Dean's Newsletter
June 13, 2011

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Commencement 2011

We celebrated the School of Medicine and Stanford University Commencement on June 11-12th. This year advanced degrees were awarded to 261 School of Medicine students, including 39 Master of Science Degrees, 126 Doctor of Philosophy Degrees and 96 Doctor of Medicine Degrees. A number of students were the recipients of one or more advanced degrees – some awarded concurrently this year and others sequentially over past years. This was the first year we held commencement on Alumni Green, facing the Clark Center, Fairchild Science, the Li Ka Shing Center for Learning and Knowledge, the Beckman Center and the Lorry Lokey Stem Cell Research Building and proximate to the new Science and Engineering Quad and to our main teaching hospitals, Stanford Hospital & Clinics and the Lucile Packard Children's Hospital. This contiguous alignment of research, education and patient care on the campus of a major university is one of the unique features of Stanford Medicine. But what really differentiates us is the quality of our students, trainees and faculty – and commencement is an opportunity to recognize and celebrate the incredible accomplishments of our students. They offer hope at a time of tremendous changes in our healthcare and research landscapes.

Commencement is also an opportunity to recognize and celebrate the contributions of our students and trainees to teaching and learning. We are the beneficiaries of shared learning opportunities as well the creators of new knowledge. This interface is also an essential component of the distinguishing culture that defines Stanford.

I want to thank the many dedicated individuals who organized the Commencement events and staffed them with such a high degree of professionalism and excellence, especially Zera Murphy, Director for Student Life, and her team of volunteers who gave up part of their Saturday to lend a hand. I appreciate all their efforts.

Nearly a third of the students receiving the Doctor of Medicine degree will continue their training at Stanford. Overall, while students will relocate to 14 states, nearly 80% will continue

their training in California, Massachusetts, New York, Washington or Maryland. In celebrating our students who will be continuing their lives in science, medicine and other important ventures, we also remembered with deep respect Emma Bakes, who would have received her MD degree on June 11th but who, tragically, died of cancer on February 28th. Emma came to Stanford Medical School following a distinguished career as an astrophysicist and with a deep passion to become a doctor. Sadly, Emma's greatest lessons about medicine came from being a patient – but she inspired all whom she met and her memory will live on through the Emma Bakes Scholarship. Since she completed all of her requirements for graduation, we awarded her MD degree in her memory and for her family and friends.

Student Speeches

A tradition at the School of Medicine Commencement is to hear comments from a graduating PhD and MD student who has been elected by his or her classmates. I am pleased to share their comments with you:

Remarks from Graduate Student Speaker - Joel Dudley, PhD Candidate in Bioinformatics

First of all, allow me to thank my fellow classmates for electing me to speak today, and also thanks to Zera Murphy, Dean Pizzo and many others who have worked hard to make it possible to celebrate this commencement today.

When I sat down to write this speech, I was feeling a bit daunted, so I began reading biographies of some of the notable graduate students from Stanford's history. I started reading about people like Larry Page and Sergy Brin who founded Google, and Jerry Yang and David Filo who founded Yahoo! Then I realized that these guys all started billion dollar, world-changing companies before they ever finished graduate school. And then I thought, wow, maybe I've actually failed somehow because I ended up making it to graduation without starting a world-changing company. So, I stopped doing that, because it was getting a bit depressing to be honest. Then I thought, hey, I'm an informatics guy, I should be able to write a computer program that will write the speech for me. So I put together some software that would try to extract the essence of commencement speech text and first fed it the commencement address text from (a well-known public figure).

So then thought to myself, very simply, "what does it mean to obtain a graduate degree from Stanford?" So, we are all walking away with MDs, PhDs, and masters degrees, good for us, but these degrees can be obtained at countless institutions across the country. Does it mean anything that we are getting our degrees from Stanford in particular, and if so, what? Now, we all know intuitively that Stanford is a unique place, and that there is no other university like it. But I think you'll all also agree that this is a very difficult understanding to put into words. Then it hit me when I was reading books to my son one night. I happened to be reading one of the Harry Potter novels to my son when it struck me that Stanford is our real-world Hogwarts School. Many of you probably know that Hogwarts is the magical place in the world of Harry Potter where all the wizards go to school. Now, I'm not saying that Stanford is like Hogwarts because we also have a bunch of young wizards roaming the halls, which we do. Rather, Stanford is just like Hogwarts because the extraordinary is ordinary. For those of you who have read the books or seen the

movies, you know that at Hogwarts School, the paintings move around and talk, the staircases are constantly flipping around the school, and other little bits of magic are part of the ordinary day-to-day life in the school. Now Stanford is exactly the same in that there are extraordinary magical things happening here on a day-to-day basis that are just part of the everyday experience at Stanford.

Here at Stanford it is ordinary for an MD and an engineering student to take classes together in the Stanford design school and work side-by-side on the next generation of innovative healthcare projects. At Stanford it was ordinary to see iPads in the hands of patients and doctors mere weeks after they became available. At Stanford it is ordinary for bioscience med students to take entrepreneurship courses taught by VCs to help them take their ideas and innovations to market. At Stanford it is ordinary for MD and PhD students to take a course that lets them get hands on experience hacking their own personal genomes, or to get hands on experience making induced pluripotent stem cells when the rest of the medical world i still trying to learn what these things even mean. At Stanford it is ordinary for students to write their own iPhone apps to make their research easier, or for pediatricians to collaborate with computer science professors to hook next generation artificial intelligence algorithms to pediatric ICU equipment to realize the future of data-driven healthcare. I'm sure that given the time, many of you could come up with numerous more examples of this kind of magic that is part of the everyday life at Stanford, and I think that we can all agree based on our own personal experiences, that the extraordinary is ordinary here at Stanford in that we are creating and working in the future of science and medicine here on a daily basis.

The science fiction author William Gibson once said, "The future is here. It just isn't evenly distributed." Since we have been living the future of scientific research and healthcare throughout our training here at Stanford, I believe it is our responsibility, as fresh graduates of this unique environment, to distribute this future to the rest of the world. Now I don't think it's news to everyone here that our country and our world is in a bit of a slump. The entire country is looking for the next wellspring of innovation that is going to pull us out of this economic slump into another wave of prosperity. Do you think they are looking at the east coast, at Wall Street to pull us out of this slump? I don't think so. I can tell you that the whole country, maybe the whole world is looking west to Silicon Valley for the next wave of innovation. And many of you know that Stanford and its professors and graduates are at the heart of innovation here in Silicon Valley. Some of you may recall that a few months ago President Obama came to visit this area and he landed his Marine One helicopter directly on Stanford Campus soil. I think there was a lot of symbolism to that gesture. I don't think he landed his helicopters on our campus as a matter of convenience. Let's face it, SFO is only 30 minutes away and the heavily-guarded NASA Ames research center airstrip is just 15 minutes away. No, I think the President himself was making it clear that he has high hope for the continued innovation capacity of Stanford to drive us out of this rough patch.

In a way I'm somewhat sorry to conclude that just when you thought you were graduating and could ride the prowess of the Stanford name into a cozy perch in the working world, that our Stanford degrees carry a tremendous responsibility. It is not possible for you to get your next job and sit back and relax and think, "Well, I'm just going to run with the pack here and hope that someone does something to fix this economy." You have to realize that we are critical players in the future of this country and this world because nobody has been trained like us. Because you

have been here at Stanford so long, you likely take all the extraordinary aspects of your training for granted. But I'm telling you that once you get out into the wild of the "real world" you will very quickly realize how special you training has been. Therefore it is imperative that we rise to the occasion and push to realize the full potential of our training. I know that you can do it. And how do I know? Because that's exactly what every Stanford Medical School graduate has done before us. Just spend a few minutes on Wikipedia reading about our predecessors and you will be in awe of the legacy that is ours to maintain.

Remarks from Medical Student Speaker - David Craig

It is my unbelievable honor to be speaking to the 2011 graduating class of the Stanford University School of Medicine. A class of intelligence, compassion, extreme good looks. And now, a class of doctors. And, lest we forget, we are an historic class at Stanford: the final class to graduate without having passed even one course in a distinguished manner. Graduates of 2011, hold your heads high, for we were the straw that finally broke the camel's gradeless back; the class that found the thin line between pass and fail and deeply explored its meaning. Although, in truth, none of you ever needed a mark, good or bad, to motivate you; you are people whose native passion and internal motivation will always far outstrip the reach of any red pen. We are these people. And when the administration of this world class medical institution asked us to help shape the new grading system, to provide feedback and assistance from a student perspective, we responded like the most noble of creatures in a structure fire: by getting the hell out of the building.

Which is why we are all sitting here today, preparing to go from the frying pan of medical school to the ...armageddon of residency. And if you remember the commotion about the rapture a few weeks ago, well, it turns out that they just got the date wrong: a correct reading of all major religious texts predicts a yearly bump in the number of souls on the way to heaven every July 1st. But don't worry, you won't be going anywhere when it happens: you will be on call. They say that when a new doctor is made, an angel gets its wings, and now that I see just exactly what we know at the end of medical school, I realize that the phrase is meant literally.

