to Google. Now, years of medical education under our belts, we field more questions about arthritis, high blood pressure, allergic dogs. But this time, we answer right then and there. We are faster, we are smarter. But most importantly, our Google searches are better. And we know about Up-To-Date (folks: don't ask your kids about Up-To-Date; just assume they're really, really smart).

But I'm not here to sing the praises of Internet search skills, or even our basic medical training. What I want to talk about is engagement, and I don't mean the kind that ends

with inappropriate speeches by the best man. I'm talking about physician engagement with issues beyond the OR or the clinic. And the reason I want to talk about this is that I believe we're at an historic moment when it comes to health care in the U.S.

Let me set the stage. 47 million uninsured. Health care spending of over 2 trillion bucks last year, \$6700 for every person in this country. It's expected to be about \$4 trillion by 2015. (To put this in perspective, if you put 4 trillion on a scale, it would weigh more than the sun. Just kidding, but it's a lot of money). On the research side, NIH funding peaked in 2003 and, despite producing some spectacular results, funding has declined (in real dollars) since then. I don't need to tell anyone involved in the hunt for grants that these are, indeed, lean times.

In summary, the health of health care in this country is not what it should be.

Let me set another stage as an example: in the first 100 years of this country 4.6% of members of Congress were physicians. In the past 40 years, 1.1% were.

So, why all the wonky numbers in a graduation speech? For me, it comes down to this: at a time when health care is becoming the largest single chunk of our economy, when it has its fingers deep into the lives of every person here, when the political climate—for the first time in almost 15 years—is truly recognizing the importance of the issue...At this time, physician participation in these immense forces that shape the country's fate—and especially our fate as doctors—is at an historic low.

But why? Why the lack of doctors in public life? People much smarter than I have come up with answers, ranging from the narrow focus of physician education to the demands of daily practice, which don't allow doctors to explore other career options while still caring for patients. The gist of it is that physicians can't focus on anything but either practice and/or research because there aren't enough hours in the day. This, I think, is a problem, not only because it's somewhat disingenuous—there is research that says development of expertise in two disciplines enhances performance in each—but because it deprives society of the unique perspective physicians can provide.

So, am I saying that all of us should chuck our training and run for that open seat in the 9th District? Hardly. However, I am saying that physicians—for themselves and for society—should be more involved in the larger debate, which sorely needs the doctor's voice right now. And the ways in which we can speak up are myriad: through elected politics and policy work, sure, but it can also be through letters-to-the-editor, it can be through business, it can be through art. It can even, God forbid, be through fiction. The important thing is to engage.

And this is the point at which we come full circle: back from the travails of national policy to the Stanford campus, June 16th, 2007. I might be biased, but Stanford Med is doing a better job than any other school in the country to prepare its students for "Engagement with Medicine"—Capital "E", capital "M"—which comes down to a lot more than providing us access to Up-To-Date. Not only has Stanford given us an

unparalleled medical education—that goes without saying—it has also allowed us the flexibility to wrangle with the world outside the hospital. And it has supported that endeavor with cold hard cash—a little over \$2 million in student research funds last year alone. These were grants for work in the lab, for work in public policy, epidemiology, the arts. These were grants for papers that had titles ranging from “Formation, Malformation and Transformation: My Experience as Medical Student and Patient” to “Ensemble molecular dynamics yields sub millisecond kinetics and intermediates of membrane fusion.” Stanford truly has provided fertile ground for scientists, policy experts, advocates, writers and entrepreneurs. From the top down, this medical school recognizes the importance of the physician’s role in society. It recognizes the importance of engagement. This is not trivial. Especially now.

So what are we supposed to do with all this? What do we do with a stellar medical education that pays attention to the “big picture?” Here, I will only speak for myself. Just as I hope to carry my medical education with me for the rest of my life, I hope I will continue to carry the Stanford ethos. In short, I hope I never stop being a Stanford student, though I admit not paying tuition will be a very, very welcome change.

