



# STANFORD BIO-X PHD FELLOWSHIPS 2016



*Stanford Bio-X Fellows 2016 group photo*

# The Stanford Bio-X Graduate Fellowships



**The mission of the Stanford Bio-X Program is to catalyze discovery by crossing the boundaries between disciplines to bring interdisciplinary solutions, to create new knowledge of biological systems, and to benefit human health.** Since it was established in 1998, Stanford Bio-X has charted a new approach to life science research by bringing together clinical experts, life scientists, engineers, and others to tackle the complexity of the human body. Currently over 780 Stanford Faculty and over 8,000 students, postdocs, researchers, etc. are affiliated with Stanford Bio-X.

The Stanford Bio-X Graduate Fellowship Program was started to answer the need for training a new breed of visionary science leaders capable of crossing the boundaries between disciplines in order to bring novel research endeavors to fruition. Since its inception in 2004, the three-year fellowships, including the Bio-X Bowes Fellowships and the Bio-X Stanford Interdisciplinary Graduate Fellowships (Bio-X SIGFs), have provided 220 graduate students the opportunity to pursue interdisciplinary research and to collaborate with multiple mentors, enhancing their potential to generate profound transformative discoveries.

Stanford Bio-X Fellows become part of a larger Stanford Bio-X community of learning that encourages their further networking and development. Formal workshops help the Stanford Bio-X Fellows to improve their skills in delivering scientific presentations, writing manuscripts, writing grants, filing for patents, and creating business plans. Through the Stanford Bio-X Travel Program, where we award grants to fellows who are accepted to give talks at national and international meetings, we enable our fellows to disseminate their knowledge, learn from others, and network with leaders in their field. More informally, small-group luncheons and discussions with Nobel Laureates and other distinguished faculty, as well as industry leaders, provide Stanford Bio-X fellows with expert advice regarding their current research and future careers. Stanford Bio-X Fellows are provided the opportunity to present their work at all Stanford Bio-X symposia in order to share their knowledge and interact with other students, faculty, and members of the industry.

The generous support from donors, including the Bowes Foundation, enables the program to remain successful—at any given time, Stanford Bio-X is training approximately 60 PhD fellows, and Fall 2016 brings 22 new fellows to the program. Graduates of the program have transitioned to promising post-doctoral positions or medical training and to successful careers in academia and industry, while others have established their own start-up companies. Four of our alumni—David Camarillo, Adam de la Zerda, Andreas Loening, and Guillem Pratx—are now faculty members at Stanford University. Additionally, our fellows, past and present, publish high-impact first-author journal articles, receive grants and fellowships from Fulbright, NIH, NRSA, and NSF among others, file patent applications, and give TEDx talks, exemplifying the importance of interdisciplinary research.

We hope you enjoy reading about the research being conducted by our students.

# Success at Stanford and beyond...



**2006 Stanford Bio-X Bowes Fellow Guillem Pratx** is now an assistant professor of radiation oncology (radiation physics) at Stanford University. His doctoral work in the laboratory of Dr. Craig Levin (Radiology) focused on accelerating the processing of medical images by harnessing the power of graphics hardware normally used for video gaming. His lab's goal is to develop tools for accelerating cancer research and improving cancer care, employing a variety of physical and engineering approaches, including advanced optics, sensing, computing, and microfabrication. In 2015, he was named a

Damon Runyon-Rachleff Innovator, an award that funds cancer research by exceptionally creative thinkers with "high-risk/high-reward" ideas who lack sufficient preliminary data to obtain traditional funding.



**Lisa Gunaydin, 2008 Stanford Bio-X Bowes Fellow**, is now an assistant professor in residence in the Department of Psychiatry at the University of California-San Francisco (UCSF), along with a joint appointment at the UCSF Institute for Neurodegenerative Diseases (IND). Her recent research explores the role of specific regions of the brain in the causes and treatments of obsessive-compulsive disorder, anxiety, and depression. She is using optical recording and stimulation techniques to understand how normal patterns of neural activity are altered in psychiatric and neurodegenerative disease states, and how we can use targeted circuit modulation to reverse these abnormal patterns of activity, with the goal of correcting the pathological behavior and ultimately leading to more specific treatment approaches for these diseases.

*To learn about the successes of all of our alumni, please see the "Where are they now?" section beginning on page 28.*



# Stanford Bio-X Graduate Fellowships 2016



Stanford Bio-X Fellows 2014 group photo



## **RACHEL AGOLIA**

**Stanford Bio-X Honorary Fellow**

**Genetics**

*Mentors: Hunter Fraser (Biology) and Sergiu Pasca (Psychiatry & Behavioral Sciences)*

### **Exploring gene regulatory evolution in the human brain**

What makes humans unique? Perhaps our most striking feature is our capacity to develop advanced societies, cultures and communication—all made possible through the evolution of the human brain. To understand the evolutionary forces that have shaped the human neural identity, Rachel uses stem cell models of human and chimpanzee brain development. By comparing human and chimp gene expression levels in neural cell types *in vitro*, she aims to identify signatures of selection on particular developmental pathways and to determine the molecular events that have allowed for human-specific cognitive evolution.



## **KATHERINE AMBERG-JOHNSON**

**William and Lynda Steere Fellow, Stanford Bio-X SIG**

**Microbiology & Immunology**

*Mentors: Ellen Yeh (Biochemistry, Pathology, Microbiology & Immunology) and Matthew Bogyo (Pathology, Microbiology & Immunology)*

### **Novel inhibitors of malaria parasites**

In 2013, the World Health Organization estimated that malaria parasites caused 198 million clinical episodes and 500,000 deaths. New therapeutics and a deeper molecular understanding of parasite biology are desperately needed to combat growing resistance to current antimalarials. By targeting a novel compartment of the parasite not found in the human cell, Katherine aims to develop a novel antimalarial for clinical applications as well as a tool to better understand the parasite biology.

***“I love that you can walk by a Bio-X fellow's physical space, and in passing might see surgical robots, beating heart cells, and glowing proteins - all within 10 paces of each other. Bio-X is a model community for radical cross-discipline innovation.”***

**— Joel Sadler, Stanford Bio-X Bowes Fellow**



**ANDRÉS ARANDA-DÍAZ**  
**Stanford Bio-X Bowes Fellow**  
**Bioengineering**

*Mentors: KC Huang (Bioengineering, Microbiology & Immunology) and Justin Sonnenburg (Microbiology & Immunology)*

**A multiscale approach to antibiotic resistance in the gut**

The antibiotic resistance crisis poses a great threat to global health. For more efficacious treatments that maximize pathogen killing while minimizing resistance emergence, it is critical to understand the factors underlying antibiotic action in the body. Using the intestine as a model, Andrés will dissect the contribution of the environment to antibiotic susceptibility and resistance emergence in bacteria. Exploiting the power of imaging at different scales and high throughput growth measurements, he will study the effects of antibiotics on bacteria from single cells to multicellular communities in a host.

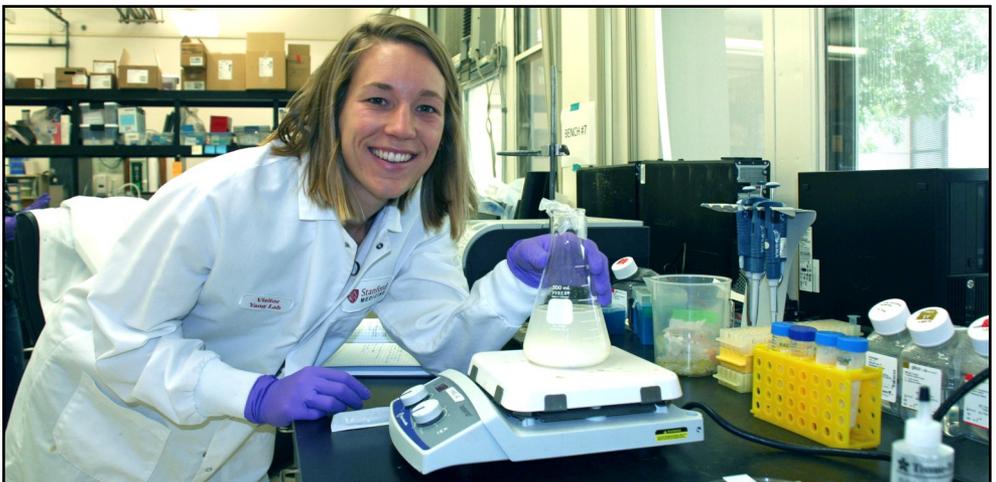
**SALIL BHATE**

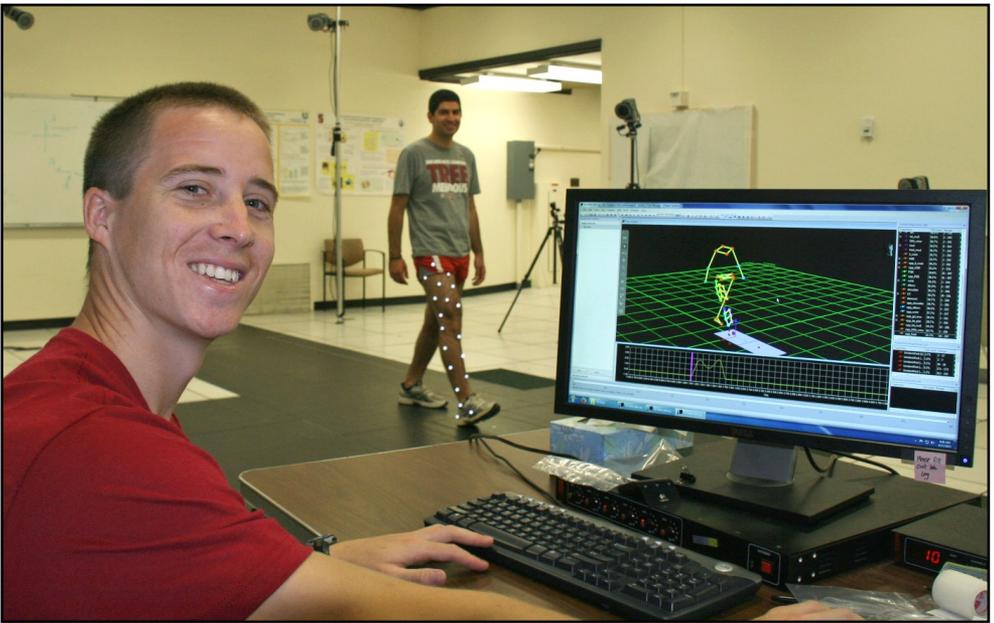
**Bruce and Elizabeth Dunlevie Fellow, Stanford Bio-X SIGF**  
**Bioengineering**

*Mentors: Garry Nolan (Microbiology & Immunology) and Stanley Lei Qi (Bioengineering, Chemical & Systems Biology)*

**Data-driven engineering of cellular phenotypes for cancer immunotherapy using single-cell, quantitative, multiparameter CRISPR screening**

Two ideas are revolutionizing efforts against cancer. The first is immunotherapy, repurposing our immune cells to destroy cancer cells. The second is genome-engineering, perturbing specific genes in our DNA to reprogram cells. But which of our cells' 25,000 genes do we perturb to reprogram them to fight cancer? Using his expertise in mathematics and machine-learning, Salil combines Professor Stanley Qi's tools to rapidly perturb genes using CRISPR/Cas9 with Professor Garry Nolan's tools measuring the molecular behaviors of cells and tissues at unprecedented speed and detail. Salil's experimental and computational innovations will enable us to systematically reprogram cells against cancer.