Indeed, we are headed far and wide next year, the newest foot soldiers in the war against disease that leaves not one of us on this planet untouched, a true world war in a pure and timeless sense. And my classmates, though your staggering debt load may prevent you from sleeping on an actual bed, you can at least sleep soundly knowing that you have chosen to fight on the right side of this war. We all know that there is profit to be made, quickly and in abundance, in spreading fear and ignorance, in promoting poor health, in disregarding or denying the sorrow of another human being. You have instead chosen to hold a candle against these things, to enter into a profession where even your daily commute is a statement against suffering and a habitual reaffirmation that good exists. And believe me, this is the only way that a rusted 1993 Geo Metro driving at 6 am will ever be considered a sign of good in the world.

As interns, you will not set all of the care plans, but you will be the constant presence at the bedside, the face that appears in a patient's mind when they wake up at 2 am in pain and in need of "their doctor." In this part of the war against illness, you will be the pointy tip of the Foley, the first to respond and uh...relieve the situation. It will be on you to show up, maybe tired,

maybe frustrated after a long day, at 2:05 am and bring to bear your skill and above all your compassion, from trench to bedside.

You are an amazing and accomplished group of colleagues, and it would take me all day to list even those of your achievements that I know off the top of my head. But we did not get here alone; we were supported, mentored, guided. We had help. From family, friends, teachers, patients. Innumerable people chipped in and sacrificed so that we might develop, some in ways that we will never fully comprehend or possibly even realize, and we would be remiss not to spend some time thanking them. With that in mind, here we go...thanks.

It is actually a peculiar deficiency in our language that we only have the word "thanks" to express gratitude. "Thanks" is what you say to the guy who made your coffee; "thanks" is what you say when somebody holds a door. What do you say, then, to somebody who has, for decades, given variously of their body, their career, their savings, their thoughts, and above all of their time to you? What do you say when, to your shame, you were sometimes less than grateful for these indescribable gifts, when they had to be given out of nothing but faith, determination, and a transcending love that has inspired some of the best literature and worst tattoos in the history of our species? I guarantee you that there is not a person in a robe here today who is not thinking about their parents, biological or otherwise, and I also guarantee you that we don't know what to say. It certainly is not just "thanks." Personally, I can only think to express my gratitude in the way that I always have and will always in the future: by calling home once every two weeks and asking how the cat is doing.

Our advisors. Drs. Blaschke, Knox, Salvatierra, and Gesundheit. To say that you tolerated our harebrained ideas and rants is both selling you short and seriously underestimating the intelligence of a hare. Thank you.

Our medical administration and deans. While we may not have always agreed on policy, your doors were always open, and working with you was always a tremendous privilege, both when the white coats were off and especially when they were on. In a world where people are often content to ignore you if not work intentionally against your best interests, I have never doubted that you had ours in mind constantly. You are role models for ascetic, civic-minded self-sacrifice, to the degree that, should I ever be in a position of leadership in the future, I hope dearly that I will prove far more effective than all of you at using my power to enrich and glorify myself. You have a strong and definite vision for the future of medical education, bringing us both an innovative new clinical evaluation system called "grades" and a beautiful new building full of equipment so expensive that experts estimate its sale at auction would generate enough money to pay up to half of one student's medical tuition next year.

You have given us other bold new programs, too, such as Educators4Care. An initiative that has identified some of the most skilled and dignified physician educators in our institution and put them to work for a project whose name is based on a number pun. In its naming, Educators4Care finally elevates Stanford to the lofty ranks inhabited by such cultural institutions as the musicians of 2 Live Crew, the videogame Left 4 Dead, and of course the 2003 cinematic masterpiece featuring Ludacris, 2 Fast 2 Furious. Thank you for that.

And for the future, you have ensured that we will never forget medical education, largely because you have ensured that we will be paying for ours until the heat death of the universe, when physicists tell us that all motion and life will stop, but several government loan agencies remind us that we will still be responsible for all of our borrowed money. Interestingly, the idea of free medical education has become more trendy recently. I think that this is a fantastic idea, but I will block it with my life if its provisions are not also retroactive. And don't worry, deans, I mean that for you, too. I will see to it personally that you are fully refunded the three-hundred dollars that you paid directly to Dr. Osler himself for your medical educations in the time before the great flood.

At this point, I should note that I thought that I would be receiving my diploma before this speech.

And so we transition. My classmates, Stanford made us colleagues, but we made ourselves friends. And if ever you become nostalgic and miss the last four to eleven years of your life, you need only to load an online medical lecture at 200% of the normal speed, and you will be home again. But still it is with a huge amount of sadness that I watch all of you ready to disperse; we have just barely become doctors, and already we're itching to leave the room too fast. You're set to go to so many amazing and influential cities, such as Boston, New York, Los Angeles, and...other. And undoubtedly you will make a difference for the better in innumerable lives, as I know you already have. In truth, after spending the last several years with you, I can say honestly that medical school has only made you doctors in the way that a microphone makes somebody a singer. The letters "MD" will magnify your impact and open doors for you, will let you reach into more and darker corners of the world and spread hope and comfort there. That is true. However, those letters work only like a microphone, only amplifying what you put into them. And a microphone will never make you a singer, just as an MD will never make you a doctor. It is now just as it has always been: you have to bring your own voice, and it is, in the end, the only thing that matters.

I'd like to close now by ripping off a more experienced speaker. Everybody here who is affiliated with Stanford medicine knows that our community suffered an unfathomable loss this year with the death of Dr. Gregory Feldman, a surgeon and teacher whose profound, protean talent was matched only by the degree to which he was beloved. I know for a fact that his influence directed many of the graduates here today, and he is and always will be instantly and permanently missed. What you may not realize, however, is that some years ago, Dr. Feldman gave a commencement address for his graduating class at some medical school in Boston that I have never heard of. And this speech was so good that it ended up on youtube, where I will be stealing from it for the rest of my life. Birthdays, bar mitzvahs, my own wedding vows, all of it. I'd like to end now as he ended then:

"In medicine, as in life, it's far more important to be lucky than to be good. My friends and classmates, we've spent the last 4, 5, or in some cases, 37 years of our lives studying to get good, and not one of us graduating today can effectively treat lower back pain. So as we move forward into our residencies, let us resolve to take the focus off getting good and concentrate instead on getting lucky. Thank you."

Commencement Address by Dr. Elizabeth Blackburn

We were very fortunate to have Dr. Elizabeth Blackburn as our 2011 School of Medicine Commencement Speaker. Dr. Blackburn is the Morris Herztein Professor of Biology and Physiology in the Department of Biochemistry and Biophysics at UCSF, where she has been on the faculty since 1990. Dr. Blackburn earned her undergraduate degrees at the University of Melbourne and then did her PhD at Cambridge. Her contributions to science have been extraordinary – especially her elucidation of the molecular nature of telomeres (the protective caps at the ends of chromosomes) and the ribonucleoprotein telomerase – work which earned her the 2009 Nobel Prize. In addition to being an incredible scientist, Dr. Blackburn is a courageous advocate for ethical principles and justice, as was shown by her decisions on the importance of stem cell research. She is deeply admired by the national and international scientific community and stands as a role model of excellence.

First and foremost, warm congratulations to all you Graduates – this is truly YOUR day – and congratulations to those who have helped make this day possible – your families, your teachers and friends who are here celebrating this significant day with you.

Thank you so very much, Dean Pizzo, honored guests, ladies and gentlemen – and most importantly! Graduates – for inviting me to this very special occasion today.

A scientific heroine of mine, the great physicist and chemist Marie Curie, who won a Nobel prize two times, said something that struck me: "Nothing in life is to feared. It is only to be understood."

This quote resonated with me and I hope it will with you too. I think it has meaning in ways relevant to you today.

First, as you go through the often unfamiliar territories that the journey of your life and career will take you on;

And second, as we consider where medicine and biological and biomedical research may go, with all the advances in knowledge in these areas that have happened and that will be happening.

First, the unknown directions of one's life. As I began my journey into biological sciences research and now, as I encounter issues of medicine and society arising from that research, surely those words of Marie Curie "Nothing in life is to feared. It is only to be understood" have been applicable. Although, I don't think my mother would have exactly appreciated them way back when my journey began, far away in Tasmania, Australia: as a small child living near the seashore I had the spine-chilling habit of picking up dangerous animals - poisonous jellyfish from the beach and stinging ants from twigs - and singing and crooning to them – behavior I thought perfectly natural, because I loved animals, but which was probably not good for the peace of mind of parents. So I think my mother would have appreciated me having a little more fear then!

I was lucky to be given the circumstances in life that could transmute that childhood enthusiasm into a lifelong passion for doing science. These circumstances included the opportunity to have a

great education, as you graduates have had here at Stanford. But more importantly, to have the opportunity to join something much bigger than myself – I mean here the great enterprise of biological and biomedical research. It was a huge privilege to become a part of a tradition of learning and scholarship and to become an active contributor to the surge and excitement that exist in the quest for discovery in science and medicen. So how do Marie Curie's words "Nothing in life is to be feared, it is only to be understood" apply here?