In the end, there is a lot of thanks to go around today. Thanks to the faculty and administration for the dynamic and supportive environment they’ve created. Thanks to my classmates, who’ve already been so engaged and challenging. Thanks to the parents and families, who’ve sweated and sacrificed so we could trudge through fluorescent-lit hospital corridors while the California sun shone outside. And, finally, I trust, someday society will thank Stanford Medical School for the forward-thinking, paradigm-busting physician leaders who get their wings today.

Oh, and one final thing, for the families here. Don’t let all the paradigm-busting, forward-thinking, physician-engagement talk fool you. Even if your kid finds herself cooling her heels in a Senate office someday, she will always—always—have time to take a look at that rash that’s been giving you such trouble lately.

Commencement Speaker: Professor Herb Abrams

Dr. Herb Abrams is Emeritus Professor of Radiology at Stanford, where he has also served as a member-in-residence at the Center for International Security and Cooperation. A world-renowned authority in diagnostic radiology with major leadership positions at Stanford and Harvard, Dr. Abrams has also been a leading figure in issues surrounding the human frailties controlling nuclear arms, the impact of ionizing radiation and nuclear weapons, and the impact of purposeful as well as inadvertent decisions made around nuclear proliferation and war.

In addition to his numerous scholarly articles on diagnostic and particularly cardiovascular radiology, Dr. Abrams was the founding vice-president of International Physicians for the Prevention of Nuclear War, which received the 1985 Nobel Peace

Prize. He has received numerous honors for his academic and public policy contributions and I am pleased to welcome him to address you today.

Fourth Dimension of Biomedicine

It's a pleasure and an honor to share some thoughts with the extraordinary women and men this convocation. Yesterday, you were medical and graduate students, and tomorrow you will join the transplanetary society of physicians and biomedical scientists whose lives of service and intellectual engagement have absolutely no bounds. I congratulate you, together with your assembled families, friends and faculty, and welcome you to this unique sisterhood and brotherhood.

I've been asked to say a few words about my career and my involvement in diagnostic imaging and the greater world outside. In brief, I went to medical school to become a psychiatrist; discovered the excitement of internal medicine at the end of my second year; and began to understand in my third year that radiology was the quintessence of diagnostic medicine. Whether it was the brain, the heart, the lungs, or the skeletal system, radiologic imaging provided the road map for virtually all surgical and many medical therapies. After a few post-graduate years in internal medicine, I came to Stanford in 1948 for residency training in radiology. I remained on the faculty, and with the move of the medical school from San Francisco to Palo Alto in 1959, I became professor and director of the diagnostic radiology division. In 1967, I accepted the challenge of developing radiology further at Harvard Medical School as Chairman of the medical school department, with day-to-day operational responsibility for radiology at the Brigham and Women's and Dana-Farber hospitals. I returned to Stanford in 1985, eighteen years later.

Throughout this period, my laboratory and clinical research focused on cardiovascular pathophysiology and imaging. That was the centerpiece of my work in the three dimensions of medicine: patient care, research and teaching. I had the pleasure of doing the first selective coronary arteriogram at Stanford in 1960, and, with Ricketts, of designing and describing in the JAMA the first percutaneous transfemoral pre-shaped catheter method, the basis of modern coronary arteriography.

We're all aware of the breadth and import of those three dimensions, but what in the world is the "fourth dimension," my topic for today? The answer to that question will become clear as I reflect on my involvement in two physician movements during the last century.

Earlier this year, on the weekend of February 23, 2007, I had the opportunity to meet with some of the next generation of leaders in one of those movements, when Stanford was host to the annual national meeting of Students Physicians for Social Responsibility. I was privileged to address and then to listen to 100 bright, energetic and informed attendees from medical schools across the nation present an impressive set of

papers on nuclear issues, the environment, and violence prevention at many levels. It was like a shot of adrenaline.

For many years I had served on the National Board of “PSR”, as Physicians for Social Responsibility is referred to. It began as an effort by a small number of physicians in late 1961 to “study the dilemma in which the world now finds itself.” This concern was expressed in a series of articles in the New England Journal of Medicine on the human and ecologic effects of a nuclear attack, and the physician’s role in the post-attack period.