Stanford Bio-X Bowes Fellow Matthew Titchenal (see pg. 24 for research details)

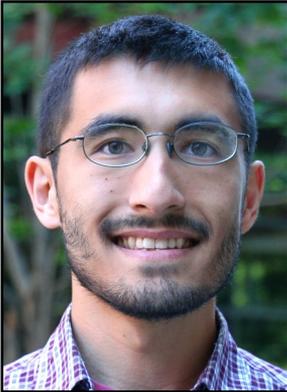
## **CHRISTOPHER DEMBIA**

**Stanford Bio-X Bowes Fellow  
Mechanical Engineering**

*Mentors: Scott Delp (Bioengineering, Mechanical Engineering), Stephen Boyd (Electrical Engineering), John Day (Neurology, Pediatrics - Genetics), Paul Nuyujukian (Bioengineering), Allison Okamura (Mechanical Engineering), and Walter Murray (Management Science & Engineering)*

### **Optimizing wearable robots for walking**

Wearable robotic devices are currently used to help restore mobility to individuals following stroke, spinal cord injury, or loss of a limb. A common goal of wearable robots is to reduce the energy required to walk. This is a challenging task, especially given our lack of knowledge about the neural, muscular, and skeletal adaptations that occur when wearing such devices. Chris applies the latest computational methods to optimize the behavior of virtual wearable robots and to gain insight into how devices interact with the human neural, muscular, and skeletal systems.



***“The support of the Bio-X SIGF and the Bio-X community has meant so much to me in my graduate school career. Because of Bio-X, I’ve been able to take more ownership over the path of my Ph.D. and pursue work that crosses traditional disciplinary boundaries. I was also able to take some time off during graduate school when an opportunity arose for me to work in industry, confident that my funding would still be there on my return. That experience was so valuable to me professionally and it never would have been possible without Bio-X.”***

**— Bethany Percha, Morgridge Family SIGF Fellow, Stanford Bio-X SIGF**



## **DARREL DEO**

### **Mona M. Burgess Fellow, Stanford Bio-X SIGF Mechanical Engineering**

*Mentors: Allison Okamura (Mechanical Engineering), Krishna Shenoy (Electrical Engineering), and Paul Nuyujukian (Bioengineering)*

#### **The role of haptic feedback in motor control**

Stroke is the leading cause of long-term motor disability in the U.S., but the mechanisms for motor impairment due to stroke are not completely understood. Darrel's research focuses on how people use haptic (force and touch) feedback in motor control, especially when normal motor control is disrupted. He will use a prosthesis simulator to perform motor control studies by introducing controllable levels of noise to the motor systems of healthy subjects to simulate motor impairment, and observe the manner in which subjects use haptic feedback and vision to compensate for the impairment. Subsequently, he will determine noise models for various types and degrees of motor impairment.



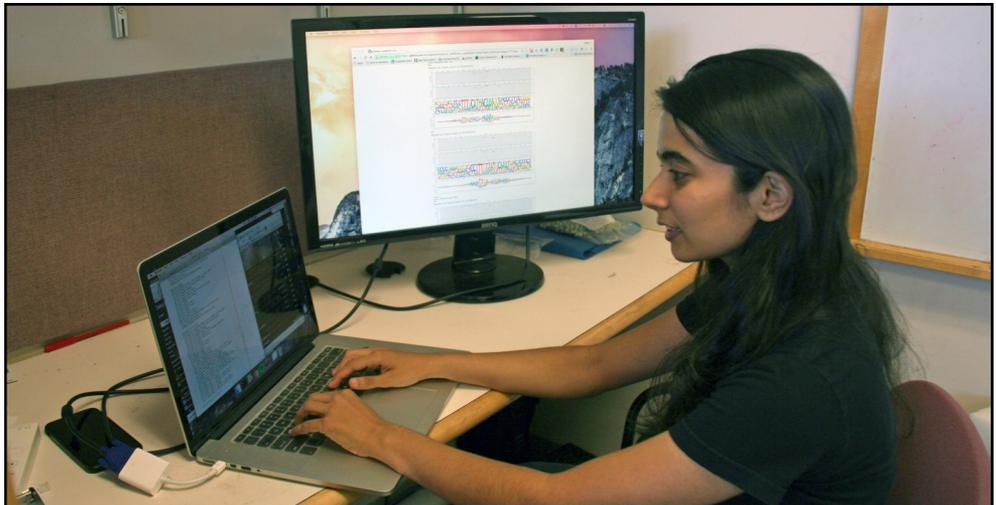
## **SARAH DIVEL**

### **Stanford Bio-X Bowes Fellow Electrical Engineering**

*Mentors: Norbert Pelc (Bioengineering, Radiology), Maarten Lansberg (Neurology), Max Wintermark (Radiology), and Sanjiva Lele (Aeronautics & Astronautics, Mechanical Engineering)*

#### **Optimization of x-ray computed tomography for stroke assessment**

Each year, approximately 800,000 people in the United States have a stroke. Early diagnosis and tailored treatment of these strokes are critical for optimal patient outcome. To make treatment decisions, physicians often rely on computed tomography (CT) perfusion images and metrics extracted from the scan data. However, these metrics can vary greatly and have yet to be fully compared to a baseline. Sarah's research aims to determine that baseline by simulating CT perfusion scans using realistic 3D digital brain models. Ultimately, this work will validate and optimize CT scans and increase physicians' ability to prescribe a data-driven plan of care.





Bruce and Elizabeth Dunlevie Fellow and Stanford Bio-X SIGF Elaine Ng (see pg. 10 for research details)

### **COURTNEY GEGG**

**Stanford Bio-X Bowes Fellow**

**Bioengineering**

*Mentors: Fan Yang (Orthopaedic Surgery, Bioengineering) and Stuart Goodman (Orthopaedic Surgery)*

**Regenerating cartilage with zonal organization using injectable, macroporous hydrogels with spatially patterned cues**

Cartilage loss is the leading cause of disability among adults, yet effective therapies remain elusive. Hydrogels are attractive 3D matrices for cartilage repair given their injectability but generally lack adequate mechanical strength needed for cartilage function. Furthermore, cartilage tissue is organized into stratified zones which are essential for its function, yet recreating such zonal organization remains challenging. Working at the interface of biomaterials, stem cell biology, and orthopaedic surgery, Courtney aims to (1) develop novel hydrogels with cartilage-mimicking biochemical and mechanical properties for stem cell-based cartilage repair; and (2) spatially arrange these hydrogels to recreate cartilage zonal organization.



### **JOHNNY ISRAELI**

**Bruce and Elizabeth Dunlevie Fellow, Stanford Bio-X SIGF**

**Biophysics**

*Mentors: Anshul Kundaje (Genetics, Computer Science), Douglas Vollrath (Genetics), William Greenleaf (Genetics), Polly Fordyce (Genetics, Bioengineering), Stephen Montgomery (Pathology, Genetics), and Thomas Quertermous (Cardiovascular Medicine)*

**Functional genomic variation in the retinal pigment epithelium and its relevance to age-related macular degeneration**

Age-related macular degeneration (AMD) is the fourth most common cause of blindness and its origin is in the retinal pigment epithelium (RPE). Can we gain insight into the genetic mechanisms underlying AMD through interrogation of RPE cells? Using RPE cells from a human cohort, the Kundaje lab will study how RPE genomics change in response to varying cell environments. Using state-of-the-art artificial intelligence, they will mine the experimental results to identify genetic mechanisms underlying RPE function and, ultimately, AMD.



**“Bio-X has been my guide and resource to leading world experts and big-bet disruptive research across various disciplines. Not only has Bio-X expressed confidence and belief in my abilities, they have encouraged me to try new things, helped me find my true passion, and set meaningful professional goals. I am very fortunate to be part of the Bio-X family.”**

**— Denitsa Milanova, Stanford Bio-X Medtronic Fellow**

### **YOON SEOK KIM**

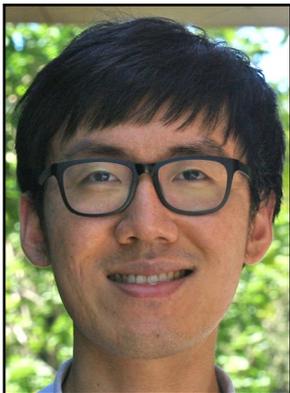
**Stanford Bio-X Bowes Fellow**

**Bioengineering**

*Mentors: Karl Deisseroth (Bioengineering, Psychiatry & Behavioral Sciences) and Brian Kobilka (Medicine - Cardiovascular, Molecular & Cellular Physiology)*

#### **Structure-guided expansion of inhibitory optogenetic tools**

Precise control of neurons is a long-sought goal in neuroscience because of its importance in brain study and psychiatric disease treatment. The field of optogenetics addresses this goal by using light to precisely control electric signals within neurons both spatially and temporally through light-activated ion channel proteins called opsins. Due to a lack of protein structure information, a major challenge is the engineering of opsins with the capabilities to inhibit neuronal activity. Yoon proposes to solve protein crystal structures of opsins to understand how to better engineer, as well as discover, ion channels that have broader and more efficient inhibitory capabilities. This would lead to a better control of brain activity and further contribute to the treatment of neurodegenerative diseases such as Parkinson’s disease.



### **MICHAEL LEUNG**

**Stanford Interdisciplinary Graduate Fellow (Anonymous Donor), Stanford Bio-X SIGF**

**Electrical Engineering**

*Mentors: Audrey Bowden (Electrical Engineering), Barry Behr (Obstetrics & Gynecology), and Sindy Tang (Mechanical Engineering)*

#### **Clinical classification methods for in vitro fertilization (IVF) embryos in order to increase the rate of singleton births**

Nearly 10% of couples will turn to assisted reproductive technologies (ART) such as *in vitro* fertilization (IVF) despite the high costs (>\$12,000USD) and low success rates (<25%). Michael’s goal is to identify an accurate way to predict the viability of implanted embryos in order to increase the singleton birth rate of IVF procedures. Using a variant of optical coherence tomography (OCT), Michael will measure structural, mechanical, optical, and temporal properties of early-stage embryos, and then use machine learning algorithms to identify key parameters associated with having a high accuracy for viability prediction.



## **AREK MELKONIAN**

**Stanford Interdisciplinary Graduate Fellow (Anonymous Donor), Stanford Bio-X SIGF**

**Chemical Engineering, Medicine**

*Mentors: Chaitan Khosla (Chemical Engineering, Chemistry), Calvin Kuo (Hematology), Joshua Elias (Chemical & Systems Biology), and Elizabeth Mellins (Pediatrics)*

### **Antigen presentation in coeliac disease**

Coeliac disease (CD) is an intestinal, inflammatory autoimmune disease triggered by the ingestion of gluten. A small peptide is the root cause of the immune response, but it is unclear how the immune system processes this peptide such that the body attacks itself. Arek hopes to use organoids—three-dimensionally-cultured small intestines—to investigate the mechanisms by which this peptide and its derivatives are presented to the immune system. More insight into the peptide chemistry and immunology of this process could lead to more effective therapeutics for the treatment and/or prevention of CD.

## **ELAINE NG**

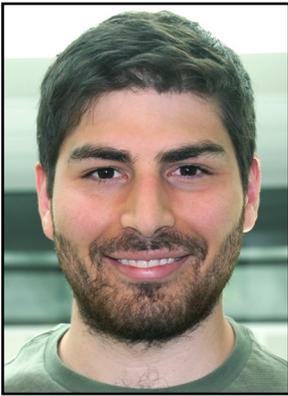
**Bruce and Elizabeth Dunlevie Fellow, Stanford Bio-X SIGF**

**Bioengineering**

*Mentors: Shan Wang (Materials Science & Engineering, Electrical Engineering), Paul Utz (Immunology, Rheumatology), and Samuel So (Surgery - General Surgery)*

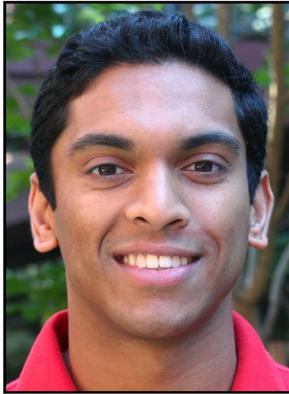
### **High-throughput biomarker detection of early hepatocellular carcinoma in high-risk Hepatitis B Virus-infected patients using automated point-of-care giant magnetoresistive sensor array platform**

About 50-60% of chronically infected hepatitis B virus patients develop cirrhosis and liver cancer. Liver cancer is the third leading cause of cancer-related deaths worldwide, with higher prevalence in developing countries. Most patients with hepatocellular carcinoma (HCC), a form of liver cancer, remain undiagnosed until advanced stages due to a lack of reliable early detection methods. Because giant magnetoresistance (GMR) sensors are significantly more sensitive than standard detection methods, Elaine will develop GMR sensor arrays for a novel high throughput screening biomarker assay to detect early HCC and hopefully significantly lower mortality. Furthermore, an automated GMR system enables point-of-care cancer detection in physician offices and resource-limited settings.





