

# Dean's Newsletter

## June 20, 2012

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## Commencement 2012

The Stanford University School of Medicine was founded in 1908 when the Cooper Medical College became part of Stanford University – a topic I featured in my May 29, 2012 Dean's Newsletter. Based on the history recorded by Dr. John Wilson (<http://elane.stanford.edu/wilson/index.html>), 1912 marked the last class to receive a degree from Cooper Medical College, and those graduating in 1913 were the first class of Stanford University's Department of Medicine. A hundred years later, on Saturday, June 16<sup>th</sup>, we celebrated the graduation of 212 students, 52 receiving Master of Science degrees, 85 Doctor of Philosophy degrees, 75 Doctor of Medicine (13 medical students also received a PhD degree and 2 received a MS degree). Although the temperature was truly "hot" during our Medical School Commencement ceremony under the large tent on Alumni Green, surrounded by the Clark Center, Fairchild Science Building, Li Ka Shing Center for Learning and Knowledge, and the Lorry Lokey Stem Cell Science Building, the celebratory feelings of our graduates and their families, colleagues and friends were even warmer. While the majority of students have spent about 5 years at Stanford, a few have been on their degree path for up to 10 years – giving new meaning to graduation!

The excitement of our graduates is inversely matched by the uncertainty of the times: a challenged economy both in the US and globally as well as uncertainty about the future of US healthcare (with the decision from the Supreme Court about the constitutional legality of the Affordable Care Act expected with the next couple of weeks and the political contest of healthcare reform likely to be among the center stage issues in the upcoming presidential debates and election this November). More certain but of deep concern is the flat to declining funding for research from the NIH and other federal agencies and the impact this might have on our investment and even prominence in being world leaders in the biosciences. Clearly our graduates will face new and uncharted waters, although it is our hope that they have been well educated and trained for a new world order. The wonderful thing about the Stanford community is that challenges are nearly always reframed as opportunities – and I am confident that this will be the case for our new graduates. Indeed, it is our hope that they will also lead the transformation of

healthcare and science into the future – both of which will have a positive impact on the economy of our nation as well.

I have made it a tradition to have the Newsletter following commencement include the names of our graduates as well as the texts of our student and commencement speakers. I am grateful to each of them for providing an important and unique perspective that was both personal and generalizable. Please also join me in thanking the many individuals who worked unstintingly to make this year's commencement so successful – especially given the exceptionally hot weather conditions. As she has in each of the past 12 graduation ceremonies that I have had the pleasure to participate in, Ms. Zera Murphy, Director of Student Life, worked tirelessly and devotedly to make sure every detail was addressed and achieved. I also want to thank Ms. Char Hamada, Assistant Dean of Student Affairs and Director of Admissions, and the other wonderful professionals from the Office of Education Programs and Services and the Dean's Office for their exceptional contributions to this year's Medical School Commencement.

This year we also had the special privilege of sharing the commencement activities with Dr. Jose Sandoval and his family. As noted in Jonathan Rabinovitz's report on graduation day (see: <http://med.stanford.edu/ism/2012/june/graduation-0617.html>), Dr. Sandoval's family was unable to attend his graduation so he missed it entirely in 1977. He returned in 2012 to march with the class of 2012, which was also a wonderful thing to celebrate.

For those who missed it, I had the opportunity to present our candidates to President Hennessy for the granting of their degrees at the University Commencement on Sunday June 17<sup>th</sup>. The University Commencement Address was given by Cory Booker, currently Mayor of Newark, New Jersey and a Stanford alum (see: <http://news.stanford.edu/news/2012/june/commencement-cory-booker-061712.html>). Without question Mayor Booker's address was one of the most moving and meaningful commencement speeches I have ever heard and its message is deeply relevant. I would encourage you to watch it if you have not already done so (see <http://thenextweb.com/shareables/2012/06/18/watch-mayor-cory-bookers-stanford-commencement-speech-it-will-inspire-you/>). It is quite special and truly inspiring.

### *Student Speeches*

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

**Remarks from Graduate Student Speaker - Moria Chambers, PhD Candidate in Microbiology and Immunology:** Moria is a graduate of MIT and did her PhD work in Dr. David Schneider's Lab in the Department of Microbiology and Immunology. She is also the Past President and Mentorship Chair of the Stanford Biosciences Student Association (SBSA).

Thank you Dean Pizzo.

Graduates, I want each of you to look around and find someone who's supported you

during the adventure that is graduate school - maybe you're looking at an academic adviser, a parent, an administrator or fellow student; and the people here today are probably just a small fraction of your support network. Collectively they refined our scientific thinking, took us out after an experiment flopped, and lent a listening ear. Take a moment and send them a silent thanks. They are so proud of you here today.

Now, some of you having been working for this and looking forward to this day for over five years, myself included. Not wanting to extend that by much more time today, I'll be brief. I have just two missions for you.

First - I'm asking for each of you to commit yourselves to being a life-long mentor.

Some try to reserve the word "mentor" for those esteemed faculty that sponsor our dissertation research and sit on our committees; however, I believe that any motivated and caring person can mentor a graduate student. Let's retake the word mentor; that includes those of you going into biotech start-ups or public policy - you're not off the hook! The skills developed here at Stanford are launching us into a wide range of careers from improving water sanitation in Africa, to researching the next Lipitor, to rewriting science policy in DC. The education of future students will be greatly enhanced if we, as alums, lend our collective experience and support. Each of you have and will continue to have so much to share with future students.

So, make yourself accessible to current students online. If you're visiting the bay area, contact our student groups and offer to talk about your experiences! Believe me, they'll take you up on it. More broadly though, your responsibility isn't just to the wonderfully privileged students here at Stanford. Wherever you call home, think about reaching out to the local university, high schools and elementary schools. As a Stanford alum, you have the ability to both inspire and support the young scientists of this world. It is not enough to leave mentoring to others. In a world that demands high levels of efficiency and doesn't guarantee job stability, it may seem like a lot to ask, but future generations will thank you for this commitment. You might even find it personally rewarding.

Now onto my second and more immediate mission. I want each and every one of you to truly revel in what you've achieved. That's right - revel - celebrate the magnitude of what you've accomplished. Graduate school is a "choose your own adventure" and your adventure is unique and incomparable. Take the weekend off, take lots of pictures, party with family and friends and let yourself enjoy this finale. If you're like me, and still have papers waiting to be finished; forget about it for a couple of days. It's not going anywhere. This is your graduation, and it is well earned.

Thank you.