PSR, with other groups, was active in demanding a ban on nuclear testing, collecting hundreds of baby teeth and demonstrating that they contained Strontium 90. Together with worried parents, they took the teeth to Washington. As the clamor about the hazards of fallout around the globe grew louder, an atmospheric test ban was proposed and signed on August 5, 1963.

Towards the end of the seventies, PSR was galvanized once more by the heightening alarm over nuclear weapons stockpiles and the tension of the Cold War. After a series of symposia held around the country on college campuses, including Stanford, its membership increased rapidly and many new chapters were formed.

In the summer of 1979, a few of us in PSR joined together to discuss an international organization to form a bridge between the East and West. The goal would be to inform and educate physicians, the public, and policy makers in many nations on the life and health impact of nuclear war. International Physicians for the Prevention of Nuclear War, known as IPPNW, was formally incorporated in the spring of 1980. In March 1981, the first international congress was held, with about seventy participants from the United States, the Soviet Union, Japan, Canada, France, the United Kingdom, Norway, Sweden, and the Netherlands. An appeal to the United Nations and to the heads of all governments emerged from the meeting, urging a set of measures for the avoidance of nuclear war.

IPPNW grew rapidly through the years, with sixty national physician groups meeting in a series of congresses in Cambridge, Amsterdam, Helsinki, Bonn, Moscow, Montreal, Hiroshima, Mexico City, and Beijing. In 1985, it was awarded the Nobel Peace Prize, and as its founding Vice-President, I had the pleasure, along with my wife, of sitting next to the King of Norway at the ceremony in Oslo. The chairman of the Nobel committee explained the choice: “IPPNW has educated us and the world on the dangers to life and health that nuclear weapons represent. The prize expresses a hope that bridges can be built over the chasms that represent our fear of the future.”

With the end of the eighties, we had come a long way from the threat of a massive nuclear exchange between the USSR and the USA. There was a sense of wonder that the Northern Hemisphere had managed to weather the Cold War without an episode of nuclear violence. IPPNW leadership communicated directly with Gorbachev and had major hearings with some in Congress and the executive branch. Doctors were engaged

in their traditional role of preventing disease and death. In 1987, with international pressure high, Reagan and Gorbachev signed the treaty to eliminate Intermediate-Range nuclear weapons

Beyond the impact of IPPNW on policy decisions, it provided an extraordinary opportunity for person-to-person exchanges, and ultimately communication with a larger audience during the Cold War. I was asked to lead a party of eight physicians to the USSR in July 1985. It was a time of tension, the Russians highly suspicious of Reagan's intentions to launch a preemptive strike under an SDI umbrella, the Americans viewing the Soviet nuclear arsenal and policies with great distrust. What good could our visit possibly do?

Importantly, there was the richness of the direct interaction with Soviet physicians and health workers. There was also the unusual opportunity to express the concern of many Americans over the nuclear arms race before large audiences of health professionals, and on Soviet television. During our ten-day visit to Moscow, Tbilisi, Kiev and Leningrad, we presented graphic lectures on the "Medical Consequences of Nuclear War" and documented the sheer size and composition of the Soviet stockpile, side-by-side with that of the U.S. As we concluded our trip with our daily exchange of ideas and observations, there was a powerful feeling that one visit was worth a thousand books.

Subsequently, I was contacted in the United States by the daughter of a Soviet dissident in chronic congestive heart failure, desperately in need of valve replacement. The prosthetic valves were not available in the USSR at the time. When I reached Moscow for an IPPNW meeting, I was able to transfer the valves to the dissident's brother, who came to my hotel from his home in Leningrad. Subsequently, cardiac surgery was successfully performed and he became asymptomatic. IPPNW was the bridge.