Stanford Bio-X Fellows 2012 group photo



**ARJUN PRABHAKAR**

**Affymetrix Bio-X Fellow, Stanford Bio-X SIGF  
Biophysics**

*Mentors: Joseph Puglisi (Structural Biology) and Peter Sarnow (Microbiology & Immunology)*

**Probing the dynamics of translation termination and recycling**

Proteins in all organisms are created from genes through a process called translation, carried out by a bio-machine called the ribosome. Upon completion, the protein is released from the ribosome (termination) and the ribosome disengages to find the next gene to translate (recycling). By integrating single-molecule techniques with *in vivo* studies, Arjun aims to elucidate the molecular mechanism of translation termination and recycling and apply this knowledge to better understand protein expression in bacterial cells. The new insights from these studies would provide new strategies to target bacterial translation in the field of antibiotics development.



**AMANDA RABE**

**Stanford Interdisciplinary Graduate Fellow (Anonymous Donor), Stanford Bio-X SIGF  
Cancer Biology**

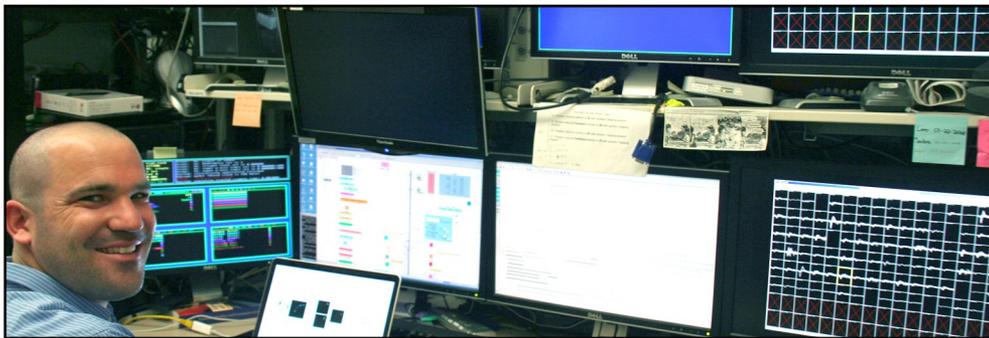
*Mentors: Jennifer Cochran (Bioengineering), Edward Graves (Radiation Oncology), Edgar Engleman (Pathology, Medicine - Immunology and Rheumatology), and Amato Giaccia (Radiation Oncology)*

**Combining radiation and targeted immunotherapy for metastatic cancer**

Cancer is a disease of over-proliferating cells, and it claims the lives of millions every year. The Cochran lab has developed a molecule that labels cancer cells but not healthy tissue and can recruit the immune system to destroy a tumor. In collaboration with the immunology and radiation oncology departments, Amanda is testing the effect of combining this tumor-targeted molecule with standards of care including radiation and chemotherapy. With this work, Amanda hopes to expand treatment options, increase survival, and improve quality of life for cancer patients by reducing the amount of chemotherapy or radiation necessary to elicit tumor reduction.

***“Bio-X is this amazing group of people that want to change the world and actually have the capacity to do that through innovative research. The connections I have made through this award with other fellows have already affected my research tremendously and made it so fun! I can't imagine a better, more eclectic group of people to be affiliated with and do fun stuff with. Thank you, Bio-X, for welcoming me into this amazing family!”***

***— Adi de la Zerda, Stanford Bio-X Honorary Fellow***



Stanford Bio-X Bowes Fellow Nir Even-Chen (see pg. 18 for research details)

## **HEATHER ROGAN**

**Rogers Family Interdisciplinary Graduate Fellow, Stanford Bio-X SIGF**

**Bioengineering**

*Mentors: Fan Yang (Orthopaedic Surgery, Bioengineering), Constance Chu (Orthopaedic Surgery), and Bo Wang (Bioengineering)*

### **Harnessing stem cells to catalyze cartilage regeneration**

Cartilage injuries represent a huge socioeconomic burden and represent a leading cause of disability among adults, profoundly impacting the lives of those afflicted, yet effective therapies remain elusive. Native cartilage cells (chondrocytes) are an attractive cell source for cartilage repair but are very limited in supply. Heather aims to harness fat-derived adult stem cells in conjunction with chondrocytes to enhance cartilage formation, minimizing the chondrocytes required. She further seeks to discover the molecular mechanisms that lead to enhanced cartilage formation during co-culture of chondrocytes and adult stem cells together. Finally, she will use novel biomaterials to support neocartilage formation, ultimately serving as a graft to repair cartilage defects.



## **HANDUO SHI**

**Rosenberg Ach Family Fellow, Stanford Bio-X SIGF**

**Bioengineering**

*Mentors: KC Huang (Bioengineering, Microbiology & Immunology) and Justin Sonnenburg (Microbiology & Immunology)*

### **Systems physiology of stress: How bacteria respond to environmental changes**

Bacterial cells constantly face multiple stresses, such as starvation, antibiotics, and competition between individual cells. Understanding how cells survive under stressed conditions (and grow again when environment becomes favorable) is critical for controlling latent bacterial infections and lessening disease burden. Handuo's research focuses on understanding how individual cells respond to these stressed conditions, which has potential applications in translational medicine.



***“Being a Bio-X fellow, I got the opportunity to interact and effectively share my work with fellow researchers through poster presentations and symposia. I cannot imagine doing my research without the support [of] the Bio-X graduate fellowship. I would like to thank Bio-X... and hope that they will continue to help students aspiring to do translational research at the juncture of science, medicine and engineering.”***

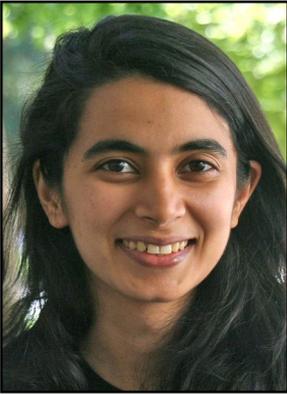
**— Pankaj Sharma, Stanford Bio-X Bowes Fellow**

**AVANTI SHRIKUMAR**  
**Stanford Bio-X Bowes Fellow**  
**Computer Science**

*Mentors: Anshul Kundaje (Computer Science, Genetics) and Helen Blau (Microbiology & Immunology)*

**Deep learning the regulatory code of embryonic stem cells**

Embryonic stem cells (ESCs) are pluripotent, meaning they can transform into any tissue type; however, many aspects of pluripotency remain poorly understood. Answers can be found in data from experiments where mature human cells are reprogrammed to a pluripotent state through fusion with mouse embryonic stem cells, yet prevailing computational tools cannot satisfactorily model these data. Powerful computational techniques known as deep learning could provide a solution, but also pose a challenge, as deep learning models are hard to interpret. By developing novel approaches to make the models interpretable, Avanti hopes to effectively apply deep learning to gain valuable insights into pluripotency.

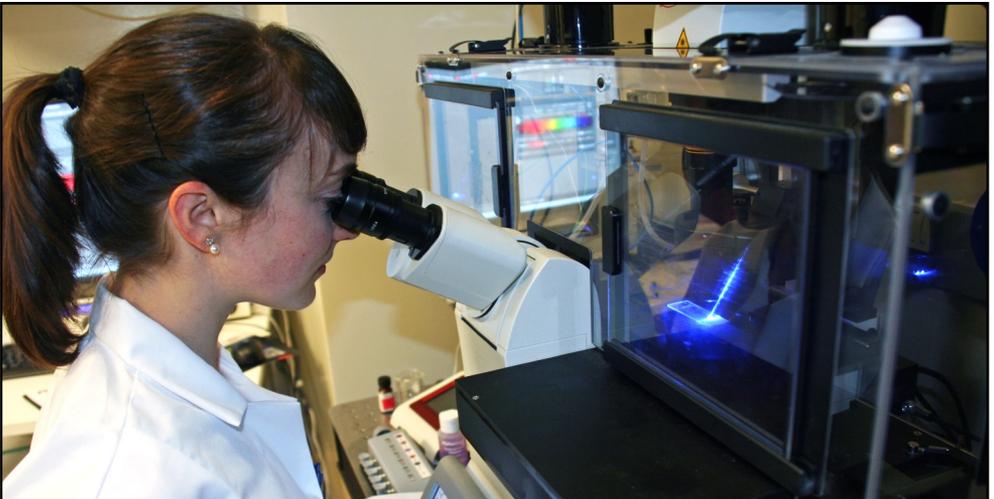


**MICHAEL WAINBERG**  
**Stanford Bio-X Bowes Fellow**  
**Computer Science**

*Mentors: Anshul Kundaje (Computer Science, Genetics) and Michael Bassik (Genetics)*

**Finding the genetic drivers of cancer with CRISPR/Cas9 genome editing**

Cancer is typically caused by harmful “driver” mutations that make a person’s cells grow abnormally. Unfortunately, tumors accumulate many harmless “passenger” mutations as they grow, making the true drivers difficult to discern. Worse, most drivers are not in genes, and it is often unclear which genes they target. Michael’s research involves using CRISPR/Cas9 genome editing to test thousands of candidate drivers from cancer genomics studies in a single experiment and seeing which ones affect cell growth, then using computational methods to predict their target genes. Michael hopes to collaborate with other researchers to understand how these genes cause cancer and to determine whether they are promising drug targets.



***“I have had an amazing experience with Bio-X. The program has introduced me to students, faculty, and industry leaders in departments with names I could barely recognize; it exposed me to cutting edge research and ideas that seem almost magical in their complexity; and, most importantly, it has enabled me to apply my expertise and passions in engineering to meaningful research in neuroscience. I am incredibly grateful for this opportunity provided to me by Bio-X.”***

**— Roshni Cooper, Morgridge Family SIGF Fellow and Stanford Bio-X SIGF**

**YONATAN WINETRAUB**

**Stanford Bio-X Bowes Fellow**

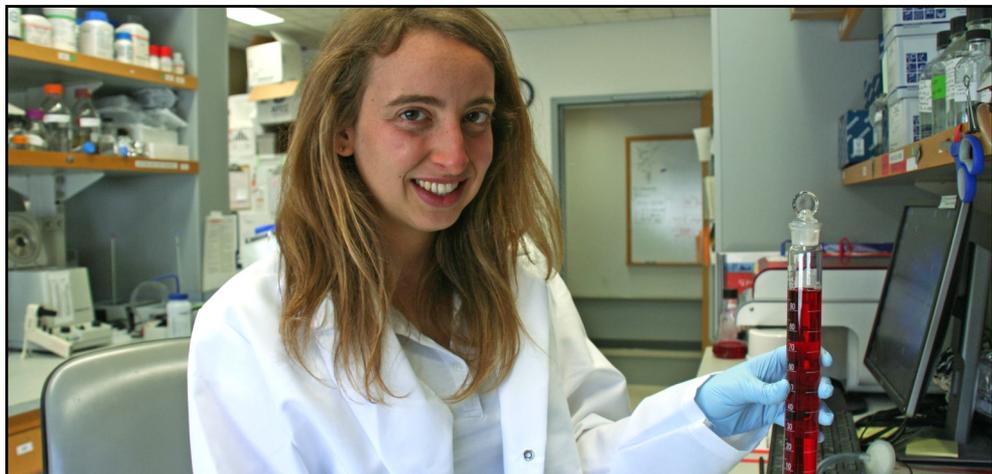
**Biophysics**

*Mentors: Adam de la Zerda (Structural Biology) and Steven Chu (Physics, Molecular & Cellular Physiology)*

***Trying to reveal cancer cell communication: Creating a molecular acoustic Optical Coherence Tomography (OCT) imaging device***

One of cancer’s greatest mysteries is its ability to learn and adapt. Cancer cells constantly communicate, sending chemical signals to and from the body, sensing their environment and tricking the immune system into not killing them. Unfortunately, our understanding of this communication is limited and there is no imaging device that can reveal this communication in living tissue. Yonatan is working on developing a device to image cancer cell communication (a molecular imaging device) by using Optical Coherence Tomography (OCT) to detect contrast agents’ small movement in response to ultrasound waves excitation. He hopes to shed light on the communication processes and possibly open the door to new types of cancer treatments.