Well, the paths many of you will choose after your graduation will be demanding. As has been my experience, throughout your lives and careers you are going to have to encounter the new and unfamiliar, which can engender fear. Specifically, the many profound triumphs of medicine and biological research to date now confront us with a myriad of completely new challenges. So, instead of sticking with what worked in the past, one will have to fearlessly open one's mind to new ways of thinking and approaches.

My own path in biology has allowed me to experience this in various ways. First, for my research that led to our discovering the molecular nature of chromosome ends, and to the discovery of the enzyme, telomerase, that maintains these ends – we had the freedom - the sometimes scary freedom - to do novel experiments, that sometimes necessitated stepping into byways away from the mainstream of research. For biology often reveals its general principles through what may seem at first to be arcane and bizarre. Specifically, we studied obscure, harmless, tiny single celled creatures in pond scum, called Tetrahymena. - Tetrahymena even have not two, but seven sexes – reminding us that there is more going on below the calm surface of ponds than we might think! Why did we study such exotic-seeming creatures? Because they have many, many short, linear chromosomes, making them perfect for molecular studies of chromosome ends, and I was curious about a mystery of nature: how are the ends of chromosomal DNAs replicated without losing terminal DNA sequences?

Well, this tiny organism - certainly not a household name, or mainstream - enabled me to find out the molecular nature of chromosome ends – call telomeres - and we discovered that without the special telomeric DNA and its unique mode of replicating, chromosome ends gradually shorten as their telomeric DNA erodes away, eventually causing cells stop dividing altogether. This might have seemed on the surface obscure. So why did it matter? Well, these protective chromosome caps, the telomeres can wear down – shorten - with age in people, and short telomeres signal cell death. Thus if telomeres shorten the cells lose the ability to self renew, or even become genetically unstable. And, chromosome ends <u>often</u> wear down as we age.

And this leads to the second reason Marie Curie's words "Nothing in life is to be feared; it is only to be understood" resonates with me, and I hope will with you too. This reason relates to where medicine and biomedical research may go. Because, unexpectedly, our research work has led me, and many others, into questions of human diseases, such as cancer.

From the work of many groups worldwide, including, I am proud to say, ours, it is now emerging that telomeres and their maintenance are relevant to at least one aspect of an age-old question that humans have been asking for millenia: how do we age?

Now, while aging is of course a many-faceted process, one unwelcome fact about it for humans is increased susceptibility to the diseases of aging – cancer, heart diseases, diabetes, etc.

Emerging evidence is linking inadequate telomere maintenance - that is, the wearing down with age of the protective caps at the ends of chromosomes - to this facet of aging. What contributes to inadequate telomere maintenance and, perhaps in turn, to diseases of aging? Genetic factors, yes, and non-genetic factors, and combined interactions of genetic and non genetic influences.

Indeed, in recent years, much research links this once only basic research into chromosome end maintenance to some of the commonest diseases of aging in people, to how peoples' health is impacted as they age, even by such factors as chronic, debilitating psychological stress, which can affect aging processes occurring at the very heart of our bodies' cells. Chronic psychological stress is a major part of modern life. So, our work even leads into the age old search for a deeper understanding of the mind-body connection, including how stress, feelings and thoughts, can affect health.

Our research has played right into these larger questions, presenting yet another new challenge: can this, originally lab-based, understanding of telomeres and telomerase be exploited in the quest to intercept or even prevent the now-common chronic diseases in society and improve health?

Freshly graduating from Stanford's School of Medicine, you have learned that major triumphs of 20th Century research and medicine have prominently included learning how to specifically diagnose and treat diseases. Beginning with gaining morphological understanding of disease states, more and more this success is now coming from cellular/molecular understanding of evolving disease processes. Ironically, it is these truly amazing triumphs - in understanding, treating or curing so many severe diseases and afflictions – that have brought the more delayed, slowly developing common diseases of in our societies - such as cancer, heart disease, diabetes - to the fore as looming medical challenges.

And the understanding of disease processes is now putting into our sights a wonderful goal: the prediction of disease risks, permitting less toxic and more effective interventions. Often, modern medicine necessarily emphasizes treatment AFTER symptoms arise and normal function is compromised. Ideally, we would intervene before symptoms appear, and thus preserve normal function. A great goal would be the ability to prevent or intercept these common diseases, with preservation of health at a population scale. And for these challenges we may need new approaches in medicine, and indeed in society.

I was not ever trained as a physician. But from asking basic questions about how cells work, and then later, by teaming up with wonderful clinical and other collaborators, we have gone into unexpected realms and made unanticipated findings, which perhaps may even help us do useful things for human health in the future. I've now become very interested in challenges and ramifications of medicine in the modern world – this was not an expected direction of my journey in research, so I have had to keep relearning new aspects of research through my professional life. So never be afraid of the new, as one cannot tell where your career might lead.

I hope that this story has illustrated that a journey in biomedical research can take unexpected turns and one always is learning. I want to emphasize how rewarding intense work can be: to wake up every morning excited about the work, and to feel it is worthwhile and important. So lastly, I want to touch on the question of balance in life. I have found great happiness in the

excitement and, yes, the fun of being part of something much larger than oneself: this quest to understand how life works and now its implications for human health.

Now, we sometimes think of balance as meaning having each day on some kind of normal schedule. But it is important not to lose the intensity of involvement needed to achieve significant work that you think is important. For me, rather, I think balance in life can be achieved over years, rather than on some daily or weekly basis. For some years I was completely absorbed in research. Later in my life, I joined into the mainstream of life and its complexities – it was a great joy to my husband and me when our son was born and having family life – making work and family scheduling complex of course! Later, in a different kind of balance, I began thinking about larger issues of the impact of biological and medical research in society, which brought me into arenas of national science policy and thinking about social justice. These have all been great adventures and now having received the Nobel Prize there are yet again some unexpected new adventures and experiences: For example: people sometimes come up and say " Can I touch you?" So I would urge you never be afraid of the new, remembering Marie Curie's words.

What I have I learned that I'd like to pass on to you? Go on your future journeys never fearing, but trying to understand. I have learned that a pursuit of something larger than myself is perhaps the most important thing one can do with one's education. So join something larger than oneself and use your education and training to benefit as many people as possible.

Thank you and congratulations, graduates.

Teaching Awards to Faculty and Residents

On June 1st we hosted the Annual Student Clinician Ceremony, honoring teaching and humanism in medicine. We celebrated medical students who completed their preclinical education and who are about to embark on their personal journey into clinical medicine. We also honored medical students who were being inducted into the Arnold P. Gold's Humanism Honor Society. In addition we recognized Residents at Stanford Hospital & Clinics and the Lucile Packard Children's Hospitals who were being honored by the Arthur P. Gold Foundation and Excellence in Teaching. And finally we recognized the faculty who were receiving awards for their excellence in preclinical and clinical teaching as well as in undergraduate education. Accordingly, this wonderful event brought together a community and continuum of teachers and learners from medical students to residents to fellows. Most importantly, the ceremony recognized the important links between medicine and humanism and between education and professionalism. Listed below are the various award recipients – who were also featured at Commencement.

Faculty Award for Teaching
Miriam Goodman, PhD, *Associate Professor, Department of Molecular and Cellular Physiology*

Faculty Award for Student Service
Olivia Martinez, PhD, *Professor, Department of Surgery (Immunology)*

The Arthur L Bloomfield Award In Recognition of Excellence in the Teaching of Clinical Medicine

Neera Ahuja, MD, *Clinical Associate Professor, Department of Medicine - General Internal Medicine*

Jeffrey Dunn,MD, *Clinical Associate Professor, Department of Neurology*

Jose Montoya, MD, *Associate Professor, Department of Medicine (Infectious Diseases)*

The Henry J Kaiser Family Foundation Award for Outstanding and Innovative Contributions to Medical Education

Andrew Connolly, MD, *Associate Professor, Department of Pathology*

The Henry J Kaiser Family Foundation Award for Excellence in Preclinical Teaching

Kathleen Gutierrez, MD, *Associate Professor, Department of Pediatrics (Infectious Diseases)*

Beth Martin, MD, *Clinical Assistant Professor, Department of Medicine (Hematology)*

Shefali Srivastava, MD, *Clinical Instructor, Department of Psychiatry and Behavioral Sciences*

The Henry J Kaiser Family Foundation Award for Excellence in Clinical Teaching

Jason Lee, MD, *Assistant Professor, Department of Surgery – Vascular Surgery*
John Morton, MD, *Associate Professor, Department of Surgery – General Surgery*
Eva Weinlander, MD, *Clinical Associate Professor, Department of Medicine – Family and Community Medicine*