At our meeting in Cologne in June 1986, a few of us expressed our concern to our Russian colleagues about a Soviet cardiologist named Vladimir Brodsky, who had been imprisoned as a member of the Moscow Trust Group, the Soviet analogue of Human Rights Watch. We were assured that his case would be pressed with Soviet authorities. He was not released. In early August, I sent a letter to Dr. Chazov, the head of Soviet IPPNW and director of the Moscow Institute of Cardiology, in which I said: "Dear Eugene, I write to you in the hope that it may be possible to follow through on the review of Brodsky's case and have more encouraging news about him in the very near future."

In early September, at the World Congress of Cardiology in Washington, I had breakfast with Chazov. He informed me that Brodsky's wife had already left the Soviet Union and was in Vienna, and that Brodsky was now out of prison, back in Moscow, and would be released within days. Two weeks later, my wife and I were awakened by an excited phone call from Switzerland at 5:00 A.M. from Brodsky and his wife, both now safely out of the USSR, and thrilled to be free. We all had dinner at our house on the campus a few months later, and received a first-hand account of their unhappy journey, and its happy ending.

On May 28, 1987, at the time of the Moscow IPPNW meeting, I met with Andrei Saccharov and his wife, Elena Bonner, and had supper at their apartment. It was only five months before that Gorbachev had invited the great Soviet physicist, architect of the Soviet H-bomb, Nobelist and the USSR's most famous dissident to return to Moscow after seven years of internal exile in the closed city of Gorky. Saccharov had written in 1980 that "the questions of war and peace and disarmament are so crucial that they must be given absolute priority." But with Glasnost in the air, the matter of Human Rights continued to pre-occupy him, and his voice was never stilled.

These are just a few examples of the "bridge" function. Beneath a broad umbrella, physicians from vastly different national, geographic, political, ethnic, economic and value-based backgrounds succeeded in carrying on a conversation, effecting change, educating each other and our respective constituencies, and pressuring government to act so as to moderate the huge threat to human health and life. The mobilization of thousands of medical voices towards a life-enhancing societal goal can create a power bloc of great influence.

Participation in such a movement is a single facet of Activism, which I consider the "Fourth Dimension" of Biomedicine. Activism means engagement, involvement, sharing a voice or an activity, individual or joint or cooperative action in an area of need. There are many avenues, levels, and values that converge on the term. It represents an understanding that there are large areas beyond our professional work and achievements that link to urgent continental or planetary needs. It stems from the connectivity of all humans and the awareness of that great universal community in which hundreds of thousands of smaller ones co-exist. It reflects a sense of values that derive partially from the Enlightenment and persist in religious and secular humanism over time.

You may ask, "Why expand the notion of participation in the vast array of areas of need to Stanford medical and graduate students, for heaven's sake? After all, your projects in the last year or more have taken you to 48 countries in Africa, Asia, Europe, South and Central America and Australia. You have spent time in Zimbabwe, Mongolia, Nepal, Tanzania, Nigeria and China. You were involved not only in research but also in vaccine programs, dehydration assessment, improving maternal health and other important goals."

The answer is that you are entering a new phase, a giant step on the road to the independent lives you will all lead, with huge demands on your time and energy that may limit your vistas as the 24 hour day consumes you. You may find it difficult to find the time to savor and enjoy the activist experience.

During meetings past midnight in PSR and IPPNW we often asked ourselves, when time was short and competing priorities urgent, what can any one person do? Why waste our energy? Can we justify this "digression" from the professional roles that we have trained for all our lives?

At any juncture in the life of a free society and the democratic process, we ask ourselves the same question: what good does it do? One voice in the wilderness cannot change history; add a few more or even a few thousand more and they represent a tiny fraction of the whole.

But as the day ended in Oslo at the time of the IPPNW Nobel award and the procession moved from downtown Oslo to the Aula, the great auditorium, there was a strong sense of faith in the renewal of the individual and his ability to have an impact. We could then recall the words of Robert Kennedy in Capetown in 1966:

“Each time a man [or woman] stands up for an idea, or acts to improve the lives of others or strikes out against injustice, he [she] sends forth a tiny ripple of hope, and crossing each other from a million different centers of energy and daring, those ripples build a current which can sweep down the mightiest walls of oppression and resistance.”