**Remarks from Medical Student Speaker – Krishnan Subrahmanian** did his undergraduate studies at Harvard and also received a MPhil in education from Cambridge University as a Gates Scholar. With his graduation he will begin a training program in Global Pediatrics at the Texas Children's Hospital and the Baylor International Pediatric AIDS Initiative.

Dean Pizzo, Dean Prober, Esteemed guest Dr. Hamburg, Dr. Salvatierra, Dr. Knox, Dr. Blaschke, Dr. Gesundheit, Dr. Scholl's, Dr. Seuss, Dr. Pepper, Dr. Phil, Dr. Zaius, Dr. Octopus, Dr. Oz, Dr. J, Dr. Drew, Dr. Dre. Dr. Quinn...Medicine Woman, ladies, gentlemen, friends, family and the newest doctors. The Stanford School of Medicine Class of 2012.

I stand before you with more debt than Greece, unable to afford redundant luxuries like pants underneath an expensive graduation robe, yet so grateful to bear witness to a transformation. For many of you this has been a long haul. Decades of study. Mike Mancuso and Matt Goldstein have been students here since the Ford Administration. It is a big day for them and many of our physician-scientists because not only do they get an MD and a PhD today, they also get to enroll in Medicare and collect social security.

Whatever decade we started, we were asked to go into a room and interview a patient for the first time about a serious medical complaint. We were humbled by the tears and pain in that room and when it was over, the patient stood up, gave us a hug and said "Please stop crying. You're going to be a fine doctor...one day". Unsure of what to do, many of us spent our fifteen minutes in idle banter, where are you from? What do you do for a living? Do you come here often? Men, women or both?" All things you would hear at any local single's bar. Because we are all medical students, I assure you this was thoroughly awkward.

Years later, a lot has changed. You know, back when we started medical school we used a substance called paper and now, the kids use their fancy iPads and Angry Birds. When we started medical school, the building was made of cardboard, asbestos and lead and now it is made of platinum and powered by the strength of unicorns. In the spirit of student feedback and animal experimentation our class was guinea-pig to a new grading system. Over the years this has been tweaked and I'm excited to introduce to you today, the newest grading system at this distinguished institution. The top grade is now a smiley face representing "pass-with distinction but stay away from the patients." Next is a face that can neither smile nor frown. This means the student self-injected too much Botox. Finally, frowny face means "Your doctor does not play nice with others. Consider a career in pathology. At Harvard."

The greatest transformation of course, has been in the people gathered here, soon to be minted physicians and scientists. My classmates are an incredible group. We have published authors, and produced professional athletes. Last year seven Stanford medical students founded companies, three founded their own medical schools and four founded their own religions. Incredibly, two students last year learned how to take a blood pressure.

What makes my classmates incredible is not their accomplishments, it is their choice to care day after day. Graduations rarely celebrate the choice of compassion. From preschool to college we've been praised for talent and work. In medicine however, every day we bring our talents, work hard and yet we often, along with our patients, bow down

in front of luck. A horrible accident, an aberrant cell. And we realize that while we may be talented, we are just really blessed. With the good health to be here. With the resources and support to be here. Lucky to be educated people in the most influential country in the most connected world ever. Nobody has had greater choice in the great and horrible things they could do. Talented people after all chose to start the sub-prime crisis and MTV's "Jersey Shore." The talents we possess are rather arbitrary. The choices we make are not. What we choose to make our lives about. How we treat others.

Our politicians, society and even alma mater will grant us access and privilege based on our proximity to capital. Yet in the tradition of great caregivers from mothers to teachers to nurses to good friends who listen, you have chosen, instead proximity to people. You researched and knew everything about a disease for rounds but in moments and gestures no one will ever know about, you showed your patients that this disease was the least interesting thing about them. Your hands welcomed new life into the world and held on through last breathes. Your choice to spend your lives in service, caring for my parents. Our sisters and brothers. Today we celebrate your decision to confront suffering and especially celebrate those people who have chosen to spend their lives showing us how to care.

Administration, Faculty, Staff. The good news for you is that according to the original Hippocratic Oath, you as our teachers are entitled to a sum of our earnings from here on and I am to regard you and your children as family. The bad news for you is that I will now regard you and your children as family. Dear Uncle Dean Pizzo, I will be sleeping on your couch starting Tuesday. Dear Uncle Dean Prober, I need two-hundred thousand dollars and a pair of pants. We thank you for in your role as caregivers, in your role as educators and in your role as people, you always exemplified a life of care and love. You were there and caught us when we fell. Seriously, one of my classmates was in the operating room and just after the nine-hour surgery wrapped up, she began to feel light-headed and fell backwards into the arms of world famous surgeon Dr. Jeffrey Norton. With the efficiency of a surgeon he declared "Give her some room, get her some juice." When she went to apologize for the incident he promptly told her "You're an angel, you retracted perfectly." Again and again, this staff and faculty chose to care for us.

Our families, defined by blood, experience and love have cared for us, even when we didn't earn it. I learned in medical school that I owe a lot to my parents, namely a very bad lipid profile and nightmares about male patterned baldness. My mom once left me a voicemail and because I was a 'very busy' med student, it sat unlistened to for days. I proceeded to work a 30 hour shift and had a great post-call nap. I woke up to a loud knock at the door and found a very friendly Stanford police officer who had received a call from a very angry Indian woman. It is truly an act of care when your family will call the police on you. Worried hours by the phone and extra jobs so we could afford school. Gift baskets full of Twizzlers and journeys across the oceans more opportunities.

Families, we thank you and we hope to honor your sacrifices by allowing a fraction of the love and grace you have shown us to be regifted to those in their moment of need.

That this community has transformed awkward medical students into equally awkward physicians is remarkable. As we embark on a life of caregiving, we ask you to remind us,

and I remind myself that in order to care for others, we must care for ourselves. Unconditionally. We have all seen doctors, even predecessors from these seats, who were sad, frustrated. We work in a world and live in a field that, that sometimes tells us that we are good and valuable mostly due to a title, a rank, an honor or a Stanford degree. Let us not celebrate our accomplishment alone today for what when the accomplishments end or when they fail to satisfy? When we don't get this fellowship or grant? When everyone on Facebook has a bigger house, prettier baby, and a Nobel Prize. Our faith and this community remind us that it isn't our successes that make us great or construct our identity. Let us celebrate us today and every day, instead for reasons celebrate this work. The reasons we celebrate every patient. Our relationships. Our humanity. Our presence in this brief moment.