*William and Lynda Steere Fellow and Stanford Bio-X SIGF Katherine Amberg-Johnson (see pg. 4 for research details)*

### **KATRINA WISDOM**

**Stanford Bio-X Honorary Fellow  
Mechanical Engineering**

*Mentors: Ovijit Chaudhuri (Mechanical Engineering) and Peter Marinkovich (Dermatology)*

#### ***Extracellular matrix malleability regulates 3D breast cancer cell invasion***

Detection of tumors has improved dramatically, but discerning which tumors will become invasive, and likely fatal, remains challenging. Neither genetics nor tumor size seem to predict whether a cancer will become invasive. Recent work has shown that physical properties of the tissue surrounding a tumor may promote or suppress invasion. Katrina has designed a novel, 3D biomaterials system to study how complex mechanical properties of the tumor microenvironment regulate breast cancer cell invasion. Her approach involves using time-lapse confocal microscopy and pharmacological inhibition of key force-sensing pathways, and she aims to propose new targets for therapeutic intervention.



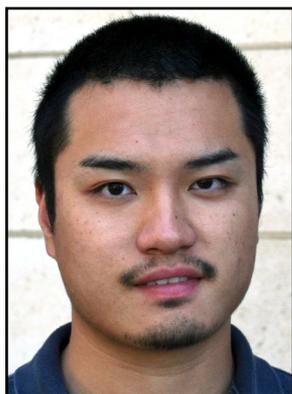
### **RENZHI YANG**

**Stanford Bio-X Bowes Fellow  
Biology**

*Mentors: Jun Ding (Neurosurgery) and Michael Lin (Neurobiology, Bioengineering)*

#### ***Dissecting the neural network underlying motor control***

Movement disorders are affecting more and more people nowadays. The striatum is a crucial brain structure for motor control which integrates information about environment, actions, and emotions to regulate the movement. Many movement disorders are caused by disrupted striatal functions. Renzhi's project is to use the cutting-edge technology of voltage imaging to characterize the network activity of striatum during movement. Combining this with genetic and drug manipulations, he will also study the regulation mechanisms of the striatal network. His work will provide clues for restoring the normal neural network for patients with motor disorders.



# Stanford Bio-X Graduate Fellowships 2004-2015 (in alphabetical order)



## **SHELLEY ACKERMAN**

**Stanford Bio-X Bowes Fellow 2014**

**Bioengineering**

Mentor: Edgar Engleman (Pathology)

*"Simultaneous delivery of antibody and adjuvant strengthens anti-tumor immunity"*



## **ATISH AGARWALA**

**Stanford Bio-X Bowes Fellow 2015**

**Physics**

Mentors: Daniel Fisher (Applied Physics) and Gavin Sherlock (Genetics)

*"Modeling the evolutionary consequences of interacting genes"*



## **OGUZHAN ATAY**

**Colella Family Fellow, Stanford Bio-X SIGF 2014**

**Biology**

Mentors: Jan Skotheim (Biology), Daniel Fisher (Applied Physics), Marcus Feldman (Biology), and James Ferrell (Chemical & Systems Biology, Biochemistry)

*"A novel framework for the analysis of principles of cellular signaling"*



## **EVA GABRIELA BAYLON**

**Stanford Bio-X Skippy Frank Fellow 2014**

**Mechanical Engineering**

Mentors: Marc Levenston (Mechanical Engineering) and Garry Gold (Radiology)

*"Characterization of the role of osmotic swelling stress in the mechanical behavior of meniscus fibrocartilage"*



## **RACHEL BRAUN-HAGEY**

**Mona M. Burgess Fellow, Stanford Bio-X SIGF 2014**

**Microbiology & Immunology**

Mentors: Jeffrey Glenn (Microbiology & Immunology) and Rhiju Das (Physics)

*"Identification and targeting of a novel pangenotypic RNA secondary structural element that mediates influenza A virus packaging and disease"*



**MATTHEW BULL****Stanford Bio-X Honorary Fellow 2015****Applied Physics**

Mentors: Manu Prakash (Bioengineering), Jan Skotheim (Biology), and Tim Stearns (Biology)

*“Collective ciliary modes govern organism-scale behavior – Decision making in the world’s simplest animal”***SHENGYA CAO****Morgridge Family SIGF Fellow, Stanford Bio-X SIGF 2013****Biochemistry**

Mentors: Aaron Straight (Biochemistry) and Andrew Spakowitz (Chemical Engineering)

*“What makes an extremely stable chromosome associated protein stable?”***ELIZABETH CHEN****Rogers Family Interdisciplinary Graduate Fellow, Stanford Bio-X SIGF 2013****Stem Cell Biology and Regenerative Medicine**

Mentors: Michael Clarke (Medicine) and Stephen Quake (Bioeng. and Applied Physics)

*“Epigenetic regulation of self-renewal processes in stem cell populations”***JUNHONG CHOI****Stanford Bio-X Bowes Fellow 2015****Applied Physics**

Mentors: Joseph Puglisi (Structural Biology) and Zev Bryant (Bioengineering)

*“Understanding modulation in translation elongation dynamics that changes decoding of the genetic code”***ANNA CUNNINGHAM****Morgridge Family SIGF Fellow, Stanford Bio-X SIGF 2015****Chemical & Systems Biology**

Mentors: Daria Mochly-Rosen (Chemical &amp; Systems Biology) and KC Huang (Bioengineering, Microbiology &amp; Immunology)

*“Protein evolution and disease-causing mutations in an antioxidant-producing enzyme”***ADI DE LA ZERDA****Stanford Bio-X Fellow 2013****Materials Science & Engineering**

Mentors: Sarah Heilshorn (Materials Science &amp; Engineering) and Paul Bollyky (Medicine)

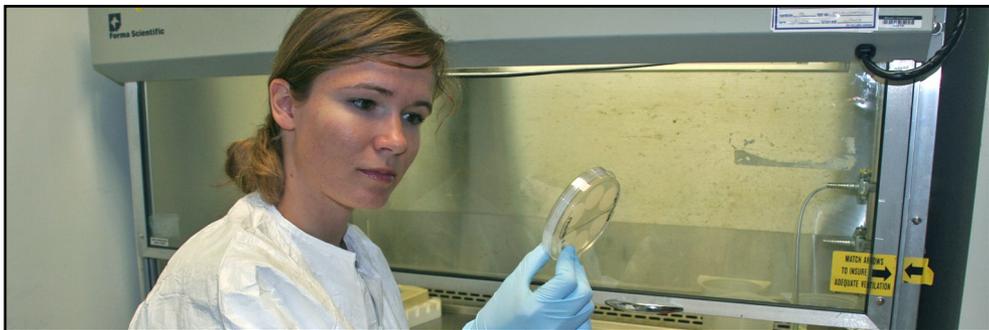
*“Tissue biomechanic affect T cells response”***SARAH DENNY****Stanford Bio-X Honorary Fellow 2013****Biophysics**

Mentors: William Greenleaf (Genetics), Rhiju Das (Biochemistry), and Aaron Straight (Biochemistry)

*“Dissecting RNA tertiary structure with millions of measurements at a time”***JASMINE DICKINSON****Stanford Bio-X Honorary Fellow 2015****Biology**

Mentors: Gregory Scherrer (Anesthesiology, Perioperative &amp; Pain Medicine, Neurosurgery) and Mark Schnitzer (Biology, Applied Physics)

*“The Anterior Cingulate Cortex projection neuron pathway to the dorsal Periaqueductal Gray modulates pain behavior”*



Luert Stryer Interdisciplinary Graduate Fellow, Stanford Bio-X SIGF Johanna Sweere (see pg. 24 for research details)



**KAREN DUBBIN**

**Stanford Bio-X Bowes Fellow 2013**

**Materials Science & Engineering**

Mentors: Sarah Heilshorn (Materials Science & Engineering), Giles Plant (Neurosurgery), and Andrew Spakowitz (Chemical Engineering)

*“Protein-engineered matrix for controlled delivery of cells for spinal cord injury”*



**NIR EVEN-CHEN**

**Stanford Bio-X Bowes Fellow 2015**

**Electrical Engineering**

Mentors: Krishna Shenoy (Electrical Engineering) and Kwabena Boahen (Bioengineering)

*“Neural control of a robotic arm using an adaptive brain-machine interface enabled by error detection feedback”*



**JULIA FUKUYAMA**

**Stanford Interdisciplinary Graduate Fellow (Anonymous Donor), Stanford Bio-X SIGF 2014**

**Statistics**

Mentors: Susan Holmes (Statistics), David Relman (Microbiology & Immunology), and Catherine Blish (Infectious Diseases)

*“Using evolutionary history to inform ecological data analysis”*



**DAVID GLASS**

**Stanford Bio-X Bowes Fellow 2013**

**Bioengineering**

Mentors: Ingmar Riedel-Kruse (Bioengineering) and KC Huang (Bioengineering)

*“Engineering emergent multicellular behavior through synthetic adhesion programs”*



**PEYTON GREENSIDE**

**Morgridge Family SIGF Fellow, Stanford Bio-X SIGF 2015**

**Biomedical Informatics**

Mentors: Anshul Kundaje (Genetics, Computer Science) and Thomas Quertermous (Cardiovascular Medicine)

*“Interpretable deep learning approaches to understand the genetic and regulatory basis of coronary artery disease”*



**AMALIA HADJITHEODOROU**

**Stanford Bio-X Bowes Fellow 2014**

**Bioengineering**

Mentor: Julie Theriot (Biochemistry, Microbiology & Immunology)

*“The cytoskeletal circuitry underlying directional decisions during neutrophil migration”*

**KEVIN HART****Stanford Interdisciplinary Graduate Fellow (Anonymous Donor), Stanford Bio-X SIGF 2015****Biology**

Mentors: James Nelson (Biology, Molecular &amp; Cellular Physiology), Beth Pruitt (Mechanical Engineering), William Weis (Structural Biology, Molecular &amp; Cellular Physiology, Photon Science), and Alex Dunn (Chemical Engineering)

*“E-Cadherin and LGN align epithelial cell divisions with tissue tension independently of cell shape”***FIDEL HERNANDEZ****Stanford Bio-X Honorary Fellow 2013****Mechanical Engineering**

Mentors: David Camarillo (Bioengineering) and Gerald Grant (Neurosurgery)

*“The biomechanics of mild traumatic brain injury: measurement, modeling, and prevention”***ZAHID HOSSAIN****Morgridge Family SIGF Fellow, Stanford Bio-X SIGF 2014****Computer Science**

Mentors: Ingmar Riedel-Kruse (Bioengineering) and David Dill (Computer Science)

*“Cloud experimentation system for biology: System architecture and utility in education”***BRIAN HSUEH****Bruce and Elizabeth Dunlevie Fellow, Stanford Bio-X SIGF 2015****Neurosciences, MSTP**

Mentors: Karl Deisseroth (Bioengineering, Psychiatry &amp; Behavioral Sciences), Seung Kim (Developmental Biology), Krishna Shenoy (Electrical Engineering), and David Lyons (Psychiatry &amp; Behavioral Sciences)

*“Pathways to clinical CLARITY: methodologies for transparent-volume quantitative analysis of irregular, soft, and heterogeneous tissues in development and disease”***EVA HUANG****Stanford Bio-X Bowes Fellow 2014****Chemical Engineering**

Mentors: Alexander Dunn (Chemical Engineering) and Vittorio Sebastiano (OB/GYN)