Awards and Honors

2007 Stanford University School of Medicine Award for Graduate Teaching
Tim Stearns, Biological Sciences and Genetics

2007 Stanford University School of Medicine Award for Outstanding Service to Graduate Students
Karla A. Kirkegaard, Microbiology and Immunology

Arthur L. Bloomfield Award for Excellence in the Teaching of Clinical Medicine
James Baxter, Medicine
Paul Fisher, Neurology and Pediatrics

The 2007 recipient of the Henry J. Kaiser Family Foundation Award for Outstanding and Innovative Contributions to Medical Education
Audrey Shafer, Anesthesiology

The 2007 recipients of the Henry J. Kaiser Family Foundation Awards for Excellence in Preclinical Teaching
Ben Barres, Developmental Biology and Neurology
Gilbert Chu, Medicine - Oncology
Drew Nevins, Medicine – Infectious Diseases

The 2007 Kaiser Family Foundation Awards for Excellence in Clinical Teaching
Paul Fisher, Neurology and Pediatrics
Steven Guest, Nephrology
John Jernick, Medicine – Family and Community Medicine

Franklin G. Ebaugh, Jr. Award for Outstanding Dedication to Advising Medical Students

Elizabeth Stuart, Pediatrics

The Lawrence H. Mathers Award for Exceptional Commitment to Teaching and Active Involvement in Medical Student Education

Neil Gesundheit, Medicine – Endocrinology

The Arnold P. Gold Foundation Award for Humanism and Excellence in Teaching by Residents

Anthony Caffarelli, General Surgery

Shari Chevez, Pediatrics

Gregory Feldman, General Surgery

Noelle Johnstone, Pediatrics

Eliza Long, General Surgery

Aaron York, Psychiatry

The Alwin C. Rambar-James B.D. Mark Award for Excellence in Patient Care

Yasser Y. El-Sayed, Obstetrics and Gynecology

2007 GRADUATES

MASTER OF SCIENCE

Aneel Advani

Biomedical Informatics

Kelly Ann Basinger

Biophysics

Michael Nathaniel Cantor

Biomedical Informatics

Ian Richard Carroll

Epidemiology

Kevin E. Chan

Epidemiology

Alicia Hsin-Ming Chang

Epidemiology

Samantha Pei -Ting Chui

Biomedical Informatics

Lorinda Chung

Epidemiology

Gregory Engel

Epidemiology

Kurt Hwa Huang

Biomedical Informatics

Sun Kim

Epidemiology

Allison Walsh Kurian

Epidemiology

Joseph Eric Levi tt

Epidemiology

Hau Liu

Health Services Research

Christina Tzung-Ying Lu

Biomedical Informatics

Sharon Elizabeth Moayeri

Health Services Research

John Yungjoo Park

Biomedical Informatics

Young Sun Park

Molecular and Cellular Physiology

Erin Gourley Reid

Epidemiology

Julianna Theresa Ross

Microbiology and Immunology

Venkata Ratnam Saripalli

Biomedical Informatics

Michael David Scanlon

Neurosciences

Kanaka Das Shetty

Health Services Research

Trenna Sutcliffe

Epidemiology

Aaron Tam

Biomedical Informatics

Robin Varghese

Epidemiology

Joyce Vilija

Health Services Research

Jonathan David Weiss

Health Services Research

Christine Hyoja Won
Epidemiology

Denise Kar -Yan Woo
Epidemiology

DOCTOR OF PHILOSOPHY

Rosanna 'Anolani Alegado

Microbiology and Immunology
Characterizing the Processes Involved in Establishment of Salmonella Typhimurium in the Intestine of Caenorhabditis Elegans

Laura Louise Almstead

Microbiology and Immunology
Inhibition of U snRNP Assembly by A Virusencoded Protease

Wade Charles Anderson

Developmental Biology
Mobilization of Hematopoietic Stem Cells

Katherine Marguerite Armstrong

Neurosciences
Control of Visual Cortical Signals by Microstimulation of the Frontal Eye Field