Classmates I hope we do continue to cure disease, solve problems and help create a world of deeper knowledge, greater justice and better health. But more importantly, I wish for us lives filled with care, joy and great relationships. Not as an abdication of the responsibility to improve the world, but as a recognition that maybe improving the world begins right there with care, joy and great relationships. I hope you have terrific conversations with patients, mentors and colleagues. I hope you have enough time with your family, friends and loved ones to enjoy them. And more time, such that you find them boring. And still more time such that you find them annoying. I hope you have great conversations with yourself. But not so loud that other people get scared. I mostly hope you live out the moments and the life for yourself that you will fight so deeply to preserve for others. To the graduates and to this community of Care. I'm humbled by you and your ridiculous good looks. I thank you. I wish you all wonderfully mediocre careers and phenomenal, joyful lives.

**Commencement Address by Dr. Margaret Hamburg, Commissioner of Food and Drug Administration.**

Dr. Margaret Hamburg literally grew up on the Stanford campus. Her parents, David and Beatrix Hamburg, were pioneers in Psychiatry and Mental Health. David Hamburg was the first chair of Psychiatry when Stanford Medical School relocated to Palo Alto, and he also played founding role in the Human Biology Program. Margaret Hamburg left Stanford after high school to attend the "Stanford of the East," doing her undergraduate work and medical school education at Harvard University. Following Residency in Internal Medicine at New York Hospital and the Weil-Cornell School of Medicine, she did research in neurosciences at the Rockefeller University. With the onset of HIV/AIDS she joined the National Institute of Allergy and Infectious Diseases at NIH as Assistant Director. Her work in public service continued when she was named the Commissioner of Health for New York City, where her impact on transmission of HIV infection and the control of multi-resistant tuberculosis won national acclaim. She was appointed by President Clinton as Assistant Secretary for Planning and Evaluation, a position she held through the end of the Clinton Presidency. She then served as the Vice President for the Biological Program at the Nuclear Threat Initiative until she was tapped by President Barack Obama on May 18, 2007 to become the 21<sup>st</sup> Commissioner of the Food and Drug Administration. She is the second woman to serve as Commissioner of the FDA. I have had the honor and privilege of knowing Dr. Hamburg for over 20 years and stand in awe of her incredible accomplishments and leadership. We are proud to have her as our 2012 Commencement Speaker.

Dean Pizzo, trustees, distinguished faculty, parents, families, and friends – thank you for inviting me to participate in this wonderful celebration. I join all of you in congratulating the outstanding 2012 graduates of the Stanford University School of Medicine.

Whether you are receiving an MD, Ph.D, Master’s Degree, or a combined degree – you are graduating from an extraordinary institution...and you are poised to do extraordinary things.

As a daughter of Stanford, I admit to some bias, but there are few medical schools, anywhere, that offer the education and training that you have received. The dedication of Stanford’s faculty, the caliber of the teaching, the importance of its research, the quality of patient care and the effectiveness of its leadership have earned Stanford Medical School enormous respect and admiration, and secured its position as one of the leading medical institutions in the world.

And for the Class of 2012, *you* too deserve respect and admiration. You have clearly succeeded—even excelled-- in this exceptionally dynamic and demanding academic environment. As I look out from this podium, I know that for decades to come you will save lives, solve medical mysteries, and invent technological wonders – building on what you have learned and accomplished here.

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There is an old saying that it is better to be lucky than good. True or not, there is certainly a lot of serendipity in life. But Louis Pasteur had a different take. He said, “Chance favors the prepared mind.” I was reminded of this every day while serving as New York City Health Commissioner because the quote was inscribed on a wall in our lobby.

But you don’t need a reminder. You are already far better prepared than most. And you now belong to a very elite group that has the tools and training to improve the lives of so many... whether it is through research, or medicine, or public service. What you do will matter.

So on behalf of those whose lives you have already touched with your medical and research skills – and will touch in the years ahead – I say: Thank you for working so hard – and preparing so well!

And now I’d like to suggest that you also say – thank you.

First and foremost, thank your families. They’ve stood by you. They’ve supported you. And today they share your joy, excitement and pride.

Thank your professors – the faculty and staff who put so much time and effort into teaching you, guiding you, inspiring you, and sometimes prodding you.

And thank each other too – because you never would have reached this auspicious day without the friendship, support, and collaboration of your colleagues.

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For many years, Stanford was my home. I lived right on campus where both of my parents were on the Medical School Faculty. Growing up, I was immersed in medicine and science. My parents were physicians and researchers. So were most of my friends' parents. It was the life I saw every day – and it looked fun, exciting and rewarding.

I went to college wanting to be a doctor, but when I got there, I discovered that premed courses weren't so fun and there were plenty of other interesting things to do in life. I got involved with the school newspaper, and for a while considered a career in journalism.

My father now refers to this as the period when I was “drifting.” But eventually the “prodigal daughter” saw the light and came around. And when I was admitted to medical school, my Great Aunt Winnie – who was like a grandmother to me – exclaimed “Oh sweetie, I'm so happy – now finally you can marry a doctor!” I did not.

And back then, I was absolutely not planning on a career in government or public service...I wanted to be an academic physician engaged in research, teaching and clinical practice. But that old Yiddish saying is true: People plan and God laughs.

For me, my path took a dramatic turn as I watched the HIV/AIDS epidemic emerge. As first year medical school students, we had been told that with the advent of antibiotics and vaccines, medicine was on the verge of ending the era of infectious diseases.

How wrong that was. Soon cases of a mysterious immune deficiency syndrome began to present. No one knew what caused it. No one knew how to care for it. No one even knew what to call it. But it was AIDS.

By the time I was an intern in New York City, I was taking care of a great many AIDS patients. Even one of my fellow interns was lost to this devastating disease. But we had no effective treatments and no medicine on the horizon. We could offer neither a cure nor hope. For a newly-minted, idealistic doctor like me – that was humbling.

Those early days of AIDS brought many lessons. The AIDS epidemic opened my eyes to the importance of research and global health. It opened my eyes to the need for strategic thinking – and an integrated health care system that harnesses the full continuum of science, medicine and public health. And it opened my eyes to the fact that some of the greatest challenges in medicine exist at the interface of a broader set of social, ethical, political and legal concerns.

The AIDS crisis propelled me into the world of public health and health policy. And yes, this terrible disease opened my eyes, but it also opened a door – the unexpected opportunity to become the New York City Health Commissioner.