The Franklin G Ebaugh, Jr. Award for Advising Medical Students

Karen Friday,MD, *Clinical Professor, Department of Medicine*

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

Jeffrey A Norton, MD – *Professor in Surgery, Chief, Surgical Oncology and General Surgery, Department of Surgery*

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

Lars Osterberg, MD, *Clinical Associate Professor, Department of Medicine – General Internal Medicine*

Allan V Cox Medal for Faculty Excellence Fostering Undergraduate Research

Garry Gold, MD, *Associate Professor, Department of Radiology – Diagnostic Radiology*

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

Erin Augustine, *Pediatrics – General Pediatrics*
Jason Bartos, *Medicine – General Internal Medicine*
Judith Hagedorn, *Urology*
Ronald Jou, *Surgery*

Zachary Kastenberg, *Surgery*
Joy Rusmintratip, *Psychiatry and Behavioral Sciences*

Gold Humanism Honor Society 2011 Inductees

Omar Amir, SMS 3
Patrick Avila, SMS 3
Krista Birnie, SMS 3
Blake Charlton, SMS 4
Ian Corcoran-Schwartz, SMS 3
Matthew Goldstein, SMS 6+
Richard Jones, SMS 3
Eric Leroux, SMS 3
Danica Lomeli, SMS 3
Long Nguyen, SMS 3
Keyan Salari, SMS 6+
Amanda Schwartz, SMS 3
Krishnan Subrahmanian, SMS 3
Rachel Sussman, SMS 3
Morgan Theis, SMS 3
Jane Whitney, SMS 3

Please join me in congratulating this exceptional group of students, residents and faculty for their teaching and humanism.

The 2011 Graduates
Masters of Science

Sarah Joann Aerni
Biomedical Informatics

Myla Ashfaq
Human Genetics and Genetic Counseling

Dipanjan Banerjee, M.D.
Epidemiology

Alexander James Butwick
Epidemiology

Gemma Chandratillake
Human Genetics and Genetic Counseling

Jennifer Chen
Biomedical Informatics

Tiffany Chen
Biomedical Informatics

Valerie Yuk Lan Chock
Epidemiology

Oliver Crespo Diaz
Master of Science in Medicine

Catherine Amalia Del Vecchio
Master of Science in Medicine

Kyla Emerson Dunn
Human Genetics and Genetic Counseling

James Van Rensselaer Hunt Freeman
Health Services Research

Viji Ganapathi
Biomedical Informatics

Sarah Theresa Kerfoot Garcia
Human Genetics and Genetic Counseling

Amir Ghazvinian
Biomedical Informatics

Andrew David Hsu
Neurosciences

Lili Kuzmich
Human Genetics and Genetic Counseling

Gigi Yuen-Gee Liu
Epidemiology

Linda Yang Liu
Biomedical Informatics

Neyssa Maria Marina
Epidemiology

Viswam Siva Nair
Epidemiology

Andrew Robert Norman
Developmental Biology

Kathleen Maria O'Leary
Health Services Research

Austin James Ostermeier
Cancer Biology

Kun Tae Park
Health Services Research

Daniel Aaron Pollyea
Epidemiology

George Poultsides
Epidemiology

Amanda Amparo Richards
Biomedical Informatics

Huy Song Seng
Biomedical Informatics

Rashmee U Shah
Health Services Research

Cyrena Torrey Simons
Health Services Research

Stephanie Leigh Sottile
Human Genetics and Genetic Counseling

Michael Stern
Biophysics

Reana N Tischler
Human Genetics and Genetic Counseling

John Simon Van Arnam
Cancer Biology

Kimberly Kathryn Vande Wydeven
Human Genetics and Genetic Counseling

Amy Jean Veodisch, MD
Epidemiology

Arthur Yang
Biomedical Informatics

Robert Maxwell Zamkow
Biomedical Informatics

Doctor Philosophy

Mohammed Nazar AlQuraishi
Genetics
Theory-free Potentials

Michael Alonso
Immunology
T Cells Regulate the Formation and Function of Inflammatory Dendritic Cells

Peter Caton Anthony
Biophysics
Single-molecule Studies of Nucleic Acid Folding

Craig Michael Betts
Biochemistry
Regulation of Centromeres by the Anaphase Promoting Complex

Michael Paul Bokoch
Biophysics
NMR Spectroscopy for Structural and Dynamic Studies of the Beta-2 Adrenergenic Receptor

Gregory Ross Bowman
Biophysics
Markov State Models for Protein and RNA Folding

Colleen Ann Brady
Cancer Biology
p53 Transactivation-domaine Mutant Mice Reveal Context-specific Differences in 153's Medchanism of Action

Frank Curtis Brown
Biochemistry
Molecular Analysis of Vesicle Tethering at the Golgi

Justin Emmanuel Brown
Neurosciences
Neural Correlates of Pain in the Healthy Human Brain: Distinguishing Painful and Non-painful Stimuli with fMRI

Brittany Edna Burrows
Neurosciences

Visual Cortical Representations of Bottom-up Salience and Perceptual Continuity

Brad Busse
Biophysics
Proteomic Single-Synapse Analysis with Array Tomography

Erika Liliana Bustamante
Developmental Biology
Genetic Studies of Endocrine Function and Metabolic Regulation by the Corpora Cardiaca Cells in Drosophila Melangaster

Daniel Richard Calnan
Cancer Biology
Regulation of the Longevity Associated Tumor Suppressor FoxO3 by Lysine Methylation and Binding to Protein Partners

Matthew Carter
Neurosciences
Optogenetic Reverse Engineering of Brain Sleep/Wake Circuitry

Charles Kwok Fai Chan
Developmental Biology
Origins of the Adult Hematopoietic Niche

Mark Ping Chao
Cancer Biology
Understanding Mechanisms of Synaptogenesis in C. Elegans: from Cell Adhesion to Vesicle Transport

David Pei-Ann Chen
Biomedical Informatics
Integration of Electronic Health Records and Public Biological Repositories Illuminates Human Pathophysiology and Underlying Molecular Relationships

Peter Caton Choi
Immunology
Mechanisms of Myc Lymphoma Regression and Recurrence

Peiying Chuan
Biochemistry
From Single Molecules to Single Cells: Mechanistic Studies of Myosin VI and Cardiac Myosin

Matthew Ryan Clutter
Immunology
Network Analysis and Drug Target Identification in Mast Cells

Oliver Crespo Diaz
Immunology
The Role of PDGF and FMS Signaling Pathways in Autoimmune Demyelination

Emily Marie Deal
Microbiology and Immunology
Primary Peripheral Human Plasmacytoid Dendritic Cell Responses to Rotavirus Infection: Mechanisms of Induction and Consequences for Pathogenesis

Catherine Amalia Del Vecchio
Cancer Biology
Defining Novel Functions for the Oncogenic Variant EGFRvIII in Tumor Initiation

Sridharan Devarajan
Neurosciences
Neural Mechanisms of Visual and Auditory Attention

Daniel J. Dickinson
Cancer Biology
The Pre-Metazoan Origins and Evolution of Epithelial Cell Adhesion and Polarity

Emily Marguerite Drabant
Neurosciences
Individual Differences Modulate Neural Responses During Emotional Reactivity and Regulation

Joel Dudley
Biomedical Informatics
Methods and Applications for Position-specific Evolutionary Anatomies in Clinical Genomics

Emily Egeler
Chemical Systems Biology
Probing Degradation of Unstable Proteins

Patrick Ryan Eimerman
Microbiology and Immunology
Characterization of Listeria Monocytogenes Growth and Colonization of the Murine Gallbladder

Jake Warner Fathman
Immunology
Characterization and Isolation of Discrete Progenitor Populations During Natural Killer Cell Development

Dina Finan
Biochemistry
Motors Meet Their Cargo: Establishing Cellular Functions of Myosin VI Through Biochemical Analysis of Novel Binding Partners

Lynette Chai Jen Foo
Neurosciences
Development of a Novel Method to Purify and Culture Mature Rat Brain Astrocytes

Yael Garten
Biomedical Informatics
Text Mining of the Scientific Literature to Identify Pharmacogenomic Interactions

Kenneth Demire Gibbs, Jr.
Immunology
Regulation of Hematopoietic and Leukemic Stem Cells

Dariya Sergiuvna Glazer
Genetics
Incorporating the Dynamic Nature of Molecules Improves Performance of Structure-based Function Prediction Methods

Matthew Jordan Goldstein
Immunology
CpG Vaccine Strategies Induce Tumor-reactive T Cells for Adoptive Therapy of Lymphoma

David Goode
Genetics
Evolutionary Constraint Facilitates Interpretation of Genetic Variation in Resequenced Human Genomes

Ethan Joseph Greenblatt
Biophysics
Derlin-1 is a Rhomboid Protein Required for the Dislocation of Misfolded Proteins from the Endoplasmic Reticulum

Anna Bao Zhen Guan
Cancer Biology
Characterization of the Novel IK Complex and Its Role in the DNA Damage Response

Cong Christine Guo
Neurosciences
Decoding Cerebellar Instructive Signals for Learning in the Oculomotor System