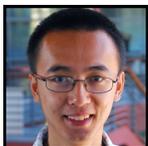
*“Role of hippo pathway-mediated mechanical signaling in human embryonic stem cell self-renewal”***HAISAM ISLAM****Stanford Bio-X Bowes Fellow 2010****Bioengineering**

Mentors: Gary Glover (Radiology) and John Pauly (Electrical Engineering)

*“High-resolution imaging methods for functional MRI applications”***IVAN IVANOV****Tusher Family Stanford Interdisciplinary Graduate Fellow, Stanford Bio-X SIGF 2015****Chemical Engineering**

Mentors: Zev Bryant (Bioengineering), Andrew Spakowitz (Chemical Engineering), Chaitan Khosla (Chemistry, Chemical Engineering), W. E. Moerner (Chemistry), and Adam de la Zerda (Structural Biology)

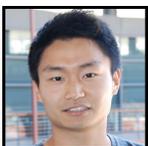
*“Development and application of high-resolution multimodal methods for investigating nucleoprotein complex dynamics”*

**KWANG EUN JANG****Stanford Bio-X Bowes Fellow 2014****Bioengineering**Mentors: Dwight Nishimura (Electrical Engineering) and Shreyas Vasanawala (Radiology)  
*"Multichannel 3D cone trajectory development for MR abdominal/cardiac imaging"***XIAOFAN JIN****Stanford Bio-X Bowes Fellow 2014****Bioengineering**

Mentors: Ingmar Riedel-Kruse (Bioengineering) and Alfred Spormann (Civil &amp; Environmental Engineering)

*"Patterning bacterial communities to investigate microbial interactions"***DANIEL KIM****Stanford Bio-X Bowes Fellow 2015****Biomedical Informatics, Medicine**

Mentors: Anshul Kundaje (Genetics, Computer Science), Paul Khavari (Dermatology), William Greenleaf (Genetics), Howard Chang (Dermatology), and Michael Snyder (Genetics)

*"An integrative machine learning framework applied to epidermal differentiation"***JUN WOO KIM****Stanford Bio-X Bowes Fellow 2013****Bioengineering**

Mentors: Jennifer Cochran (Bioengineering) and Alejandro Sweet-Cordero (Pediatrics)

*"Development of a therapy for lung cancer by targeting a novel molecular cancer marker with next generation protein engineering strategy"***BENJAMIN KOTOPKA****Stanford Bio-X Bowes Fellow 2015****Bioengineering**

Mentors: Christina Smolke (Bioengineering) and Rhiju Das (Biochemistry)

*"Designing new promoters for gene expression control in yeast"***BRAD KRAJINA****Stanford Bio-X Bowes Fellow 2015****Chemical Engineering**

Mentors: Andrew Spakowitz (Chemical Engineering), Sarah Heilshorn (Materials Science &amp; Engineering), Sebastian Doniach (Applied Physics, Physics, Photon Science), and Joseph Wu (Cardiovascular Medicine, Radiology)

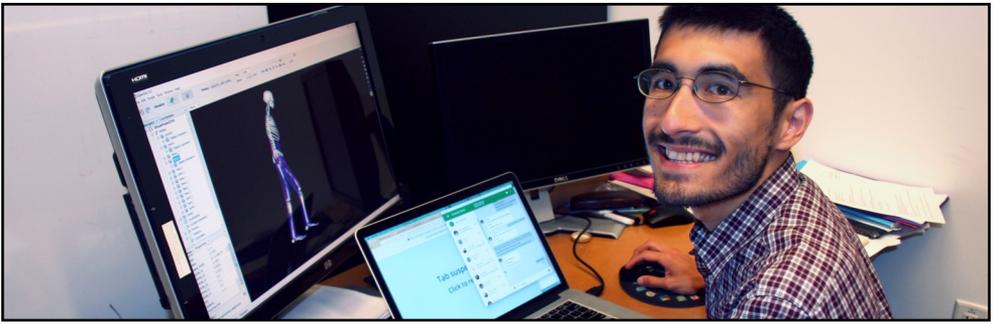
*"Topological control of DNA organization"***DEEPAK KRISHNAMURTHY****Stanford Bio-X Bowes Fellow 2015****Mechanical Engineering**

Mentors: Manu Prakash (Bioengineering) and Giulio de Leo (Biology)

*"Biophysics of swimming and host-seeking in Schistosomiasis cercariae"***JONATHAN LEONG****Stanford Bio-X Bowes Fellow 2010****Neurosciences, MSTP**

Mentors: Thomas Clandinin (Neurobiology) and Surya Ganguli (Applied Physics)

*"Functional imaging in the visual system of Drosophila melanogaster"*



Stanford Bio-X Bowes Fellow Chris Dembia (see pg. 6 for research details)



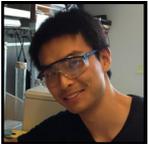
**STEVEN LEUNG**

**Stanford Bio-X Bowes Fellow 2013**

**Bioengineering**

Mentors: Kim Butts Pauly (Radiology) and Gary Glover (Radiology)

*"MR-guided simulations of focused ultrasound therapies"*



**YE (HENRY) LI**

**William and Lynda Steere Fellow, Stanford Bio-X SIGF 2013**

**Structural Biology, Public Policy (MPP Program)**

Mentors: Wing Wong (Statistics and Biostatistics), Michael Levitt (Structural Biology), Garry Nolan (Microbio. & Immun.), and Chiara Sabatti (Biostatistics and Statistics)

*"Characterizing single stem cells and their perturbed states" and "DNA modifications during bone development"*



**ORLY LIBA**

**Stanford Bio-X Bowes Fellow 2014**

**Electrical Engineering**

Mentors: Adam de la Zerda (Structural Biology) and Sanjiv Sam Gambhir (Radiology)

*"A new in vivo molecular imaging technology with single cell resolution based on optical coherence tomography"*



**SUNGWON LIM**

**Stanford Bio-X Bowes Fellow 2011**

**Bioengineering**

Mentor: Jennifer Cochran (Bioengineering)

*"Development of protein-based therapeutics targeting c-Met overexpressing cancers"*



**CHAO LIU**

**Stanford Interdisciplinary Graduate Fellow (Anonymous Donor), Stanford Bio-X SIGF 2015**

**Biochemistry**

Mentors: James Spudich (Biochemistry), Beth Pruitt (Mechanical Engineering), Daniel Bernstein (Pediatrics - Cardiology), and Euan Ashley (Cardiovascular Medicine, Genetics)

*"How do disease-causing mutations change the power produced by a heart muscle" protein?"*



**NIRU MAHESWARANATHAN**

**Stanford Bio-X Honorary Fellow 2013**

**Neurosciences**

Mentors: Surya Ganguli (Applied Physics) and Stephen Baccus (Neurobiology)

*"Understanding retinal computations in response to natural scenes"*



**TREVOR MARTIN**

**Stanford Bio-X Bowes Fellow 2012**

**Biology**

Mentors: Hunter Fraser (Biology) and Susan Holmes (Statistics)

*“Connecting genotype to phenotype through novel statistical methods that leverage gene expression”*



**MELINA MATHUR**

**Stanford Bio-X Bowes Fellow 2010**

**Bioengineering**

Mentor: Christina Smolke (Bioengineering)

*“Programming protein function with synthetic RNA splicing devices”*



**AARON MAYER**

**Stanford Bio-X Honorary Fellow 2015**

**Bioengineering**

Mentors: Sam Sanjiv Gambhir (Radiology), Irving Weissman (Pathology, Developmental Biology), William Greenleaf (Genetics), and Ron Levy (Medicine - Oncology)

*“A molecular imaging toolbox for monitoring cancer immunotherapies”*



**ALLISTER MCGUIRE**

**Stanford Bio-X Bowes Fellow 2013**

**Chemistry**

Mentors: Bianxiao Cui (Chemistry), Yi Cui (Materials Science & Engineering), and Zhenan Bao (Chemical Engineering)

*“Engineering a nanoelectrode to measure cardiac response to drugs”*



**AMANDA MIGUEL**

**Stanford Bio-X Honorary Fellow 2013**

**Bioengineering**

Mentor: KC Huang (Bioengineering)

*“High-throughput exploration of the phenotypic space in Escherichia coli shape mutants”*



**PAOLA MORENO-ROMAN**

**Stanford Bio-X Bowes Fellow 2014**

**Biology**

Mentor: Lucy O’Brien (Molecular & Cellular Physiology)

*“Investigating a novel link between tissue structure and cell differentiation during organ self-renewal”*



**CARMICHAEL ONG**

**Stanford Bio-X Bowes Fellow 2011**

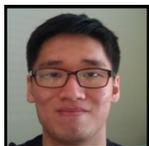
**Bioengineering**

Mentor: Scott Delp (Bioengineering and Mechanical Engineering)

*“Using optimal control theory to understand and improve human movement”*

***“I am extremely grateful to be part of the Bio-X community. Not only did I become closer with existing friends via poster sessions and outreach events, I also befriended numerous enthusiastic and talented young scientists. I look forward to the coming years with Bio-X and I am excited to meet the new generations of fellows!”***

**— Eva Huang, Stanford Bio-X Bowes Fellow**



**SUNG JIN PARK**

**Stanford Bio-X Bowes Fellow 2013**

**Bioengineering**

Mentor: Jennifer Cochran (Bioengineering)

*“Engineering protein scaffolds for targeted therapeutics”*



**BENJAMIN POOLE**

**Seth A. Ritch Graduate Fellow, Stanford Bio-X SIGF 2014**

**Computer Science**

Mentors: Surya Ganguli (Applied Physics) and Thomas Clandinin (Neurobiology)

*“Computational tools for large-scale calcium imaging of neural systems”*



**TERESA PURZNER**

**Felix and Heather Baker Interdisciplinary Graduate Fellow, Stanford Bio-X SIGF 2015**

**Developmental Biology**

Mentors: Margaret Fuller (Developmental Biology, Genetics, Obstetrics & Gynecology), Josh Elias (Chemical & Systems Biology), and James Chen (Chemical & Systems Biology, Developmental Biology)

*“Using developmental phosphoproteomics to identify therapeutic targets in medulloblastoma”*



**ADAM RUBIN**

**William and Linda Steere Fellow, Stanford Bio-X SIGF 2015**

**Stem Cell Biology & Regenerative Medicine**

Mentors: Paul Khavari (Dermatology) and Anshul Kundaje (Genetics, Computer Science)

*“Epigenomic dynamics in epithelial cancer and stem cell differentiation”*



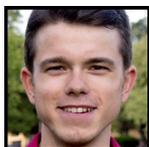
**ANDREW SAVINOV**

**Paul Berg Interdisciplinary Biomedical Graduate Fellow, Stanford Bio-X SIGF 2014**

**Biophysics Program**

Mentors: Steven Block (Biology and Applied Physics) and William Greenleaf (Genetics)

*“Investigating how a model RNA enzyme folds into shape and performs biochemistry using both single-molecule manipulation and massively parallel high-throughput assays”*



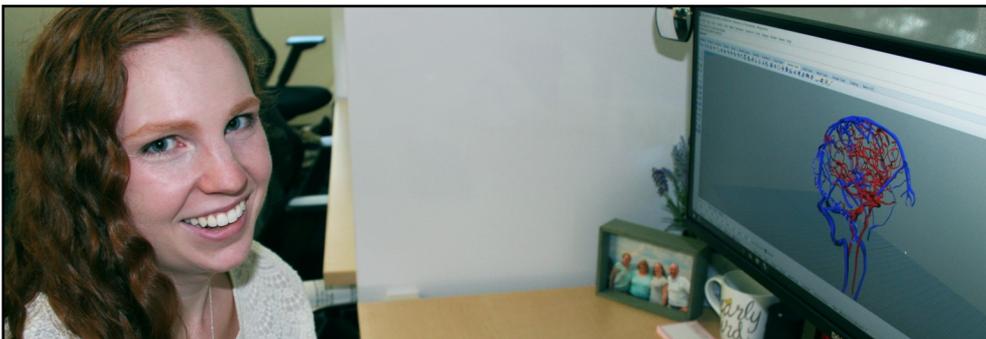
**TIM SCHNABEL**

**Stanford Bio-X Bowes Fellow 2015**

**Bioengineering**

Mentor: Elizabeth Sattely (Chemical Engineering)