My first reaction was: “This crazy! I’m not qualified.” Frankly, I was scared. My Aunt Winnie was not altogether happy either. “You will be throwing away the chance – after so many years of training – to be a ‘real doctor’,” she admonished. My father tried to calm her down, explaining that I would still be a real doctor – but instead of having one patient at a time, I would have 8 million. Now, as FDA Commissioner, I guess I have more than 300 million.

I am telling you this because when I sat where you are sitting today, I had no idea that I would one day end up in any of these jobs. Your future will definitely hold many opportunities. You’ve guaranteed that with the degree you are getting and all your hard work. But what path you choose will be neither obvious nor easy, nor without risk

So be open to and enthusiastically seize new opportunities, wherever and however you find them. Let chance favor your prepared minds...and make sure that you translate your ideas and opportunities into real world action. Even when the path is hard.

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When I began as New York City Health Commissioner, the City was facing a fiscal crisis and budgets were being slashed. New York City was not only an epicenter for HIV/AIDS, but we were struggling to deal with the resurgence of tuberculosis in epidemic proportions, and now in a more dangerous and harder-to-treat drug-resistant form. Communities in the city had health statistics that looked more like those of developing countries, and we faced a new threat—domestic terrorism—that required that us to think in new ways about what it means to protect health.

I felt unprepared for so many problems, big and small. Whether it was how to ensure that thousands of TB patients scattered around the city—many of whom were homeless, drug-addicted, or had multiple concurrent medical and social maladies—took their medications reliably for months on end so that they would be adequately treated and in order to prevent further development of drug resistant strains... or how, after a young boy had been bitten by a possibly rabid raccoon, to transport the raccoon’s brain up to the only rabies testing lab which was up in Albany when the only employees authorized to transport biological materials were out on strike.

Nothing in my medical school curriculum prepared me with the answers. But we found them: For TB, we sent healthcare workers into homes and under bridges or wherever needed, to make sure that patients took their medicine until cured; and for the raccoon brain, an igloo cooler, a car service, and a willingness to skirt a few rules did the job... and possibly saved a boy’s life.

My experience as health commissioner was perhaps the best preparation for my job at the FDA. I entered this role in the midst of similar challenging circumstances. Economic uncertainty, budget constraints, mistrust in regulation, and concern about the future of health care overall.

But to be honest, when I agreed to lead this enormous agency, I did not fully appreciate the scope of the job. As you may or may not know, the FDA regulates drugs,

medical devices, vaccines and biologics, the safety of our nation's food supply, blood supply, cosmetics, dietary supplements, and most recently tobacco. FDA regulated products account for over 20-cents of every dollar that consumers spend on products, and they represent things that people really care about—often in life-saving ways.

As an agency, we have to make hard decisions every day – and almost every decision leaves many people unhappy. But as I have learned, especially in the face of complex scientific and sociopolitical challenges, the only way for the FDA to stay on course is to be open, responsive and accountable; have a clear and consistent framework for decision making; weigh risks and benefits carefully; and – above all – ground our decisions in the best-available science.

No matter what you do, I think this is good advice for all.

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As future doctors, scientists, and public health officials – much will be expected of you. I urge you to recognize that with your training –and your new titles--comes a broader responsibility.

The poet William Butler Yeats wrote, “Though the leaves are many, the root is one.” I hope each of you will always remember that while the leaves of medicine are many, the root is one . . .and that is the imperative to advance human health for all.

Whether you are treating individual patients *as* a practicing physician; delving into the mysteries of life *as* a bench scientist; learning which therapies work best for which diseases *as* a clinical researcher; or addressing the broader issues of public health and health policy *as* a government official-- you have the opportunity and responsibility to be part of a whole that's greater than yourselves.

Be willing to work across disciplines, across sectors, across borders. Be willing to work with all those who have a stake in what you are doing or a perspective to offer. I know that this philosophy of productive collaboration is embedded in Stanford's education, research and patient care mission. I hope that you have embraced it and that you will live it in earnest. And why? Because the complexity and urgency of the problems before us demands it.

AIDS is now a chronic, manageable disease—not a life-sentence-- because the entire system worked together...from patients and their loved ones who advocated for their needs, to AIDS workers who walked the streets giving out accurate information and urging people to be tested, to doctors in clinics and hospitals who provided care and studied the disease, to dedicated and brilliant researchers in academic, government and private labs who made crucial discoveries about the nature of the disease and how to treat it.

The practice of medicine – and biomedical research – has never been more promising, more exciting, and more fulfilling. From sequencing the human genome, to eradicating small pox, to curing some deadly cancers, to effectively treating HIV infection, much of

what is possible today was only a hope when I began medical school. Huge progress has been made. But there is so much more to be done.

So never stop learning; never stop asking questions; and never forget that medicine is an art as well as a science practiced by doctors and researchers who bring to the bedside – and to the bench – not only technology and training, but also their humanity, caring, and concern.

Patients do not put their trust in machines or devices. They put their trust in you. You have already spent years studying, training, doing research and seeing patients. And you likely have many more years of education before you.

But please remember that the more skilled you become, the more specialized you become, and the more dependent on technology you become – the easier it becomes to lose your humanity, forget your compassion, and ignore your instincts.

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I have one last piece of advice: never, ever lose your moral compass.

AIDS was a crucible event that changed my career path – and my life's mission. Watching AIDS destroy so many led me to public service where I have had the opportunity to treat not just individual patients, but whole neighborhoods, communities, and populations.

You came of age under the shadow of a different crucible of events: 9/11; a bioterrorist attack; two wars; a flu pandemic; the worst recession since the 1930s; a widening gap between rich and poor; and the specter of everything from unsustainable growth in health care costs, to a widening gap between rich and poor, an aging population, growing conflict in many parts of the world, newly emerging biological threats—both naturally occurring and deliberately caused, global warming... and I'm afraid the list goes on.

I hope you will take advantage of these challenging times to strengthen *your* moral compass – by directing your energies and talents to doing good, not just doing well; that you will combine the knowledge and skills you've gained here at Stanford with the courage of your convictions...to be great doctors and scientists, to speak for those in need or underserved; to advance science in the service of humanity, and to make sure you hand the next generation of doctors and scientists an even more innovative, responsive, curative and preventive health care system than the one that was handed to you.

But all of that is about tomorrow. Today is about you – your joy, your pride, your achievements, and your well-deserved celebration. I offer you all my best wishes for your success and happiness.

Congratulations Class of 2012 – and good luck.