Andea Elise Hartsock
Andrea Elise Hartsock
Molecular and Cellular Physiology
Competitive Regulation of E-cadherin Juxta-membrane Domain Degradation by p120-Catenin Binding and Hakai-Mediated Ubiquitination

Olivia Louise Hatton
Immunology
Syk Survival Signaling in Epstein Barr Virus (EBV)+ B Cell Lymphomas

Robert Tyler Hillman
Genetics
Neuropilins are Positive Regulators of Hedgehog Signal Transduction

Lewis Hong
Genetics
Genetics and Genomics of Mammalian Pigment Patterning

Michael Howitt
Microbiology and Immunology
Regulation of Motility in Helicobacter Pylori and the Epsilon Proteobacteria

Yana Emmy Hoy
Microbiology and Immunology
The Interplay between Salmonella Enterica serovar Typhimurium and the Murine Intestinal Microbiota

Jamie Conklin Iman
Genetics
From Embryonic Stem Cells to Cancer: The Role of the Retinoblastoma Protein in Cell Cycle and Differentiation

Megan Insco
Developmental Biology
Regulation of the Switch from Proliferation to Differentiation in an Adult Stem Cell Lineage

Katherine LaRoque Jameson
Cancer Biology
Tmor Selective Targeting of a Conserved Scaffold Domain

Max Jan
Cancer Biology
Pre-leukemic Hematopoietic Stem Cells Precede Human Acute Myeloid Leukemia

Jonathan Wiley Jones
Microbiology and Immunology
Molecular Mechanisms of the Innate Immune Response to Francisella Tularensis

Rachel Stern Kalmar
Neurosciences
Moving Through the Brain: A Study of Movement Preparation in the Oculomotor and Reach Systems

Rinki Kapoor
Biophysics

Mechanistic Studies and Biomedical Applications of Antimicrobial Peptoids Against Multi-drug Resistant Infections

Nicole Hanick Kattah
Immunology
Tetramers Reveal CD4+ T Cells that are Specific for U1-70 in Systemic Lupus Erythematosus

Tiara Lynn Aiko Kawahara
Cancer Biology
Control of Transcriptional Programs of Aging by NF-kappaB

Jon-Michael Knapp
Neurosciences
Sex-specific Structure and Function of the Olfactory System in Drosophila Melanogaster

Juliet Klasing Knowles
Neurosciences
P75 Neurotrophin Receptor Mediated Protection from Amyloid-Beta Induced Neurodegeneration

Yuya Kobayashi
Genetics
DNA Methylation Profiling Reveals Novel Biomarkers and Important Roles for DNA Methyltransferases in Postate Cancer

Matthew Herbert Larson
Biophysics
Single-molecule Measurements of Transcript Elongation and Termination by RNA Polymerase

Josephine Yuenming Lee
Microbiology and Immunology
A Mouse Model of Helicobacter Pylori Infection: Effects of Gut Microbiota on Bacterial Colonization and Disease Progression

Peter Leader Lee
Chemical and Systems Biology
The Regulation of the Kinesin-like Motor Protein, KIF1C, by Rab GTPases

Hwei Xian Leong
Immunology
Loss of Retinoic Acid in the Tumor Milieu Reprograms Lamina Propria Dendritic Cells in Spontaneous Intestinal Neoplasia

Mia Levy
Biomedical Informatics
Rule-based Response Assessment Framework

Ray Shih-jui Lin
Biomedical Informatics
A Stochastic Model of Cancer Progression and Screening

Jessica Ashley Linderman
Immunology
Immune Reconstitution after Hematopoietic Cell Transplantation

Michael Emori Llewellyn
Bioengineering
Novel Tools to Study and Restore Muscle Function

Jay Mahesh Maniar
Genetics
EGO-1, An Essential Caenorhabditis Elegans RNA-directed RNA Polymerase, Modulates Gene Expression Through the Messenger RNA-templated Production of Short Antisense Effector RNAs

Milica Margeta
Neurosciences
From Building a Neuron to Building a Circuit: Polarity and Synaptic Specificity in C. Elegans

Kelly Elizabeth McCann
Cancer Biology
The Roles of Chromatin Modifying Enzymes in DNA Double-strand Break Repair

Julie JoAnn Miller
Chemical Systems Biology
A Primary Cilia Disease Protein Network Centered at the Centrosome

Murtaza Mogri
Bioengineering
Optogenetic Studies of Brain Disease: Engineering Light Delivery into Biological Tissue

Christopher Jason Moore
Genetics
Genetic and Biochemical Analysis of the Ribonuclease E Family of Proteins in E Coli

Alexander A Morgan
Biomedical Informatics
Methods of Study Integration in Multiplex Molecular Medicine

David Yoonsuk Oh
Microbiology and Immunology
Regional Specification of Thymocyte Signaling and Migration in the Thymus: A Two-Photon Microscopic Study

Yi-Ching Ong
Microbiology and Immunology
Toxoplasma Gondii Co-opts Host Immune Signaling by Secretion of a Polymorphic Tyrosine Kinase, ROP16

Ann Gee Lisa Ooi
Chemical and Systems Biology
Understanding Hematopoietic Stem Cells: From Macro to Micro

Adrienne Lee Orr
Molecular and Cellular Physiology
Amyloid-beta Inhibits E-S Plasticity through Inhibition of Cannabinoid Receptor 1-dependent Disinhibition

Amy Colleen Palin
Immunology
Mechanisms of the Impaired Th1 Immune Response in the Human Neonate

Wendy W Pang
Cancer Biology
Human Hematopoietic Stem Cells in Aging and Myelodysplastic Syndrome

Min Young Park
Chemical and Systems Bioloby
Developing a Protein-based Assay for Identifying hRSV Entry Inhibitors and Knowledge-based Approaches to Design Peptidomimetics

Jennifer Janell Parker
Chemical and Systems Biology
Survival and Signaling Changes in Antigen Presenting Cell Subsets after Radiation

Chirag Patel
Biomedical Informatics
Environment-wide Associations to Disease

Kaitian Peng
Microbiology and Immunology
Dissecting the Complex Host-pathogen Interactions in Francisella Tularensis

Julie Rebecca Perlin
Developmental Biology
The Role of Neuregulin 1 in Schwann Cell Migration

Laura Marie Prolo
Neurosciences
Impaired Myelination in a Mouse Model of the Free Sialic Acid Storage Disorders

Kavya Rakhra
Immunology
Characterizing the Immune Response to Tumor Regression Mediated by Oncogene Inactivation

Rebecca Rakow-Penner
Biophysics
Advances in Breast MRI

Alya Rachel Raphael
Developmental Biology
The Role of Schwann Cells in Peripheral Nerve Development in Zebrafish

Alexander Red Eagle
Genetics
The Role of the IL-4/STAT6 Signaling Pathway in the Development of Obesity and Insulin Resistance

Roberto Rafael Ricardo-Gonzalez
Immunology
The Roles of STAT6 and STAT4 in Glucose and Lipid Homeostasis

Daniel Patrick Riordan
Genetics
Identification of RNA Regulatory Information in the Saccharomyces Cerevisiae Transcriptone

Alan E Rorie
Neurosciences
Integration of Sensory and Reward Information During Perceptual Decision-making in Lateral Intraparietal Cortex (LIP)

Kacey Layn Sachen
Immunology
Antigen Recognition in the Pathogenesis of Follicular Lymphoma

Louis Alexander Saddic III
Cancer Biology
Methylation of the Retinoblastoma Tumor Suppressor by SMYD2 & Functional Interactions Between Retinoblastoma and C-MYC in a Mouse Model of Hepatocellular Carcinoma

Keyan Salari
Genetics
Exploring Cancer Biology Using Integrative Genomics

Kimberly Salvia
Neurosciences

The Synaptic Vesicle Protein B0AT3 (SLC6A17) Catalyzes Sodium-coupled Neutral Amino Acid Transport

Mark Anthony Sellmyer
Chemical and Systems Biology
Chemical Tools to Perturb and Observe Complex Biology

Alicia Roberta Shields
Genetics
Regulation of Self-renewal, Proliferation and Differentiation in Adult Stem Cell Lineages

Marina Sirota
Biomedical Informatics
Developing and Applying Integrative Computational Methods to Study Autoimmune Disease

Alyssa Christine Snider
Genetics
The Chromatin Remodeling Factor Chd1l in the Preimplantation Embryo and in ES Cells

Brett Theodore Staahl
Developmental Biology
Mechanism of an Epigenetic Switch that Mediates Neuronal Development

Timothy Richard Stowe
Cancer Biology
Centrosomes, Cilia and Centriolar Satellites: Characterizing the Role of Cep72 in Centriolar Satellite Function

Lihan Sun
Molecular Pharmacology
Protective Signaling in the Myocardium: A Role for Protein Kinase Cepsilon and Aldehyde Dehydrogenase 2 Regulators in the Treatment of Myocardial Infarction and Heart Failure