*“Plant and rhizosphere pathway discovery and engineering towards improved crop drought tolerance”*





**JAKE SGANGA**

**Stanford Bio-X Bowes Fellow 2014**

**Bioengineering**

Mentors: David Camarillo (Bioengineering), Paul J. Wang (Cardiovascular Medicine), and Allison Okamura (Mechanical Engineering)

*“Flexible surgical robotics”*



**HERBERT SILVA**

**Stanford Bio-X Bowes Fellow 2013**

**Mechanical Engineering**

Mentors: Drew Nelson (Mechanical Engineering), Jason T. Lee (Vascular & Endovascular Surgery), and Staff Scientist Chris Tassone (SLAC)

*“A novel approach for studying the mechanical behavior of atherosclerotic plaque”*



**JOHANNA SWEERE**

**Lubert Stryer Interdisciplinary Graduate Fellow, Stanford Bio-X SIGF 2015**

**Immunology**

Mentors: Paul Bollyky (Medicine - Infectious Diseases) and Lynette Cegelski (Chemistry) (Medicine - Infectious Diseases) and David Stevens (Medicine - Infectious Diseases)

*“Immune modulation by filamentous bacteriophage in bacterial biofilms”*



**MATTHEW TITCHENAL**

**Stanford Bio-X Bowes Fellow 2015**

**Mechanical Engineering**

Mentors: Constance Chu (Orthopaedic Surgery), Thomas Andriacchi (Mechanical Engineering, Orthopaedic Surgery), Garry Gold (Radiology), and William Robinson (Medicine - Immunology & Rheumatology)

*“Biomechanical, biological, and structural interaction in the development of osteoarthritis following anterior cruciate ligament reconstructive surgery”*



**BARIS UNGUN**

**Stanford Bio-X Bowes Fellow 2014**

**Bioengineering, Medicine**

Mentors: Lei Xing (Radiation Oncology) and Stephen Boyd (Electrical Engineering)

*“Radiation therapy treatment planning using convex optimization”*





**MATHIAS VOGES**

**Stanford Bio-X Bowes Fellow 2013**

**Bioengineering**

Mentor: Elizabeth Sattely (Chemical Engineering)

*“Engineering interactions between plants and plant growth-promoting microbes”*



**WANXIN WANG**

**Stanford Bio-X Bowes Fellow 2015**

**Bioengineering**

Mentors: Stephen Quake (Bioengineering, Applied Physics), Carlos Simon (OB-GYN/ Reproductive, Perinatal & Stem Cell Biology Research), and Barry Behr (OB/GYN)

*“Developing a high-resolution and minimally invasive approach to diagnose endometrium receptivity”*



**LUCIEN WEISS**

**Stanford Bio-X Bowes Fellow 2012**

**Chemistry**

Mentors: W. E. Moerner (Chemistry) and Matthew Scott (Developmental Biology)

*“Tracking individual proteins in live cells to reveal molecular details of signaling pathways”*



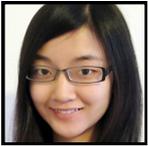
**ANDREW WEITZ**

**Stanford Bio-X Bowes Fellow 2012**

**Bioengineering**

Mentor: Jin Hyung Lee (Neurology and Bioengineering)

*“Dissection of large-scale brain networks using optogenetic fMRI”*



**LYNDIA WU**

**Stanford Bio-X Bowes Fellow 2014**

**Bioengineering**

Mentors: David Camarillo (Bioengineering), Gerald Grant (Neurosurgery), and Joyce Liao (Ophthalmology)

*“A real-time screening tool for mild traumatic brain injury”*



**ANDREW YANG**

**Stanford Bio-X Honorary Fellow 2015**

**Bioengineering**

Mentors: Tony Wyss-Coray (Neurology) and Carolyn Bertozzi (Chemistry)

*“Tagging proteins in our blood to understand how we age”*



**HELEN YANG**

**Lavidge and McKinley Interdisciplinary Fellow, Stanford Bio-X SIGF 2014**

**Neurobiology**

Mentors: Thomas Clandinin (Neurobiology), Michael Lin (Neurobiology and Bioengineering), and Stephen Baccus (Neurobiology)

*“Optical recording of Drosophila early visual neurons to reveal neuronal computations”*



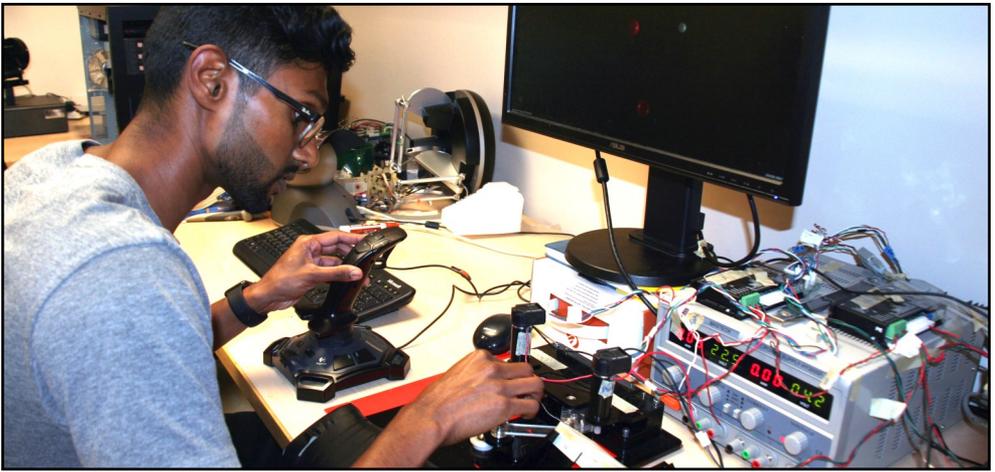
**ANNE YE**

**Stanford Bio-X Bowes Fellow 2012**

**Bioengineering**

Mentor: Jennifer Cochran (Bioengineering)

*“Engineering a new enzyme for precise protein labeling”*



Mona M. Burgess Fellow and Stanford Bio-X SIGF Darrel Deo (see pg. 7 for research details)



**PATRICK YE**

**Bruce and Elizabeth Dunlevie Fellow, Stanford Bio-X SIGF 2013**

**Bioengineering**

Mentors: Kim Pauly (Radiology) and Stephen Baccus (Neurobiology)

*"Elucidating the mechanisms of in vivo ultrasound neuromodulation"*



**JENNIFER YONG**

**Morgridge Family SIGF Fellow, Stanford Bio-X SIGF 2012**

**Mechanical Engineering**

Mentors: Scott Delp (Bioengineering and Mechanical Engineering) and Michael Fredericson (Orthopaedic Surgery)

*"Barefoot running: changes in injury mechanisms between forefoot and rearfoot strikers"*



**RYAN YORK**

**Stanford Bio-X Bowes Fellow 2013**

**Biology**

Mentors: Hunter Fraser (Biology) and Russell Fernald (Biology)

*"Castles made of sand: gene expression evolution and behavior in cichlid fish"*



**NOAH YOUNG**

**Stanford Bio-X Bowes Fellow 2012**

**Bioengineering**

Mentors: Karl Deisseroth (Bioeng. and Psychiatry) and Surya Ganguli (Applied Physics)

*"Observing and perturbing dynamics with calcium imaging, optogenetics, and virtual reality in zebrafish"*



**DANQING ZHU**

**Stanford Interdisciplinary Graduate Fellow (Anonymous Donor), Stanford Bio-X SIGF 2015**

**Bioengineering**

Mentors: Fan Yang (Bioengineering, Orthopaedic Surgery), Sarah Heilshorn (Materials Science & Engineering), R. Lane Smith (Orthopaedic Surgery)

*"Mimicking cartilage tissue zonal organization by engineering hydrogels with gradient niche cues"*

# Where are they now?

*127 of our Stanford Bio-X Fellows have graduated and gone on to utilize what they have learned in the corporate, academic, and governmental sectors...*

**Namiko Abe** (Paul Berg Interdisciplinary Biomedical Graduate Fellow, Stanford Bio-X SIGF 2006) is a project manager at the New York Genome Center.

**Jaimie Adelson** (Stanford Bio-X Honorary Fellow 2006) completed a Fulbright Fellowship in Indonesia in October 2015 and then began a postdoctoral position in Gary Westbrook's lab at Oregon Health Sciences University's Vollum Institute in Portland, Oregon.

**Afsheen Afshar** (Stanford Bio-X Bowes Fellow 2005) is a managing director and the Chief Data Science Officer at JPMorgan, Corporate and Investment Bank. In this role, he has global responsibilities for data and analytics across all lines of business.

**Ron Alfa** (Stanford Bio-X Bowes Fellow 2011) is the director of translational biology at Recursion Pharmaceutical.

**Edith Arnold** (Stanford Bio-X Bowes Fellow 2006) is working at Apple, Inc. as a scientist in the wireless technologies division.

**Georgios Asimenos** (Stanford Bio-X Bowes Fellow 2005) is the vice president at DNAnexus. He is working on precisionFDA, an exciting new project that the FDA has undertaken as part of Obama's Precision Medicine Initiative and which has been assigned to DNAnexus for building.

**Aakash Basu** (Stanford Bio-X Bowes Fellow 2009) a postdoctoral fellow in the biophysics department at Johns Hopkins University School of Medicine.

**Daniel Bechstein** (Stanford Bio-X Bowes Fellow 2012) is a sensor design engineer at Apple, Inc.

**Elsa Birch** (Stanford Bio-X Bowes Fellow 2009) is a software engineer at Pinterest.

**Jennifer Blundo** (Stanford Bio-X Bowes Fellow 2006) is a visiting assistant professor at the UCLA David Geffen School of Medicine and a lecturer at the Anderson School of Management. She oversees the UCLA Business of Science Center MedTech Innovation Program for innovation and entrepreneurship in medical devices and teaches classes on healthcare technology, entrepreneurship, and medtech. Jennifer also serves as the Director of the MedTech Innovator Competition and Accelerator, an industry-driven platform for medtech and digital health start-ups.

**Jennifer Brady** (Stanford Bio-X Skippy Frank Fellow 2010) is a scientist at Surrozen, Inc. The company is focused on harnessing the Wnt pathway to identify novel therapeutics for regenerative medicine.

**Relly Brandman** (Stanford Bio-X Bowes Fellow 2004) is a product manager at Google.

**Craig Buckley** (Stanford Bio-X Bowes Fellow 2011) is a postdoc in Alex Dunn's lab at Stanford.

**David Camarillo** (Stanford Bio-X Bowes Fellow 2004) is an assistant professor in the bioengineering department at Stanford University.

**Mindy Chang** (Stanford Bio-X Bowes Fellow 2005) is currently doing work as a consultant.

**Ian Chen** (Stanford Bio-X Bowes Fellow 2006) is a cardiology fellow at Stanford University.

**Jin Chen** (Lubert Stryer Interdisciplinary Graduate Fellow, Stanford Bio-X SIGF 2012) is a postdoctoral student at Jonathan Weissman's lab at University of California-San Francisco.

**Fang-Chieh Chou** (Stanford Bio-X Fellow 2012) is a data mining engineer at Yelp.

**Vincent Chu** (Stanford Bio-X Pfizer Fellow 2005) is a platform engineer at Clara Lending in San Francisco.

**Virginia Chu** (Stanford Bio-X Bowes Fellow 2005) is a pediatric occupational therapist at Assential Therapies, a private clinic in Chicago.

**Kelsey Clark** (Stanford Bio-X Bowes Fellow 2007) is an assistant research professor in the cell biology and neuroscience department at Montana State University.

**Roshni Cooper** (Morgridge Family SIGF Fellow, Stanford Bio-X SIGF 2012) is at Google to work on self-driving cars.

**Melinda Cromie** (Paul Berg Interdisciplinary Biomedical Graduate Fellow, Stanford Bio-X SIGF 2008) is a research engineer at Superflex in Menlo Park, CA. She is leading a project to make wearable robotic suits to help kids with disabilities.