## Teaching Awards to Faculty and Residents

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

- **Maha Mahadevan, MD**, Associate Professor, Emergency Medicine
- **Keith Posley, MD**, Clinical Assistant Professor, Medicine
- **Roland Torres, MD**, Clinical Associate Professor, Neurosurgery

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

- **Paul Mohabir, MD** – Clinical Associate Professor, Medicine – Pulmonary and Critical Care Medicine

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

- **Erika Schillinger, MD**, Clinical Associate Professor, Internal Medicine

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

- **Madelyn Kahana, MD**, Professor, Pediatrics and Anesthesia

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

- **Vivek Bhalla MD**, Assistant Professor, Nephrology
- **Jeffrey Chi, MD**, Clinical Assistant Professor, Internal Medicine
- **Mark Krasnow, PhD**, Professor, Biochemistry

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

- **Jay Jernick MD**, Clinical Associate Professor, Internal Medicine
- **Kevin Keet, MD**, Internal Medicine
- **Gordon Lee, MD**, Assistant Professor, Plastic Surgery

### *The Arnold P Gold Foundation Award for Humanism and Excellence in Teaching*

- **Monica Dua**, Vascular Surgery
- **David Iberri**, Medicine
- **Michelle Jonelis**, Neurology
- **Sid Mahapatra**, Pediatrics
- **Mariam Naqvi**, Obstetrics and Gynecology
- **Anand Veeravagu**, Neurosurgery

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

- **John Gosling, MD**, *Professor, Surgery - Anatomy*

*School of Medicine Award for Graduate Teaching*

- **Nigam Shah, PhD**, *Biomedical Informatics*

*School of Medicine Award for Outstanding Service to Graduate Students*

- **Daniel Herschlag, PhD**, *Professor, Biochemistry*

*Best Lecture or Presentation 2012*

- **Lisa Chamberlain, MD**, *Assistant Professor, Pediatrics*

*Outstanding Teaching Assistant*

- **Daniel Roberts**, *SMS III*

*Community Preceptor (Clinical) 2012*

- **Erick Miranda, MD**, *Clinical Instructor, Emergency Medicine*
- **Scott Klein**, *Internal Medicine*

**The 2012 Graduates**

**Masters of Science**

**Aarin Celeste Ables**  
Human Genetics

**Tomer Altman**  
Biomedical Informatics

**Robert Thomas Arrigo**  
Biomedical Informatics

**Monica Bhargava, MDck**  
Health Services Research

**Stuart Logan Blair**  
Biomedical Informatics

**Robert Vernon Bruggner, Jr.**  
Biomedical Informatics

**Cynthia Jane Campen**  
Epidemiology

**Shuai Chen**

**Nicole Clarke**  
Medicine

**Mucio Delgado, MD**  
Health Services Research

**Catherine Amalia Del Vecchio**  
Medicine

**Kevin Furman Erickson**  
Health Services Research

**Jian Yu Fung**  
Biophysics

**Meghan Elizabeth Grove**  
Human Genetics

**Ming Guo**  
Biomedical Informatics

**Anita Honkanen, MD**  
Health Services Research

**Emily Clare Hurford**

Human Genetics

**Michael Hurley**  
Epidemiology

**Konrad Jan Karczewski**  
Epidemiology

**Hyunseok Peter Kang, MD**  
Biomedical Informatics

**Jonathan Karr**  
Medicine

**Dhruv Kazi**  
Health Services Research

**Daniel Li**  
Biomedical Informatics

**Yi Liu**  
Biomedical Informatics

**Robert DeWolfe Mair**  
Epidemiology

**Aditya D. Mantha**  
Epidemiology

**Eleanor Livingston Marshall**  
Genetics

**Matthew William Mell, MD**  
Health Services Research

**Seshadri Mudumbai, MD**  
Health Services Research

**Bitá Meira Nehoray**  
Human Genetics

**Daniel Edmund Newburger**  
Medical Informatics

**Jonathan Paul Palma**  
Biomedical Informatics

**Stephen Pan**  
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**Jessica Ellen Pierog**  
Epidemiology

**Michael Peter Polcari**  
Biomedical Informatics

**Jessica Lucille Profato**  
Human Genetics

**Nadine Rayes**  
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**Kimberly Jean Reiter**  
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**Nicelio Sanchez-Luege**  
Biomedical Informatics

**Benjamin Joseph Seligman**  
Epidemiology

**Layla Shahmirzadi**  
Human Genetics

**Jenny I Shen**  
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**Cyrena Torrey Simons**  
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**Brendan Stubbs**  
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**Nicholas Pierino Tatonetti**  
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**Vivian Tien**  
Chemical and Systems Biology

**Vivien Tsai**  
Health Services Research

**Jason Ruben Wheeler**  
Biomedical Informatics

**Sandra Win**  
Epidemiology

**Daniel Eric Winetsky**  
Health services Research

**Scott Robert Woody**  
Biophysics

## **DOCTOR OF PHILOSOPHY**

**Sarah Joann Aerni**  
Biomedical Informatics  
*Single-Cell Gene Expression Analysis in C. Elegans*

**Michael Nathaniel Alonso**  
Immunology  
*CD4+ T Cells Regulate the Formation and Function of Inflammatory Dendritic Cells*

**Mohammed Nazar AlQuraishi**  
Genetics  
*Non-parametric Energy Potentials: A Compressed Sensing Approach*

**Samuel Bandara**  
Chemical and Systems Biology  
*Parameter Extraction from Single Cell Dynamics Using Numerical Optimization Techniques*

**Max Ryan Banko**  
Genetics  
*Chemical Genetic Screen for Novel AMPK $\alpha$ 2 Substrates Reveals a Role for AMPK in Regulating a Network of Proteins Involved in Mitosis, Cytokinesis and Cytoskeletal Reorganization*

**Monique Theresa Barakat**  
Neurosciences  
*Hedgehog Signaling: The Role of Cilia in Developing, Adult and Neoplastic Cells*

**Odmara Liz Barreto-Chang**  
Neurosciences  
*Regulation of Neuronal Survival and CREB-Dependent Transcription by CaV1.2 L-Type Calcium Channels*

**Matthew Strecker Burriesci**  
Genetics  
*Developing Aiptasia Pallida as a Tractable Model System for Cnidarian-dinoflagellate Symbiosis: Identifying Transferred Metabolites and Designing Tools for Analysis of Ultra-high-throughput-sequencing Data*