Kaustubh Satyendra Supekar
Biomedical Informatics
Detecting and Characterizing Large-scale Human Brain Networks

Lora Beatrice Sweeney
Neurosciences
Using Semaphorins to Assemble an Olfactory Circuit

Fraser Elisabeth Tan
Biochemistry
C-MYB Controls the Initiation of Ciliogenesis in Developing Mouse Airway Epithelium

Shumin Tan
Microbiology and Immunology
Helicobacter Pylori: Molecular Mechanisms for the Utilization of the Cell Surface as a Relicative Niche

Joy Sing-Yi Tea
Neurosciences
Chromatin Remodeling and Dendrite Wiring Specificity in the Drosophila Olfactory System

Hannah Margareta Teichmann
Neurosciences
Motoneuron Dendrite Morphogenesis in Caenorhabditis Elegans

Ruth Ilana Tennen
Cancer Biology
To the Telomeres and Beyond: Chromatin Regulation by the Mammalian Sirtuin SIRT6

Robin Deis Trujillo
Microbiology and Immunology
A Role for the let-7 Primary MicroRNA in Target Gene Recognition and Repression

Hsing-Chen Tsai
Neurosciences
Illuminating the Function of Dopaminergic Neurons in Reward

Ricardo Andres Valenzuela
Molecular and Cellular Physiology
Alterations to Synaptic Function and Connectivity in Area CA3 of the Hippocampus in Mouse Models of Mental Retardation

Mariel Marques Velez
Neurosciences
Behavioral and Genetic Dissection of Polarotactic Responses in Drosophila Melanogaster

Andrew Sean Venteicher
Biophysics
Identification of Novel Human Telomerase Components Essential for Holoenzyme Assembly and Function

Kartik Viswanathan
Cancer Biology
Mechanisms Regulating Adaptive Pancreatic Beta Cell Function

Lu-En Wai
Immunology
The Role of Natural Killer Cells and Activating Receptors on Natural Killer Cells in Transplantation

Stephanie C Weber
Biochemistry
Macromolecular Motion In Vivo: Anomalous Diffusion Through an "Active" Viscoelastic Medium

Kevin Shao-Ang Wei
Cancer Biology
Inhibition of Vascular Endothelial Growth Factor Signaling Stimulates Erythropoiesis and Sensitizes Hepatic Insulin Signaling Through Activation of Hepatic Hypoxia-inducible Factor-2 Alpha

Alissa Meyer Winzeler
Developmental Biology
The Contribution of Myelin Lipids to the Failure of Central Nervous System Axon Regeneration

Stacey Ellen Wirt
Cancer Biology
Cell Cycle Exit in G1 and Differentiation Independent of the Rb Gene Family During Embryonic Development

Michael Thomas Wong
Immunology
Regulation of Human T Helper Cell Differentiation

Guanglei Xiong
Biomedical Informatics
Extraction of 3D patient-specific geometry and motion from medical images

Zhen Peggy Yao
Biomedical Informatics
Sampling-based Exploration of Folded State of Protein Under Geometry and Kinematic Constraints

Alper Yetil
Cancer Biology
Mechanisms of MYC Inactivation Induced Senescence and Sustained Tumor Regression

Noah H. Zimmerman
Biomedical Informatics
A Computational Approach to Identification and Comparison of Cell Subsets in Flow Cytometry Data

Luis Alejandro Zúñiga
Immunology
Chemerin and IL-17 in Inflammation, Obesity, and Metabolism

Doctor of Medicine

Emma Bakes
MD Awarded Posthumously
1968 - 2011

Gaurav Banka
University of California at Los Angeles Med Ctr
Los Angeles, CA • *Internal Medicine*

Frederick Christian Bennett
Stanford Hospital and Clinics
Palo Alto, CA • *Psychiatry*

James Gerard Berbee
University of Wisconsin Hospital and Clinics
Madison, WI • *Emergency Medicine*

Alexa Dorothea Bisinger
University of California at San Francisco
San Francisco, CA • *Emergency Medicine*

Michael Paul Bokoch
University of California at San Francisco
San Francisco, CA • *Anesthesiology/Research*

Thea Charlotte Brennan-Krohn
Children's Hospital of Boston
Boston, MA • *Pediatrics*

Wendy Caceres
Stanford Hospital and Clinics
Palo Alto, CA • *Internal Medicine*

John Carl Carter
University of Washington Affiliated Hospitals
Seattle, WA • *Pediatrics-Preliminary*
University of Washington, Seattle
Seattle, WA • *Child Neurology*

Tiffany Nicole Castillo
Stanford Hospital and Clinics
Palo Alto, CA • *Orthopaedic Surgery*

Keith Ted Chan
Kaiser Permanente Medical Center
Santa Clara, CA • *Medicine-Preliminary*
University of Washington Affiliated Hospitals
Seattle, WA • *Diagnostic Radiology*

Lauren Shui-Sum Chan
California Pacific Medical Center
San Francisco, CA • *Medicine-Preliminary*
Stanford Hospital and Clinics
Palo Alto, CA • *Diagnostic Radiology*

Christine Ning Chang
Santa Clara Valley Medical Center
San Jose, CA • *Transitional*
Kaiser Permanente Medical Center
Los Angeles, CA • *Radiation Oncology*

Pearl Wen Chang
Stanford Hospital and Clinics
Palo Alto, CA • *Pediatrics*

Christina Ka-Lei Chao
Harbor-UCLA Medical Center
Torrance, CA • *Emergency Medicine*

Mark Ping Chao
Stanford Hospital and Clinics
Palo Alto, CA • *Internal Medicine*

Resmi Ann Charalel
New York Hospital Medical Center of Queens
Flushing, NY • *Medicine-Preliminary*
New York Presbyterian Hospital
Weill Cornell Medical Center
New York, NY • *Diagnostic Radiology*

Qian Cece Chen
Barnes-Jewish Hospital
St. Louis, MO • *Anesthesiology*

David Austin Craig
Stanford Hospital and Clinics
Palo Alto, CA • *Emergency Medicine*

Alana May Frost
Stanford Hospital and Clinics
Palo Alto, CA • *Pathology*

Teresa Fu
Santa Clara Valley Medical Center
San Jose, CA • *Transitional*
Stanford Hospital and Clinics
Palo Alto, CA • *Dermatology*

Michael Gabriel Galvez
Stanford Hospital and Clinics
Palo Alto, CA • *Plastic Surgery*

Natalia Gomez-Ospina
Santa Barbara Cottage Hospital
Santa Barbara, CA • *Medicine-Preliminary*
Johns Hopkins Hospital
Baltimore, MD • *Dermatology*

Cheryl Green
Georgetown University Hospital
Washington, DC • *Psychiatry*

Gary Michael Green
Harbor-UCLA Medical Center
Torrance, CA • *Emergency Medicine*

Gaurav Gupta
New York Presbyterian Hospital
Columbia University Medical Center
New York, NY • *Neurological Surgery*

Elsie Ruth Gyang
Stanford Hospital and Clinics
Palo Alto, CA • *Vascular Surgery*

Anna Lonyai Harbison
Stanford Hospital and Clinics
Palo Alto, CA • *Pediatrics*

Rebecca Clarice Hjorten
Albert Einstein College of Medicine
The Children's Hospital at Montefiore Med Ctr
Bronx, NY • *Pediatrics*

Quoc Tri Ho
VA Medical Center, Boise
Boise, ID • *Internal Medicine*

Jennifer Hong
Dartmouth-Hitchcock Medical Center
Lebanon, NH • *Neurological Surgery*

Ryan Steven Huss
Residency to Begin 2012

Grace Huynh
International Venture Laboratories
Seattle, WA

David Philip Janka
Private Enterprise

Sha-Nita Evelyn Jones
Loma Linda University Medical Center
Loma Linda, CA • *Emergency Medicine*

R. Bryan Scott Klassen
University of California at San Francisco
San Francisco, CA • *Anesthesiology*

Juliet Klasing Knowles
Stanford Hospital and Clinics
Palo Alto, CA • *Child Neurology*

Juliet Klasing Knowles
Stanford Hospital and Clinics
Palo Alto, CA • *Pediatrics*

Narmadan Akileswaran Kumarasamy
Hospital of Saint Raphael
New Haven, CT • *Transitional*
Albert Einstein College of Medicine
The Children's Hospital at Montefiore Med Ctr
Bronx, NY • *Diagnostic Radiology*

Flynn Christine LaRochelle
Oregon Health & Science University
Portland, OR • *Obstetrics & Gynecology*

Barrett Jon Larson
S Stanford Hospital and Clinics
Palo Alto, CA • *Transitional-Anesthesiology*
tanford Hospital and Clinics
Palo Alto, CA • *Anesthesiology*

Cara Ann Liebert
Stanford Hospital and Clinics
Palo Alto, CA • *General Surgery*

Patrick S. Lin
University of California at Davis Med Ctr
Sacramento, CA • *Internal Medicine*