Constadina Arvanitis

Molecular Pharmacology
MYC Inactivation and Tumor Regression

Shirin Bahmanyar

Molecular and Cellular Physiology
Functions for Adenomatous Polyposis Coli (APC) and Beta-catenin at the Centrosome

Yu Bai

Biophysics
Electrostatic Underpinnings for Nucleic Acid Structure and Folding

Kenneth Hong-Kim Ban

Cancer Biology
Localized Regulation of the Anaphase-promoting Complex by the END Network

Shelly Beer

Cancer Biology
Developmental Context Influences the Ability of the MYC Oncogene to Induce Tumorigenesis

Joseph Fossland Bergan

Neurosciences
Adaptive Dynamics of the Barn Owl Auditory Space Map

Stephanie Marie Brandt

Microbiology and Immunology
Fruit Fly Innate Immunity, Infection and Disease

Alyssa Ann Brewer

Neurosciences
Visual Field Map Properties and Plasticity in Human and Macaque Corte

Mary Margaret Brining

Microbiology and Immunology
Evolution and Host Restriction of the Respiratory Pathogens Bordetella Pertussis and Bordetella Parapertussis

Christopher David Brown

Genetics
Functional Architecture and Evolution of Cisregulatory Elements that Drive Gene Coexpression

Marianne Campbell

Microbiology and Immunology
Characterization of the Roles of Myocyte Enhancer Factor 2 (MEF-2) and Calcineurin in C. Elegans Innate Immunity

Sophie Isabelle Candille

Genetics
Genetics of Pigment-type Switching and Coat Color Patterning in Mice and Dogs

Elizabeth Danhwah Chao

Biochemistry

Genomic Analysis of Drosophila Tracheal Organogenesis: Identification of a Transcriptional Target of Trachealess Mediating Cell Adhesion and Mobility

Erin Gayle Cline

Molecular and Cellular Physiology
Characterization of Mammalian Par 6 as a Novel Dual Location Protein

Marlene Rochelle Cohen

Neurosciences
Dynamics and Flexibility of Population Coding in the Middle Temporal Area

Gregory Michael Cooper

Genetics
Evolutionary Constraints on the Human Genome

Sara Joan Cooper

Genetics
Better Understanding Transcriptional Regulating Using High-throughput Biology

Gregory Corrado

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Bryan B. Gore

Neurosciences
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Angela Teresa Hahn

Molecular and Cellular Physiology
Development and Implementation of a Live Cell Cycle Fluorescent Biosensor System

Christopher Haines

Immunology
TEC-1 is a Novel Marker for Human CD4+ Recent Thymic Emigrants

Jeremy Josef Heit

Developmental Biology
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Kristina Marie Herbert

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Matthew Phillip Kirschen

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Matthew Phil Klassen

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Kirstin Suzanne Knox

Genetics

An Investigation of Evolution, Endocrine Function, and Disease Pathogenesis of the Murine Placenta

Daniel A. Kraut

Biochemistry

Testing the Role of Transition State Complementarity in the Oxyanion Hole of Ketosteroid Isomerase

Annette Magdelene Langer -Gould

Epidemiology

T Cells, Pregnancy and Multiple Sclerosis

Boaz Pirie Levi

Biochemistry
Genetic Control of Tube Formation and Maintenance in Drosophila Tracheal Terminal Cells

Ai Lin Lim
Cancer Biology
Novel Roles of Hypoxia in Modulating Tumor Progression

Neil Bradford Lineberry
Immunology
Substrate Specificity for the E3 Ligase GRAIL Depends on Regional Ubiquitination of Transmembrane Target

Ryan K. Louie
Molecular and Cellular Physiology
The Roles of Adenomatous Polyposis Coli and Binding Partners EB1 and Beta-Catenin in the Regulation of Microtubule Dynamics and Organization

Riina Maei Luik
Molecular and Cellular Physiology
Molecular Mechanisms of Store-operated Calcium Signaling in T Cells: Local Activation of CRAC Channels by STIM1, the ER Calcium Sensor