**Brad Lee Busse**  
Biophysics  
*Proteomic Single-Synapse Analysis with Array Tomography*

**Amanda Morgan Casto**  
Genetics  
*The Evolution and Demography of X-linked and GWAS SNPs*

**Moria Cairns Chambers**  
Microbiology & Immunology  
*Building a Robust Immune Response*

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

**Jia-Yun Chen**  
Chemical and Systems Biology  
*Systems-level Understanding of Signaling Regulation on the Cell Fate Decision Between Proliferation and Differentiation*

**Regina Kar-Wuen Cheung**

Immunology

*Identification of pDC Subsets by  
Cytokine Secretion*

**Pohhui Chia**

Neurosciences

*Building a Synapse: From Extracellular  
Cues to Intracellular Proteins*

**Sok Hyon Choi**

Immunology

*Mechanisms of Oncogene Addiction and  
Tumor Recurrence in MYC-induced  
Lymphomas*

**Peiyong Chuan**

Biochemistry

*From Single Molecules to Single Cells:  
Mechanistic Studies of Myosin VI and  
Cardiac Myosin*

**Kelsey Lynne Clark**

Neurosciences

*The Role of the Frontal Eye Field in Gating  
and Maintaining Object Signals in Short-  
term Memory*

**Branden John Cord**

Neurosciences

*Modeling Midbrain Dopaminergic  
Neurobiology and Neuropathology  
Using Human ES and iPS Cells*

**Erik Corona**

Biomedical Informatics

*Effects of Recent Evolution on the Genetic  
Basis of Human Disease*

**Matthew Davidson**

Immunology

*Activated T-Helper Cells Promote the  
Formation of Distinct Monocyte-Derived  
Dendritic Cells*

**Catherine Amalia Del Vecchio**

Cancer Biology

*Defining Novel Functions for the Oncogenic  
Variant EGFRvIII in Tumor Initiation*

**Daniel James Dickinson**

Cancer Biology

*The Origin and Evolution of Alpha-catenin  
in Epithelial Cell Polarity*

**Zaoqing “Ching” Ding**

Immunology

*The Regulation of Neuroinflammation by the  
Modulation of Myeloid Cells*

**Badreddin Edris**

Genetics

*Novel Therapeutic Targets in Soft-tissue  
Sarcomas*

**Emily Lawson Egeler**

Chemical and Systems Biology

*Monitoring How Mammalian Cells  
Recognize and Degrade Unfolded Proteins*

**Laura Elizabeth Edgington**

Cancer Biology

*Functional Imaging of Cysteine Proteases in  
Cancer Using Novel Activity-based Probes*

**John Warner Fathman**

Immunology

*Purification and Characterization of the In  
Vivo Behaviors of Natural Killer Cell  
Progenitors and Hematopoietic Stem Cells*

**Ari Joseph Firestone**

Chemical and Systems Biology

*Identification and Characterization of Small  
Molecule Inhibitors of the Hedgehog  
Pathway Acting Downstream of Smoothed*

**Lynette Caizhen Foo**

Neurosciences

*Development of a Novel Method to Purify  
and Culture Mature Rat Astrocytes*

**Kirsten Linnea Frieda**

Biophysics

*Single-molecule Studies of RNA  
Conformations and Cotranscriptional  
Folding in Adenine Riboswitches*

**Lin Gan**

Chemical and Systems Biology  
*Genome-wide siRNA Screen Identifies Novel  
Regulators of Amino Acid Signaling to  
mTOR*

**Saeed Hassanpour Ghady**

Biomedical Informatics  
*Semantic-Based Information Extraction of  
Biomedical Definitions*

**Yun Pei Sharon Goh**

Immunology  
*Innate Immune Control of Liver  
Regeneration and Metabolism*

**Matthew Jordan Goldstein**

Immunology  
*CpG Vaccine Strategies Induce Tumor-  
reactive T Cells for Adoptive Therapy of  
Lymphoma*

**Jacqueline Leigh Grant**

Neurosciences  
*Unexpected Therapeutic Benefit from  
Peripheral Administration of Amyloid- $\beta$  in  
Th1- and Th17-Versions of Experimental  
Autoimmune Encephalomyelitis*

**Ethan Joseph Greenblatt**

Biophysics  
*Derlin-1 Is a Rhomboid Pseudoprotease  
Required for the Dislocation of Misfolded  
Proteins from the Endoplasmic Reticulum*

**Calvin Tyi Hang**

Cancer Biology  
*Cardiac Development, Growth, and Disease  
Through Chromatin Remodeling*

**Megan Amanda Hartman**

Biochemistry

*Studying the Functions of Drosophila  
Myosin VI Through Identification of  
Multiple Cargo-binding Proteins*

**Andrea Elisa Hartsock**

Molecular and Cellular Physiology  
*Regulation Mechanism of E-cadherin:  
Competitive Regulation of E-cadherin  
Juxtamembrane Domain Degradation by  
p120-catenin Binding and Hakai Mediated  
Ubiquitination*

**Olivia Louise Hatton**

Immunology  
*Syk Survival Signals in Epstein-Barr Virus  
(EBV) + B Cell Lymphomas*

**Robert Tyler Hillman**

Genetics  
*Neuropilins are Positive Regulators of  
Hedgehog Signal Transduction*

**Dustin Hite**

Biochemistry  
*Systematic Studies of Genome-wide  
Translation in Saccharomyces Cerevisiae*

**Wen Qi Ho**

Immunology  
*Opposition of Calcineurin/NFAT Signaling  
by the Nuclear Kinase Dyrk1a*

**Zuocheng Lewis Hong**

Genetics  
*Genetics and Genomics of Mammalian  
Pigment Patterning*

**Paul James Hoover**

Molecular and Cellular Physiology  
*Activation of the Calcium Release-activated  
Calcium Channel by STIM1*

**Emmy Evangeline Hoy**

Microbiology and Immunology  
*Community Dynamics and Variation of the  
Murine Intestinal Microbiota in Health and  
Disease*

**Tiffany Hung**

Cancer Biology

*Discovery and Characterization of Noncoding RNAs in the DNA Damage Response***Jennifer Hwa**

Neurosciences

*Dissecting the Cellular and Molecular Mechanisms Underpinning Two Aspects of Photoreceptor Morphology***Jamie Francine Conklin Imam**

Genetics

*From Stem Cells to Cancer: The Role of the RB Family in Cell Cycle Control and Differentiation***Katherine LaRoque Jameson**

Cancer Biology

*Tumor Selective Targeting of a Conserved Scaffold Domain***Max Jan**

Cancer Biology

*Pre-leukemic Hematopoietic Stem Cells Are Clonal Antecedents of Human Acute Myeloid Leukemia***Jeremy Te-Hsun Juang**