Gigi Yuen-Gee Liu
Johns Hopkins Hospital
Baltimore, MD • *Internal Medicine*

Michael Emori Llewellyn
Santa Clara Valley Medical Center
San Jose, CA • *Transitional*
Stanford Hospital and Clinics
Palo Alto, CA • *Diagnostic Radiology*

Wah-Ping Luk

Gene Kew Ma
Stanford Hospital and Clinics
Palo Alto, CA • *Internal Medicine*

Liam Connor Macleod
University of Washington Affiliated Hospitals
Seattle, WA • *Surgery-Preliminary/Urology*
University of Washington, Seattle
Seattle, WA • *Urology*

Milica Margeta
Stanford Hospital and Clinics
Palo Alto, CA • *Medicine-Preliminary*
Duke University Hospital
Durham, NC • *Ophthalmology*

Kelly Elizabeth McCann
Oregon Health & Science University
Portland, OR • *Internal Medicine*

Aabed Meer
Residency to Begin in 2012

Jennifer Ann Miller
Stanford Hospital and Clinics
Palo Alto, CA • *Internal Medicine*

Julie JoAnn Miller
Stanford Hospital and Clinics
Palo Alto, CA • *Medicine-Preliminary*
Massachusetts General Hospital
Boston, MA • *Neurology*

Elise Hye Youn Min
Brigham & Women's Hospital
Boston, MA • *General Surgery*

Steven Cassidy Minear
University of California at San Francisco
San Francisco, CA • *General Surgery*

Yohko Murakami
University of California at Irvine Med Ctr
Irvine, CA • *Medicine-Preliminary*
University of Southern California
Los Angeles, CA • *Ophthalmology*

David Myung
Kaiser Permanente Medical Center
Santa Clara, CA • *Medicine-Preliminary*
Stanford Hospital and Clinics
Palo Alto, CA • *Ophthalmology*

Annie Quoc-Thy Nguyen

Santa Clara Valley Medical Center
San Jose, CA • *Internal Medicine*

David Yoonsuk Oh
University of California at San Francisco
San Francisco, CA • *Internal Medicine*

Victoria Nicole Parikh
University of California at San Francisco
San Francisco, CA • *Internal Medicine*

Nina Persotem Patel
University of California at San Francisco
San Francisco, CA • *Family Medicine*

Rebecca Rakow Penner
Santa Clara Valley Medical Center
San Jose, CA • *Medicine-Preliminary*
University of California at San Diego Med Ctr
San Diego, CA • *Diagnostic Radiology/Research*

Matthew James Pianko
New York Presbyterian Hospital
Columbia University Medical Center
New York, NY • *Internal Medicine*

Sarah Stephens Pickard
Children's Hospital of Boston
Boston, MA • *Pediatrics*

Karthikeyan Ettigounder Ponnusamy
Johns Hopkins Hospital
Baltimore, MD • *Orthopaedic Surgery*

[3]Malavika Prabhu
University of Washington Affiliated Hospitals
Seattle, WA • *Obstetrics & Gynecology*

Kristin Sharmila Raj
Stanford Hospital and Clinics
Palo Alto, CA • *Psychiatry*

Bhargav Raman
Santa Clara Valley Medical Center
San Jose, CA • *Transitional*
Santa Clara Valley Medical Center
San Jose, CA • *Diagnostic Radiology*

Roberto Rafael Ricardo-Gonzalez
Brigham & Women's Hospital
Boston, MA • *Medicine-Preliminary*
University of California at San Francisco
San Francisco, CA • *Derm-2+2/Scientists*

Makeda Lucretia Robinson
University of California at San Francisco
San Francisco, CA • *Internal Medicine*

Joshua Alexander Rolnick
Stanford Hospital and Clinics
Palo Alto, CA • *Internal Medicine*
Jamie Elyce Rubin
University of Hawaii
Honolulu, HI • *Transitional*
Massachusetts General Hospital
Boston, MA • *Anesthesiology*

Sean Sachdev
University of California at San Diego Med Ctr
San Diego, CA • *Medicine-Preliminary*
McGaw Medical Center of Northwestern Univ
Chicago, IL • *Radiation Oncology*

Brandon Luke Labron Seagle
University of Washington
Seattle, WA • *General Surgery*

Jessica M. Sin
Greenwich Hospital
Greenwich, CT • *Medicine-Preliminary*
Stanford Hospital and Clinics
Palo Alto, CA • *Diagnostic Radiology*

Kierann Elizabeth Smith
Mid-Hudson Family Health Institute
Kingston, NY • *Family Medicine*

Shobha Williamson Stack
Stanford Hospital and Clinics
Palo Alto, CA • *Internal Medicine*

Mary Lynette Stein
Stanford Hospital and Clinics
Palo Alto, CA • *Pediatrics-Anesthesiology*

Sara Jessica Stern-Nezer
Santa Clara Valley Medical Center
San Jose, CA • *Medicine-Preliminary*
Stanford Hospital and Clinics
Palo Alto, CA • *Neurology*

Jessica Kelly Stewart
Harbor-UCLA Medical Center
Torrance, CA • *Transitional*
Duke University Medical Center
Durham, NC • *Diagnostic Radiology*

Leslie Anne Stewart
Hospital of the University of Pennsylvania
Philadelphia, PA • *Internal Medicine*

Katalin Anna Szabo
San Mateo Medical Center
San Mateo, CA • *Psychiatry*

Xiao Tan
Beth Israel Deaconess Medical Center
Boston, MA • *Internal Medicine*

Jessica Jewel Telleria
University of Washington Affiliated Hospitals
Seattle, WA • *Orthopaedic Surgery*

Meghan Minh Hien Tieu
Kaiser Permanente Medical Center
Oakland, CA • *Medicine-Preliminary*
Stanford Hospital and Clinics
Palo Alto, CA • *Anesthesiology*

Sabrina Marie Tom
University of California at Los Angeles Med Center
Los Angeles, CA • *Emergency Medicine*

Amar Dinker Trivedi
McGaw Medical Center of Northwestern University
Chicago, IL • *Internal Medicine*

Joshua John Troke
University of California at Los Angeles Med Ctr
Los Angeles, CA • *Emergency Medicine*

Emily Bao Tsai
New York University
New York, NY • *Medicine-Preliminary*
University of California at Los Angeles Med Ctr
Los Angeles, CA • *Diagnostic Radiology*

John Simon Van Arnam
Kaiser Permanente Medical Center
Santa Clara, CA • *Medicine-Preliminary*

Mariel Marques Velez
Stanford Hospital and Clinics
Palo Alto, CA • *Medicine-Preliminary/Neurology*
Stanford Hospital and Clinics
Palo Alto, CA • *Neurology*

Andrew Sean Venteicher
Massachusetts General Hospital
Boston, MA • *Neurological Surgery*

Ivan N. Vial
University of Pittsburgh Medical Center
Pittsburgh, PA • *Plastic Surgery*

John Schoeneman Vorhies
Stanford Hospital and Clinics
Palo Alto, CA • *Orthopaedic Surgery*

Wenshuai Wan
Master of Science, Health Services Research
Stanford, CA • *Stanford University*

Aaron Sheng-Chieh Wang
Riverside Methodist Hospital
Columbus, OH • *Transitional*
Johns Hopkins Hospital
Baltimore, MD • *Ophthalmology*

Jonathan Allen Webster
Johns Hopkins Hospital
Baltimore, MD • *Internal Medicine*

Kevin Shao-Ang Wei
Brigham & Women's Hospital
Boston, MA • *Internal Medicine*

Gavitt Alida Woodard
University of California at San Francisco
San Francisco, CA • *General Surgery*

Elizabeth Anne Zambricki
Stanford Hospital and Clinics
Palo Alto, CA • *Otolaryngology*

Update on the Center for Clinical Informatics

At a recent Executive Committee meeting Dr. Henry Lowe, Senior Associate Dean for Information Resources and Technology gave an update on the Stanford Center for Clinical Informatics. He subsequently prepared a summary of his presentation which I am pleased to share with you below:

The Stanford Center for Clinical Informatics was established in 2005 as one of three Strategic Centers at the School of Medicine. The Center is directed by Henry Lowe MD, Associate Professor of Pediatrics and Senior Associate Dean for Information Resource and Technology (IRT). The discipline of Clinical Informatics has been defined as transforming health care by "analyzing, designing, implementing, and evaluating information and communication systems that enhance individual and population health outcomes, improve patient care, and strengthen the clinician-patient relationship." (Gardner RM et al. Core Content for the Subspecialty of Clinical Informatics. J Am Med Inform Assoc. 2009 Mar-Apr;16(2):153-7). The Center for Clinical Informatics defines its mission as "fostering the use of innovative information technology solutions to improve human health." Given the research-intensive nature of Stanford University School of Medicine, a major focus of the Center's activities to date has been applying Informatics expertise and technologies to support the School's clinical and translational research mission. In this regard, the Center works in partnership with SPECTRUM, the coordinating entity for Stanford University's Clinical and Translational Science Award (CTSA) grant, on three overarching goals:

1. The application of innovative informatics to reduce barriers to effective clinical and translational research (CTR)
2. Connecting the Stanford CTR community to data, technology and expertise through a free Informatics consultation service
3. Using the Stanford CTR community's needs to drive innovative applied Clinical Informatics research and development projects

The Center's Clinical Informatics consultation service, staffed by an experienced team of informaticians, computer scientists and analysts, provides up to five hours of assistance at no charge. In 2010 the Center handled over 200 substantial consultations (out of a total of over 300 requests), a 70% increase over 2009. Most of the consultations fell into two categories: secondary use of health information for research purposes and provision of secure research data management solutions. The Center's impact is increasingly broad, in 2010 working with faculty in almost all of the School's clinical departments and a number of the basic science departments.