Christina A. MacDougal
Chemical and Systems Biology
Structural Determinants for Activation of the ATR-Dependent DNA Damage Checkpoint

Ryan MacFarlane
Microbiology and Immunology
Identification of Virulence Determinants in the Protozoan Parasite Entamoeba Histolytic

Devanand Sadanand Manoli

Neurosciences
Fruitless Regulation of the Neural Substrates of Sexual Behavior in Drosophila

Joshua David Mast
Neurosciences
Exploring the Mechanisms Underlying Synapse Loss and Neurodegeneration Induced by Mitochondrial Dysfunction in Drosophila Melanogaster

Amanda Mikels
Cancer Biology
Use of Purified Proteins to Examine Alternative Wnt Signal Transduction Pathways

Nesanet Senaite Mitiku
Genetics
Genomic Analysis of Early Mouse Development

Felix Mueller -Planitz
Biochemistry
Domain Communication in DNA Topoisomerase II

Brian Thomas Naughton
Biomedical Informatics
Sequence Analysis Methods for the Detection of Promoters and Transcription Factor Binding Sites

Taavi Neklesa
Biochemistry
Regulation of TOR Kinase by Superoxide Anions and Conserved Npr2/3 Complex

Kuang Hung Pan
Biomedical Informatics
Platform of Knowledge-based Algorithms for High-throughput Genetic Analysis
Luiz Carlos Pantalena-Filho
Developmental Biology
The Role of BMP5 Cis-regulatory Elements in Encoding Skeletal Morphology

Zachary Scott Pincus
Biomedical Informatics
*Analysis and Applications of
Quantitative Representations of Cell
Morphology*

Daniel Ramot
Neurosciences
*Neural Recordings and Quantitative
Behavioral Analysis of Temperature
Sensation*

Emily Elizabeth Ray
Cancer Biology
*Identification of a Conserved Acidic
Patch in the Myb Repeat Required for
Activation of Endogenous Targets and
Chromatin Binding*

Cornelia Rinderknecht
Immunology
*Post-translational Regulation of Class II
MHC by Affinity for Class II-associated
Invariant Chain Peptides (CLIP):
Implications for Autoimmunity*

Madolyn Bowman Rogers
Developmental Biology
Control of CNS Neuronal Survival

Rory Abbott Sayres
Neurosciences
*Decoding fMRI Response Patterns in
Visual Cortex: Effects of Object
Category, Identity, Retinotopic Position
and Short-term Experience*

Laura Rose Schaevitz
Neurosciences
*Transcriptional Regulating of
Neocortical Patterning During
Development*

Jing Shi
Biomedical Informatics
*Bioinformatics Tools for Analysis of
Pathways and Gene Expression*

Sheela Iyer Singla
Neurosciences
*Mechanisms and Functional Implications of
Long-term Synaptic Plasticity in Striatum
and Network Plasticity in the Hippocampus*

Sandra Simoes Slutz
Genetics
*Pathogen Specific Immune Responses in
Caenorhabditis Elegans*

Kerrin Shannon Small
Genetics
*Extreme Genomic Variation in a Natural
Population*

Julie Beth Sneddon
Biochemistry
*Stromal Factors in Tumor Biology and
Prognosis*

Christopher Snow
Biophysics
*Protein Folding Kinetics with Ensemble
Molecular Dynamics*

Tatana Spicakova
Cancer Biology
*The Role of Lsm1 Protein in Response to
Ultraviolet Radiation Damage in
Saccharomyces Cerevisiae*

Heather Lynn Stickney
Developmental Biology
*Functional Genomics and the Role of Bmp4
in Patterning the Early Zebrafish Embryo*

DOCTOR OF MEDICINE

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San Francisco, CA • Research

Amit Kamal Bakri

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Norman Blank, M.D. Award

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*The Department of Medicine Allen B.
Barbour Award for Excellence in Internal
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San Francisco, CA • Anesthesiology

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San Francisco, CA • Anesthesiology

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Feinberg Medical School of Northwestern
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Ravi Ramachandran