**Jing-yu Cui** (Stanford Bio-X Bowes Fellow 2011) is working at Google as a software engineer.

**Sanjay Dastoor** (Stanford Bio-X Bowes Fellow 2006) is co-founder at Boosted, where they design fun, fast, and simple electric vehicles.

**Adam de la Zerda** (Stanford Bio-X Skippy Frank Fellow 2008) is an assistant professor of structural biology at Stanford University.

**Mario Diaz de la Rosa** (Stanford Bio-X Bowes Fellow 2008) is an adjunct instructor at Career Education Corporation.

**Rebecca DiMarco** (Stanford Bio-X Bowes Fellow 2009) is a full-time mom and looking for her next endeavor.

**Sheng Ding** (Stanford Bio-X Bowes Fellow 2007) works for Pfizer-Rinat, one of the world's leaders in biopharma industry, as a Senior Scientist focusing on antibody engineering.

**Graham Dow** (Stanford Bio-X Bowes Fellow 2009) is a research assistant professor in the department of biology at Boston University.

**Remy Durand** (Bruce and Elizabeth Dunlevie Fellow, Stanford Bio-X SIGF 2010) works for Frazier Healthcare's Life Sciences Venture Capital team where he focuses on investment identification, due diligence, and deal closing.

**Christopher Emig** (Stanford Bio-X Bowes Fellow 2011) is the CEO of Augmenta Bioworks, Inc. and scientific advisor to Chimera Bio and Gen9, Inc.

**Gabriela Fragiadakis** (Stanford Bio-X Bowes Fellow 2013) is working with Professor Justin Sonnenburg as a postdoc in the microbiology & immunology department at Stanford University.

**Limor Freifeld** (Bruce and Elizabeth Dunlevie Fellow, Stanford Bio-X SIGF 2010) is a research associate in Pablo Blinder's lab at Tel-Aviv University's department of neurobiology.

**Stephen Fried** (Stanford Interdisciplinary Graduate Fellow (Anonymous Donor), Stanford Bio-X SIGF 2012) is a junior research fellow at the University of Cambridge (King's College). Stephen focuses on chemical and synthetic biology in the research group of Jason Chin at the MRC laboratory of molecular biology.

**Xiaoqing Gao** (Enlight Foundation Interdisciplinary Graduate Fellow, Stanford Bio-X SIGF 2012) is working with Prof. Elowitz as a postdoctoral student in the Biology department at Caltech.

**Viviana Gradinaru** (Colella Family Fellow, Stanford Bio-X SIGF 2008) is an assistant professor of biology and biological engineering at California Institute of Technology (Caltech).

**Alex Grant** (Stanford Bio-X Bowes Fellow 2010) is currently working as an engineer at the startup Ceribell, Inc.

**Adam Grossman** (Stanford Bio-X Bowes Fellow 2004) is co-founder and metainformation scientist at Praedicat, Inc., a company transforming the underwriting and risk management of liability insurance by using big data approaches to model and understand the science that drives products liability.

**Lisa Gunaydin** (Stanford Bio-X Bowes Fellow 2008) is an assistant professor in the department of psychiatry and the Institute for Neurodegenerative Diseases at University of California-San Francisco.

**Jennifer Hicks** (Stanford Bio-X Bowes Fellow 2007) serves as the associate director of the National Center for Simulation in Rehabilitation Research, an NIH-funded center at Stanford that brings state-of-the-art engineering tools to rehabilitation scientists. She oversees the center's Visiting Scholar Program, Pilot Projects, workshops, webinars, and online resources, and is the research and development manager for the OpenSim software platform.

**Tyler Hillman** (Stanford Bio-X Bowes Fellow 2008) is a gynecologic oncology fellow at the University of Texas MD Anderson Cancer Center.

**Jacob Hughey** (Stanford Bio-X Bowes Fellow 2007) is an instructor of biomedical informatics at Vanderbilt University School of Medicine.

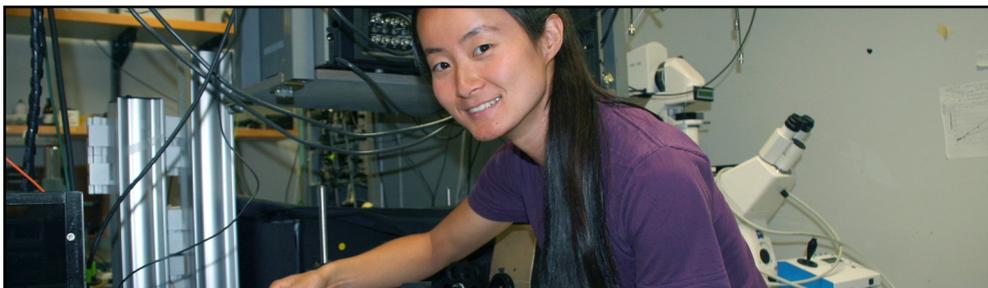
**Rachel Kalmar** (Stanford Bio-X Bowes Fellow 2005) is a data scientist and leader in the wearables space. She is currently doing data freelance work while working on a stealth project. Rachel is also one of the founders of Dr. Brainlove, a science education non-profit and giant climbable brain jungle gym. She is an alumna of Singularity University, Rock Health, and Misfit Wearables.

**Mihalis Kariolis** (Stanford Bio-X Bowes Fellow 2008) is an antibody and protein engineering scientist at Denali Therapeutics.

**Katy Keenan** (Stanford Bio-X Bowes Fellow 2006) finished her NRC postdoctoral scholar position and is now a staff engineer at the National Institute of Standards and Technology (NIST) in Boulder, Colorado.

**Jongmin Kim** (Bruce and Elizabeth Dunlevie Fellow, Stanford Bio-X SIGF 2011) is a postdoctoral fellow in Professor Robert Kingston's lab at the Massachusetts General Hospital.

**Samuel Kim** (Stanford Bio-X Bowes Fellow 2004) is a postdoctoral researcher in Professor Adam Abate's group at the University of California-San Francisco.



**Daniel Kimmel** (Affymetrix Bio-X Fellow, Stanford Bio-X SIGF 2006) is a resident in psychiatry and Leon Levy Neuroscience Fellow at Columbia University where he is completing his clinical training while continuing his research on the neural basis of decision-making.

**Ryosuke Kita** (Stanford Bio-X Bowes Fellow 2013) is a medical student at Stanford University.

**Gaurav Krishnamurthy** (Stanford Bio-X Medtronic Fellow 2008) is an R&D manager at Medtronic Neurovascular.

**Thomas Lampo** (Stanford Interdisciplinary Graduate Fellow (Anonymous Donor), Stanford Bio-X SIGF 2013) is a data scientist at Uber.

**Frances Lau** (Stanford Bio-X Bowes Fellow 2007) is an engineer at Apple Inc.

**Paul Lebel** (Stanford Interdisciplinary Graduate Fellow (Anonymous Donor), Stanford Bio-X SIGF 2011) is a senior optical engineer at Berkeley Lights.

**Andrew Lee** (Stanford Bio-X Bowes Fellow 2010) is a third-year medical student at Stanford University and is working on Stem Cell Theranostics, a biotech spin out startup (currently 15 employees).

**Soah Lee** (Stanford Bio-X Bowes Fellow 2012) is a postdoctoral student in Dr. Sean Wu's lab, working on bioprinting 3D cardiac tissue.

**Stephen Lee** (Stanford Bio-X Bowes Fellow 2005) works for Discovery Networks based in London.

**Austin Lee-Richerson** (Stanford Bio-X Bowes Fellow 2011) is currently on LOA from the Boston Consulting Group while he pursues an MBA from the Kellogg School of Management at Northwestern University.

**Liang Liang** (Lubert Stryer Interdisciplinary Graduate Fellow, Stanford Bio-X SIGF 2009) is in Chinfai Chen's and Mark Andermann's labs at Boston Children's Hospital as a postdoctoral fellow.

**Prasheel Lillaney** (Stanford Bio-X Bowes Fellow 2005) is a manager in regulatory affairs at Jazz Pharmaceuticals.

**Andreas Loening** (Stanford Bio-X Bowes Fellow 2004) is an assistant professor in the department of radiology at Stanford University.

**Mark D. Longo** (Morgridge Family SIGF Fellow, Stanford Bio-X SIGF 2011) is working as a data scientist at Quid, Inc., an analytics start-up in San Francisco. On the side, he is working on publishing his thesis research and developing a combinatorial approach to genotype-phenotype mapping (looking at correlations between sets of genes and phenotypes versus current approaches which focus on one gene at a time).

**Bertrand Lui** (Lubert Stryer Interdisciplinary Graduate Fellow, Stanford Bio-X SIGF 2006) is a member of the SMB Revenue Innovations team at Google.

**Li Ma** (Larry Yung Fellow, Stanford Bio-X SIGF 2009) is an assistant professor in the department of statistical science at Duke University.

**Amanda Malone** (Stanford Bio-X Bowes Fellow 2004) is the CSO for Eupraxia Pharmaceuticals Inc.

**Ian Marshall** (Stanford Bio-X Bowes Fellow 2008) is a postdoctoral fellow in the Center for Geomicrobiology at Aarhus University in Denmark.

**Joanna Mattis** (Stanford Bio-X Bowes Fellow 2010) is in her first year of a neurology residency at the University of Pennsylvania.

**Cory McLean** (Stanford Bio-X Bowes Fellow 2007) is a software engineer at Verily Life Sciences.

**Christine McLeavey** (Stanford Bio-X Bowes Fellow 2008) is a pianist and co-founder of Ensemble SF.

**Leslie Meltzer** (Stanford Bio-X Bowes Fellow 2004) is vice president and head of medical affairs at Keryx Biopharmaceuticals in Boston, MA.

**Samir Menon** (Colella Family Fellow, Stanford Bio-X SIGF 2011) is in the process of identifying problems to solve.

**Denitsa Milanova** (Stanford Bio-X Medtronic Fellow 2011) is a postdoctoral fellow in the department of genetics at Harvard Medical School and at the Wyss Institute for Biologically Inspired Engineering. Her PI is Professor George Church.

**Murtaza Mogri** (Stanford Bio-X Bowes Fellow 2006) works for Medtronic Diabetes as senior product manager on their closed-loop insulin pump and glucose sensor system for diabetes.

**Kate Montgomery** (Stanford Bio-X Bowes Fellow 2009 and William and Lynda Steere Fellow, Stanford Bio-X SIGF 2012) is the lead R&D scientist at Zebra Medical Technologies. The company's technology, minimally invasive sarcomere imaging, was supported as an academic project by a Bio-X grant when it was early stage and high-risk, and is now being commercialized to improve human health.

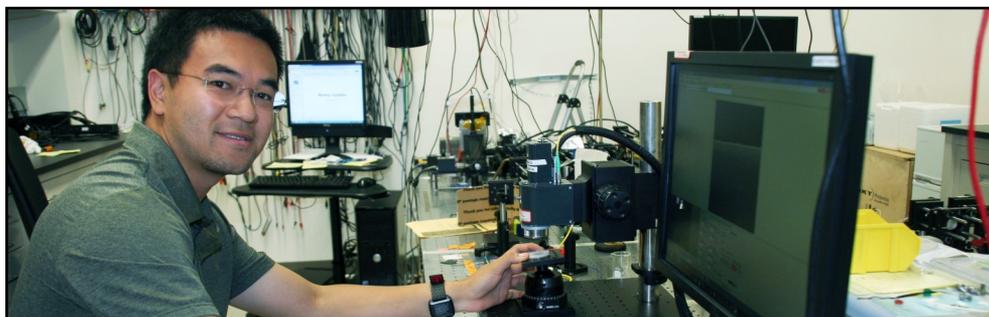
**Sergio Moreno** (Stanford Bio-X Bowes Fellow 2004) is working in Michael Levitt's lab while he is in the process of interviewing.