A major contributor to the Center's success has been the STRIDE (Stanford Translational Research Integrated Database Environment) system. This secure informatics platform, developed by the Center, provides critical functionality in

three area:

• In partnership with both hospitals, STRIDE aggregates information from the Stanford pediatric and adult electronic health records using a HIPAA-compliant model that facilitates the secondary use of health information for a wide variety of research activities. The STRIDE Clinical Data Warehouse integrates clinical data on almost 1.65 million pediatric and adult patients cared for at Stanford since 1995. STRIDE offers powerful, HIPAA-compliant, "self-service" tools that allow researchers to identify potential research cohorts using clinical and temporal criteria as well as performing efficient, secure, electronic review of clinical data to further refine patient cohorts. The Center also extracts and models clinical data sets for use in IRB-approved research studies. A recent addition to the STRIDE platform has been a novel Research Alerting System that analyzes clinical data in real-time to provide secure notification of potential research participants. The STRIDE platform is also being used to provide reports based on clinical data as part of Stanford Hospital and Clinics' quality improvement initiative.

• STRIDE provides a secure, HIPAA-compliant platform for the deployment of sophisticated research data management applications. A number of these STRIDE applications have been deployed, supporting a diverse set of research activities including Cancer Genetics, Joint Replacement Registries, Cardiothoracic Surgery Outcomes, Multimedia Dermatology Research, Neonatology Data Linkage and a joint breast cancer outcomes project involving Stanford and the Palo Alto Medical Foundation (PAMF).

• Biospecimen data management (specimen registration, tracking, retrieval and linkage to clinical data) is provided by STRIDE to a number of tissue banks, including the Stanford Cancer Institute (in partnership with the Department of Pathology), Bone Marrow Transplantation and Hematology. STRIDE manages and tracks information on over 100,000 biospecimens stored at Stanford.

In addition to STRIDE, the Center also operates an installation of REDCap (Research Electronic Data CAPture), a secure web-based research data management system developed at Vanderbilt University and supported by a consortium of 200 global partners (including the Center). This easy to use, self-service system is provided free of charge by the Center and integrates with many data analysis tools. The Center currently hosts over 200 active REDCap research databases, with approximately 500 active users at Stanford. REDCap databases are secure, backed-up and address the risk of storing sensitive clinical research data on the user's computer.

The Center for Clinical Informatics has a number of ongoing research and development collaborations with groups across the School, including Biomedical Informatics (clinical data mining, multisite secure clinical data exchange, algorithmic clinical data modeling, similarity matching algorithms), the Cancer

Center (breast cancer outcomes, cancer center research database), Anesthesia (sepsis identification, research registry frameworks), Emergency Medicine (research alerting), Cardiothoracic Surgery (integrated databases for outcomes research), Dermatology (drug prescribing patterns), Genetics (Personalized Medicine), Neonatology (High Risk Infant Registry) and the Stanford Prematurity Center (Integrated Database Models). The Center has also engaged in a variety of educational activities, including a very successful Clinical Informatics seminar series and providing clinical informatics research training opportunities to masters and doctoral students, in partnership with the Stanford Biomedical Informatics Training IDP.

Looking forward, in addition to continuing many of its current activities, the Center sees exciting opportunities for research collaborations in new areas such as large scale clinical data mining, clinical text mining, quality improvement and outcomes, novel data-driven clinical decision support and personalized medicine applications that leverage on the integration of clinical and genomic data. More information about the Stanford Center for Clinical Informatics' activities and services are available at https://clinicalinformatics.stanford.edu/

Upcoming Event:

Stanford Health Policy Forum: The State of Children's Health in California - with Diana Dooley, California Secretary of Health and Human Services
Monday, June 20
12:00 – 1:30 PM
Clark Center Auditorium

The panel at the Stanford Health Policy Forum on June 20th will include California Health and Human Services Diana Dooley, Lucile Packard Children's Hospital President and CEO Christopher Dawes and Stanford faculty members, Dr. Shashank Joshi and Dr. Paul Wise. Paul Costello, Executive Director of the Office of Communication and Public Affairs, will lead a roundtable question and answer discussion -- first with the guest speakers and then with the audience. Additional information is available at: http://healthpolicyforum.stanford.edu/

Other Awards and Honors

- ***Paul C. Blainey, PhD***, postdoctoral fellow, Bioengineering, has received the 2011 Career Award at the Scientific Interface by the Burroughs Wellcome Fund.

- ***Kevin Chun-Kai Wang, PhD***, postdoctoral fellow, Dermatology, has received the 2011 Career Award for Medical Scientists by the Burroughs Wellcome Fund.

- ***Ronald Davis, PhD***, Professor of Biochemistry and of Genetics, is the recipient of the 2011 Genetics Prize presented by the Peter and Patricia Gruber Foundation. The award is presented to a leading scientist in recognition of groundbreaking contributions to any realm of genetics research.

- ***Cheryl Gore-Felton, PhD***, Professor of Psychiatry and Behavioral Sciences, has been selected as a 2011-12 Fellow of the Hedwig van Ameringen Executive Leadership in Academic Medicine Program for Women at the Drexel University College of Medicine. The program is dedicated to preparing senior women faculty for positions of leadership at academic health centers.

- ***William Newsome, PhD,*** Professor of Neurobiology, is among the 37 new scholars who were recently elected to the American Philosophical Society. The APS honors leading scholars, scientists and professionals through elected membership and opportunities for multidisciplinary, intellectual fellowship.

- ***Carla Shatz, PhD***, the Sapp Family Provostial Professor and director of the Bio-X program at Stanford, has been elected as one of eight foreign members of the Royal Society, which is composed of approximately 1,500 distinguished scientists around the world and is the oldest scientific academy in continuous existence.

- ***Robert Siegel, MD***, Associate Professor of Microbiology and Immunology, is one of four recipients of the Walter J. Gores Faculty Achievement Award. These awards are given annually in recognition of excellence in teaching in its broadest sense.

- ***Jessica Sin, PhD,*** is the recipient of the Norman Blank Award 2011. This award is given to an outstanding graduating Stanford medical student in Radiology.

- ***Justin Sonnenburg, MD,*** Assistant Professor of Microbiology and Immunology, has received the 2011 Investigators in the Pathogenesis of Infectious Disease Award by the Burroughs Welcome Fund.

Congratulations to all.

Appointments and Promotions

Arash Alizadeh has been appointed to Assistant Professor of Medicine, effective 7/01/11.

Heike Daldrup-Link has been appointed to Associate Professor of Radiology, effective 6/01/11.

Tushar J. Desai has been appointed to Assistant Professor of Medicine, effective 6/01/11.

Michael Eisenberg has been appointed to Assistant Professor of Urology at the Stanford University Medical Center, effective 8/01/11.

Brian A. Hargreaves has been promoted to Associate Professor (Research) of Radiology, effective 6/01/11.

Booil Jo has been promoted to Associate Professor of Psychiatry and Behavioral Sciences, effective 6/01/11.

Aya Kamaya has been reappointed to Assistant Professor of Radiology at the Stanford University Medical Center, effective 10/01/11.

David A. Katzenstein has been reappointed to Professor (Research) of Medicine, effective 6/01/11.

Amelie Lutz has been appointed to Assistant Professor of Radiology at the Stanford University Medical Center effective 5/01/11.

Gary Luxton has been promoted to Professor of Radiation Oncology at the Stanford University Medical Center, effective 6/01/11.

Jose R. Maldonado has been reappointed to Associate Professor of Psychiatry and Behavioral Sciences at the Stanford University Medical Center, effective 6/01/11.

Sam P. Most has been promoted to Professor of Otolaryngology – Head and Neck Surgery at the Stanford University Medical Center, effective 6/01/11.

Beverley Newman has been promoted to Professor of Radiology at the Stanford University Medical Center, effective 6/01/11.

Stephen J. Roth has been promoted to Professor of Pediatrics at the Lucile Salter Packard Children's Hospital, effective 6/01/11.

Julien Sage has been promoted to Associate Professor of Pediatrics, effective 6/01/11.

Shreyas S. Vasanawala has been promoted to Associate Professor of Radiology at the Stanford University Medical Center, effective 6/01/11.