Yale New Haven Hospital
New Haven, CT • Orthopaedic Surgery

Samuel Emlen Rice-Townsend

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Giridhar Mysore Shivaram

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Tracy Yuen Linn So

Barnes-Jewish Hospital at Washington
University Medical Center
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Farzad Soleimani

Residency to Begin in 2008

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University of Colorado Health Sciences
Center
Denver, CO • Ophthalmology

Amy Pui Wah Wu

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Medical Center
La Jolla, CA • Otolaryngology

Celina Mei Yong

University of California at San Francisco
San Francisco, CA • Internal Medicine

It took a lot of organizing, planning and hard work to have the Commencement events run so smoothly. Many thanks to Zera Murphy, Suzanne Bethard, and their team – Ann Davis, Joann Berridge, Jana Baldwin, Mira Engel, Lorie Langdon, Kathy Fitzgerald, Velissa Peairs and Cass Sooter – for a job well done!

Upcoming Events

Medical Grand Rounds – Note: New Day and Location

Starting Wednesday, July 11th Medicine Grand Rounds will occur every Wednesday, from 8 – 9 am, in M-106. For additional information or questions please contact Sarah Pearson at sarahp1@stanford.edu or 650-498-4558.

Awards and Honors

Dr. Donna Bouley, Associate Professor of Comparative Medicine, has won the Dinkelspiel Award for exceptional contributions to undergraduate education and the quality of student life at Stanford. Congratulations, Dr. Bouley.

The following 46 of our students received the prestigious and highly competitive National Science Foundation Graduate Research Fellowships. Several of our students also received Honorable Mention in the NSF Fellowship competition.

Biochemistry

Nicole Cobb
Stephanie Weber
Nicolas Tilmans - Honorable Mention

Biological Sciences

Kevin Miklasz
Jason Ladner
Shelby Sturgis - Honorable Mention
Rachel Adams - Honorable Mention
Andrew Carroll - Honorable Mention
Blaise Hamel - Honorable Mention
Qinzi Ji - Honorable Mention
Maria Spletter - NIH-NRSA Predoc Fellowship

Biophysics

Gregory (Greg) Bowman

Cancer Biology

Alan (Hunter) Shain
Johanna Schaub
Catherine Del Vecchio
Katherine Jameson - Honorable Mention
Kartik Viswanathan - Honorable Mention
Xiao Xu - Honorable Mention
Daniel Dickinson - Honorable Mention
Michelle Marques –Honorable Mention

Chemical and Systems Biology

Denise Chen - Honorable Mention

Developmental Biology

Angela Kulp

Jose Morillo

Abraham (Abe) Bassan

Alya Raphael - Honorable Mention

Paul Nagami - Honorable Mention

Erika Bustamante - NIH Predoc Fellowship

Genetics

Monica Rodriguez

Jamie Conklin - Honorable Mention

David Goode - Honorable Mention

Simona Rosu - Honorable Mention

Eric Van Nostrand - Honorable Mention

Jared Wenger - Honorable Mention

Immunology

Amy Palin - Honorable Mention

Luis Zuniga - NIH Predoc Fellowship

Microbiology and Immunology

Audrie Lin

Junaid Ziauddin

Molecular and Cellular Physiology

T.D. Barbara Nguyen-Vu

Neurosciences

Emily Drabant -

Christopher (Chris) Olin

Joy Wu

Alexander Pollen

Other SoM Graduate Programs

Bioengineering

Stephen Lee

William Yang

Elbert Hu

Biomedical Informatics

Sarah Aerni

Appointments and Promotions

- ***Sheri M. Krams*** has been reappointed to Associate Professor (Research) of Surgery, effective 7/1/07.
- ***Jun Lin*** has been appointed to Assistant Professor of Psychiatry and Behavioral Sciences, effective 7/1/07.
- ***Jianghong Rao*** has been appointed to Assistant Professor of Radiology, effective 7/1/07.
- ***Zijie Sun*** has been appointed to Associate Professor of Urology and of Genetics, effective 6/1/07.