Microbiology and Immunology

*Peptide-MHC Heterodimers Reveal Differential Contribution of Weak Self-peptides to Positive and Negative Selection***Cigall Kodoch**

Cancer Biology

*ATP-Dependent Chromatin Remodeling in Human Malignancy: Identification and Characterization of Novel Subunits of the mSWI/SNF-like BAF Complex***Jonathan Karr**

Biophysics

*Development and Application of Whole-cell Models of Bacteria***Matthew Kaufman**

Neurosciences

*Neural Mechanisms and Dynamics Underlying Reaching and Decision Making***Daniel M Klass**

Biochemistry

*Global Mapping and Characterization of RNA-Protein Interactions Reveals New RNA Binding Proteins and Potential Novel Modes of Regulation and Specificity***Holbrook Kohrt**

Cancer Biology

*Strategies to Enhance Anti-tumor Immunity: Translating Preclinical Models***Josephine Yuenming Lee**

Microbiology and Immunology

*Host and Microbial Factors Influence Helicobacter Pylori Localization and Disease Progression***Peter Leader Lee**

Chemical and Systems Biology

*Localization and Movement: The Yin and Yang of Membrane Trafficking***Wei-Nchih Lee, MD**

Biomedical Informatics

*Evaluating Clinical Practice Patterns with a Knowledge-based Temporal Sequence Alignment Method***Hwei-Xian Leong**

Immunology

*Retinoic Acid Deficiency Reprograms Lamina Propria Dendritic Cells to Drive Inflammation and Tumor Growth in Spontaneous Intestinal Neoplasia***Xinhong Lim**

Developmental Biology

*Identification of Wnt-responding Stem Cells and Wnt-producing Niche Cells in Skin Homeostasis, Injury and Cancer*

**Audrie Lin**

Microbiology and Immunology  
*The Association of Gut Microbiota and Gut Function with Health and Disease in Bangladeshi Children*

**Jia-Ren Lin**

Chemical and Systems Biology  
*Investigating the Molecular Mechanism of DNA Replication Associated Mutagenesis in Human Cells*

**Ray Lin**

Biomedical Informatics  
*A Stochastic Model of Cancer Progression and Screening*

**Linda Yang Liu**

Biomedical Informatics  
*Multi-scale Data-driven Analysis of Sex Differences in Human Disease*

**Manuel Eduardo Lopez, Jr**

Developmental Biology  
*Regulable and Cell-type-specific Rescue of Niemann-Pick Disease Type C, a Neurodegenerative Lysosomal Storage Disorder*

**Michael Robert Mancuso**

Cancer Biology  
*Novel Regulators of Angiogenesis and Cerebrovascular Integrity*

**Michelle R Marques**

Cancer Biology  
*Elucidating the Mechanism of EWS-Fli1 Induced Oncogenesis*

**Sonia R Mayoral**

Neurosciences  
*Sex Differences in a Mouse Model of Neonatal Brain Injury Associated with Preterm Birth*

**Mark Allan McElwain**

Developmental Biology

*An Analysis of the WntD Signaling Pathway in Inhibition of Dorsal Activity and Embryonic Primordial Germ Cell Guidance*

**Carissa Bove Meyer**

Biochemistry  
*An In Vitro CENP-A Assembly Assay Reveals a Role for CENP-C in CENP-A Deposition*

**Christina Meyer**

Biochemistry  
*Recognition of a Hapten Molecule by Gamma Delta T Cell Receptors*

**Christopher Jason Moore**

Genetics  
*Genetic and Biochemical Analysis of the Ribonuclease E Family of Proteins and Escherichia Coli*

**Alexander Anthony Morgan**

Biomedical Informatics  
*Methods of Study Integration in Multiplex Molecular Medicine*

**Thuy-Duong Barbara Nguyen-Vu**

Molecular and Cellular Physiology  
*Neural Mechanisms of Cerebellum-dependent Learning: Error Signals and Enhanced Plasticity*

**Irene Adaugo Onyeneho**

Molecular and Cellular Physiology  
*The Role of Map6-like Proteins in Cilium and Centrosome Function; and Microtubule Stability*

**Scott Fraser Owen**

Molecular and Cellular Physiology  
*Oxytocin Enhances Signal-to-noise in Hippocampal Feed-forward Transmission by Selective Action on Targeted Interneuron Subtypes*

**Chirag Jagdish Patel**

Biomedical Informatics  
*Environment-wide Associations to Disease  
and Disease-Related Phenotypes*

**Samuel Mark Pearlman**  
Biomedical Informatics  
*A Mechanism for the Evolution of  
Phosphorylation Sites*

**Julie Rebecca Perlin**  
Developmental Biology  
*Schwann Cell Migration and Myelination in  
Zebrafish Peripheral Nerves*

**Soren Joseph Peterson**  
Biochemistry  
*Molecular and Cellular Mechanisms of  
Tracheal Invasion of Polarized Muscle  
Networks in Drosophila*

**Lori Katherine Phillips**  
Immunology  
*Innate and Adaptive Immune Responses to  
Neural Progenitor Cell Allografts*

**Justine Michelle Pompey**  
Microbiology and Immunology  
*Characterization of an RNaseIII Protein and  
its Potential Roles in the RNA Interference  
Pathway of the Protozoan Parasite,  
Entamoeba Histolytica*

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

**Paul George Rack**  
Chemical and Systems Biology  
*Genetic and Chemical Studies Towards the  
Understanding of Gli Regulation*

**Kavya Rakhra**  
Immunology  
*An Essential Role of the Immune System in  
Remodeling the Tumor Microenvironment  
Upon Oncogene Inactivation*

**Victoria Antonina Rafalski**  
Neurosciences  
*The SIRT1 Deacetylase in Neural Stem Cell  
Function and Oligodendrocyte Generation  
in Adults*

**Andreas Maximilian Rauschecker**  
Neurosciences  
*Visual Cortical Circuitry of Building Word  
Representations*

**Alexander Robert Red Eagle**  
Genetics  
*The IL-4/STAT6 Signaling Pathway in the  
Development of Obesity Induced Insulin  
Resistance*

**Simona Rosu**  
Genetics  
*Regulation of Meiotic Recombination: DNA  
Double-strand Break Formation and Repair  
in C. Elegans*

**Kacey Layn Sachen**  
Immunology  
*Self-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*

**Johanna Roberta Schaub**  
Cancer Biology  
*RILP-like Proteins and Ciliary  
Protein Trafficking*

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

**Alan Hunter Shain**  
Cancer Biology  
*Using Integrative Genomic Approaches to  
Understand the Biology of Pancreatic  
Cancer*

**Erin Forbes Simonds**  
Microbiology and Immunology  
*Single-cell Deep Profiling of Immune  
Signaling and Drug Responses in Normal  
and Malignant Human Hematopoiesis*

**Alfred Sun**  
Cancer Biology  
*Direct Conversion of Human Fibroblasts  
to Neurons: A Tale of Recapitulation of a  
MicroRNA/chromatin Switch During  
Mammalian Neural Development*

**Christina D'Aura Swanson**  
Immunology  
*The Role of Epidermal Growth Factor  
Receptor in Autoimmune Arthritis*

**Nicholas Pierino Tatonetti**  
Biomedical Informatics  
*Data-driven Detection, Prediction, and  
Validation of Drug-drug Interactions*

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

**Feng-Chiao Tsai**  
Cancer Biology  
*Temporal and Spatial Coordination of  
Ca<sup>2+</sup> Signaling in Cell Migration*

**Mark Akira Tsuchida**  
Biochemistry

*Dynamics and Mechanics of the Actin  
Cytoskeleton Ex Vivo*

**Nikoleta Georgieva Tsvetanova**  
Biochemistry  
*Characterization of Novel RNA-protein  
Regulatory Interactions in Saccharomyces  
Cerevisiae*

**Eric L Van Nostrand**  
Genetics  
*Genomics-driven Insights into Links  
Between Development and Aging in C.  
Elegans*

**Adrienne Elizabeth Vasey**  
Immunology  
*Immune Cell Trafficking and Function  
in Allogenic Responses*

**Saul Abraham Villeda**  
Neurosciences  
*Regulation of Neurogenesis and Cognitive  
Function by the Aging Systemic Milieu*

**Yue Wan**  
Cancer Biology  
*Understanding Transcriptomes Through  
RNA Structure*

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

**Jared William Wenger**  
Genetics  
*Natural Variation and Evolved Trade-offs in  
Yeast Carbon Metabolism*

**Nathaniel Shattuck Woodling**  
Neurosciences  
*Molecular Mechanisms of Inflammation  
in Models of Alzheimer's Disease*

**Guanglei Xiong**

Biomedical Informatics  
*Computational Methods of Modeling  
Vascular Geometry and Tracking  
Pulmonary Motion from Medical Images*

**Xiao Xu**  
Cancer Biology  
*A GATA Transcription Factor, Egl-27,  
Promotes Stress Response and Longevity in  
C. Elegans*

**Alper Yetil**  
Cancer Biology  
*Role of P19ARF in MYC Inactivation  
Induced Senescence and Sustained Tumor  
Regression and Generation of Inducible  
BM11 Transgenic Model*

**Rayka Yokoo**  
Genetics  
*COSA-1, a Meiotic Crossover Site  
Associated Protein*

**Fouad Zakharia**  
Genetics  
*Efficient Methods for the Study of  
Subcontinental Structure in Admixed  
Populations*

**Huibin Zhang**  
Genetics  
*In the Right Place at the Right Time:  
Understanding Basic MicroRNA Biology  
Through the Control of Developmental  
Timing by Lin-4 and Let-7 in C. Elegans*

**Weibin Zhang**  
Genetics  
*Regulation and Coordination of  
Homologous Pairing and Synapsis During  
Caenorhabditis Elegans Meiosis*

**Junaid Ziauddin**  
Microbiology and Immunology  
*Priming by Streptococcus Pneumoniae  
Causes Changes in Gene Expression in  
Drosophila Melanogaster*

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

## Doctor of Medicine

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**Adriana Pamela Anavitarte**  
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Cleveland, OH • Obstetrics & Gynecology

**Ruo Peng Zhu**

University of Michigan Hospitals  
Ann Arbor, MI • Internal Medicine

*Special Acknowledgement*

**Jose T Sandoval, MD**

Class of 1977  
Donna, TX • Family Medicine

## Other Awards and Honors

- **Dr. Steve Quake**, Lee Otterson Professor in the School of Engineering and Professor of Applied Physics and, by courtesy, of Physics, has been awarded the 2012 Lemelson-MIT Prize in recognition of his inventions. Quake invented a chip, similar to those in electronic devices, that lets scientists take nearly 10,000 different measurements at once. Through his work, called microfluidic large-scale integration, companies and research organizations are able to use the rubber chip technology in developing cancer drugs. The Lemelson-MIT Prize is known as the “Oscar for inventors” and recognizes people who translate ideas into innovations that improve the world.
- **Dr. Fernando Mendoza**, Professor of Pediatrics at Lucile Salter Packard Children’s Hospital, has received the President’s Award for Excellence through Diversity.
- **Dr. Ware Kushner**, Associate Professor of Medicine (Pulmonary and Critical Care Medicine), has been named as the recipient of this year’s William A. Nelson Award for Excellence in Health Care Ethics. This award was established to recognize a Veterans Health Administration employee and is based on the nominee’s contributions that demonstrate long-term commitment and achievement in the area of ethics education, consultation, policy, scholarship, or leadership.
- **Dr. Robert Tibshirani**, Professor of Health Research and Policy (Biostatistics), has won the 2012 Gold Medal of the Statistical Society of Canada (SSC). This award is the highest distinction bestowed by the SSC. It is given annually to a Canadian statistician or probabilist who has made outstanding research contributions to statistical sciences and is intended to honor a leader in the field.
- **Information Resources and Technology (IRT)** has been awarded the 2012 AMX Innovation Award for Automation & Control. It was selected from over 500 applications from universities across the globe.

*Congratulations to all!*

## Appointments and Promotions

**Alexander Butwick** has been appointed to Assistant Professor of Anesthesia, effective 5/01/2012.

**Andrew D. Endy** has been reappointed to Assistant Professor of Bioengineering, effective 6/01/2012.

**Nayer H. Khazeni** has been appointed to Assistant Professor of Medicine, effective 6/01/2012.

**Michaela Liedtke** has been reappointed to Assistant Professor of Medicine, effective 9/01/2012.

**Mark Pegram** has been appointed to Professor of Medicine, effective 5/01/2012.

**Eila Skinner** has been appointed to Professor of Urology, effective 5/01/2012.

**Edda Spiekerkoetter** has been appointed to Assistant Professor of Medicine, effective 6/01/2012.