**David Myung** (Stanford Bio-X Bowes Fellow 2005) joined the Stanford Ophthalmology faculty at the Palo Alto VA hospital in July 2015. The technology he co-developed as a Bio-X Fellow was licensed out of Stanford in 2008 and is the focus of a venture-backed orthopaedics-focused biomaterials company he co-founded that is currently in pre-clinical development. During his ophthalmology residency, he led the invention of a smartphone-based eye imaging system (Paxos Scope™) that was licensed to DigiSight Technologies and is now FDA registered as a 510(k) Class II ophthalmic camera, and is being used both in the US and abroad, most notably in collaboration with the Himalayan Cataract Project in rural Nepal.

**Daniel Newburger** (Morgridge Family Fellow, Stanford Bio-X SIGF 2011) is a software engineer at Verily Life Sciences (formerly Google Life Sciences).

**Wendy Ni** (Bruce and Elizabeth Dunlevie Fellow, Stanford Bio-X SIGF 2012) is a postdoctoral student in the lab of Dr. Gregory Zaharchuk at Stanford University.

**William Noderer** (Stanford Bio-X Bowes Fellow 2010) is working for the Boston Consulting Group as a consultant.



**James Notwell** (Affymetrix Bio-X Fellow, Stanford Bio-X SIGF 2013) is a computational scientist at Circuit Therapeutics, Inc.

**Peter Olcott** (Presidential Fellow, Stanford Bio-X SIGF 2009) is working at Reflexion Medical developing the next generation of radiotherapy devices for the treatment of cancer.

**Patricia Ortiz-Tello** (Stanford Bio-X Bowes and Stanford Bio-X Amgen Fellow 2011) is currently making a decision on her next professional endeavor.

**Shawn Ouyang** (Affymetrix Bio-X Fellow, Stanford Bio-X SIGF 2009) is a principal scientist at the biotech startup SUMO Biosciences and a Principal Investigator of a NIH SBIR Phase II grant.

**William Parsons** (Presidential Fellow, Stanford Bio-X SIGF 2010) is a postdoctoral fellow at the Scripps Research Institute, working in the lab of Benjamin Cravatt.

**Bethany Percha** (Morgridge Family SIGF Fellow, Stanford Bio-X SIGF 2013) will be joining the Mt. Sinai School of Medicine this fall as an assistant professor and part of the founding team of a new applied research center in Silicon Valley.

**Steven Petsche** (Stanford Bio-X Bowes Fellow 2011) works as a Development Engineer for MSC Software in Newport Beach.

**Guillem Pratx** (Stanford Bio-X Bowes Fellow 2006) is an assistant professor in radiation oncology at Stanford University. His research focus is on biomedical imaging for radiotherapy.

**Jeffrey Quinn** (Stanford Bio-X Bowes Fellow 2012) is a postdoctoral fellowship at University of California-San Francisco / HHMI in Jonathan Weissman's lab.

**Manuel Rausch** (Affymetrix Bio-X Fellow, Stanford Bio-X SIGF 2012) will be an assistant professor in the department of aerospace engineering & engineering mechanics at University of Texas-Austin in 2017.

**Andreas Rauschecker** (Stanford Bio-X Bowes Fellow 2008) is in the residency program in radiology at the University of Pennsylvania.

**Sanaz Saatchi** (Stanford Bio-X Amgen Fellow 2009) is an R&D engineering manager in the CardioVascular group at Medtronic. After leading a global research effort and opportunity assessment to identify new areas for cardiovascular medical device innovation, she has been the technical lead on a cross-functional team driving these product concepts towards commercialization. Sanaz also participated in Medtronic's Global Innovation Fellowship program which focuses on expanding healthcare to underserved populations. Her project focused on improving diabetes awareness and detection in South Africa.

**Joel Sadler** (Stanford Bio-X Bowes Fellow 2012) has cofounded a creative computing startup Piper Inc to inspire kids to make electronic devices. After graduating as a Bio-X fellow this year, he shipped the Piper Computer Kit to thousands of kids around the world, who have now built their own computer through a game-based learning platform. Recent press announced Joel raising \$2.1M in seed funding to support Piper's vision to "spark every child's inner inventor" in education. Joel's company was inspired by his Bio-X research and PhD thesis on the "Anatomy of Creative Computing."

**Jayodita Sanghvi** (Stanford Bio-X Bowes Fellow 2007) is a data science manager for Grand Rounds, a health start-up in San Francisco.

**Alia Schoen** (Stanford Bio-X Bowes Fellow 2009) works at Bloom Energy, a stationary fuel cell manufacturer whose vision is to make clean, reliable energy affordable for everyone in the world. Dr. Schoen is dedicated to the application of interdisciplinary scientific understanding and communication to societal challenges. She is leveraging both her interdisciplinary education as well as her time in the California State Assembly as a CCST Science Policy Fellow in her current position as a Senior Policy Associate at Bloom.

**Mark Sellmyer** (Stanford Bio-X Bowes Fellow 2008) is in his fourth year of radiology residency (PGY-5) in a research track at the University of Pennsylvania. His research is on small molecule optical and nuclear tools for disease diagnosis and treatment and he was recently awarded a RSNA Resident Research Scholar Grant.

**Pankaj Sharma** (Stanford Bio-X Bowes Fellow 2012) is a senior design engineer at Stryker Corporation.

**Joo Yong Sim** (Stanford Bio-X Bowes Fellow 2010) is working in the biomedical IT convergence research department of the Electronics and Telecommunications Research Institute, a Korean national laboratory.

**Steven Sloan** (Stanford Bio-X Bowes Fellow 2014) has returned to clinics to finish the last two years of medical school at Stanford as part of the MSTP program.

**Ruth Sommese** (Paul Berg Interdisciplinary Biomedical Graduate Fellow, Stanford Bio-X SIGF 2011) is a postdoctoral student with Sivaraj Sivaramakrishnan at the University of Minnesota.

**Min-Sun Son** (Stanford Bio-X Bowes Fellow 2007) is working for Exponent, Inc., an engineering and scientific consulting company.

**Ryan Squire** (Stanford Bio-X Bowes Fellow 2010) is a product and data scientist at SafeGraph.

**Pakpoom Subsoontorn** (Stanford Bio-X Bowes Fellow 2008) is a lecturer in the biochemistry department, faculty of medical science, at the Naresuan University, Thailand.

**Jong Min Sung** (Stanford Bio-X Bowes Fellow 2009) has a postdoctoral position with Ron Vale's lab at University of California-San Francisco.

**Jiongyi Tan** (Enlight Foundation Interdisciplinary Graduate Fellow, Stanford Bio-X SIGF 2014) will be defending his thesis in Fall 2016, after which, he will begin a postdoctoral position with Dr. Dyche Mullins at University of California-San Francisco.

**Grace Tang** (Stanford Bio-X Bowes Fellow 2008) is a senior security data scientist at LinkedIn.

**Noureddine Tayebi** (Stanford Bio-X Bowes Fellow 2009) is a senior research scientist and team lead at Intel Research Labs, Intel Inc.

**Rebecca Taylor** (Stanford Bio-X Bowes Fellow 2007) is an assistant professor of mechanical at Carnegie Mellon University.

**Carolina Tropini** (Bruce and Elizabeth Dunlevie Fellow, Stanford Bio-X SIGF 2011) has a postdoctoral position with Justin Sonnenburg at Stanford funded by the McDonnell postdoctoral fellowship on complex systems.

**Jules VanDersarl** (Stanford Bio-X Bowes Fellow 2005) works at Meso Scale Diagnostics as an engineering scientist.

**Graham Walmsley** (Stanford Bio-X Fellow 2015) is an investment professional at Versant Ventures responsible for deal sourcing, due diligence, and portfolio company support/analysis.

**Aaron Wang** (Stanford Bio-X Bowes Fellow 2006) is a fellow at University of California-San Diego in ophthalmology, subspecializing in cornea.

**Christine Wang** (Bruce and Elizabeth Dunlevie Fellow, Stanford Bio-X SIGF 2014) is currently working in consulting.

**Jack Wang** (Stanford Bio-X Bowes Fellow 2011) begins a neurology residency at University of California-Los Angeles in fall 2015.

**Larry Wang** (Stanford Bio-X Bowes Fellow 2007) is a launch program manager at Pebble Technology.

**Yen-Hsiang Wang** (Stanford Bio-X Bowes Fellow 2009) is an associate at McKinsey & Company.

**Aaron Wenger** (Morgridge Family SIGF Fellow, Stanford Bio-X SIGF 2010) is a bioinformatics research scientist at Pacific Biosciences, developing applications of long-read genome sequencing.

**Kitchener Wilson** (Stanford Bio-X Bowes Fellow 2007) is an instructor in pathology at Stanford with a specialization in molecular genetic pathology. He plans to one day direct a clinical genome sequencing laboratory while continuing his basic science research on human iPS cells and DNA/RNA biology as an NIH-funded Investigator. iPS cells present an opportunity to rapidly phenotype the genome and have revolutionized biomedicine by giving scientists a relatively quick and cheap method for discovering patient-specific therapies. Kitch's ultimate goal is therefore "Precision" Medicine that takes advantage of these 21st century technologies: "-omic" data and knowledge gained from patient-specific and disease-specific iPS cells.

**Brian Wilt** (Stanford Bio-X Bowes Fellow 2008) is a director and the head of data science and analytics for Jawbone in San Francisco.

**Remus Wong** (Stanford Bio-X Bowes Fellow 2010) is taking time off and considering his next professional opportunity.

**Angela Wu** (Stanford Bio-X Bowes Fellow 2006) is a founding team member of Agenovir, an anti-viral therapeutics start-up. In addition to her role as Scientist at Agenovir, she also contributes to the business development and fund-raising efforts of the company. She is an assistant professor in the life science division at Hong Kong University of Science and Technology (HKUST). She is studying cellular heterogeneity in biological systems and disease, and is developing novel technologies for biological and translational research.

**Nan Xiao** (Stanford Bio-X Bowes Fellow 2007) works for Heartflow, Inc. in Redwood City as a computational scientist.

**Yufeng Yang** (Stanford Bio-X Bowes Fellow 2005) is a professor/investigator in the Institute of Life Sciences at Fuzhou University.

**Peggy Yao** (Stanford Bio-X Bowes Fellow 2006) is a research scientist at Facebook working on machine learning.

**Sara Z. Yao** (Stanford Bio-X Bowes Fellow 2004) founded DeviceDebut, LLC after exploring medical device R&D for over 5 years. DeviceDebut helps US medical device manufacturers register with CFDA, enter the Chinese market, and receive funding from the Chinese investors.

**Michael Yip** (Stanford Bio-X Bowes Fellow 2013) is an assistant professor in the department of electrical & computer engineering at University of California-San Diego.

**Bo Zhang** (Mona M. Burgess Fellow, Stanford Bio-X SIGF 2013) is the director of product development at Nirmidas Biotech Inc., a start-up company founded by his advisor, currently in Stanford StartX incubator.

**Xiaoxue Zhou** (Larry Yung Fellow, Stanford Bio-X SIGF 2010) is a postdoctoral student in Julie Theriot's lab.

# Stanford Bio-X Postdocs

**The Stanford Bio-X Postdoctoral Fellowships are made possible through the support of our industry contacts. To date, eight students have been postdoctoral fellows, and those who ended their appointments have transitioned to successful careers.**

**Tiffany Chung** (Stanford Bio-X Postdoctoral Fellow 2005) is a chemist for the Hong Kong government.

**Anna Geraghty** (Stanford Bio-X Genentech Postdoctoral Fellow 2015) is currently a Bio-X postdoctoral fellow in the neurology & neurological sciences department. With the guidance of Michelle Monje-Deisseroth (Neurology), she is working on her research entitled, “*Neurotrophin regulation of adaptive gliogenesis and remyelination post pediatric chemotherapy.*”

**Subhaneil Lahiri** (Stanford Bio-X Genentech Postdoctoral Fellow 2013) is a research associate in Surya Ganguli’s group in the applied physics department at Stanford University.

**Yu-Shan Lin** (Stanford Bio-X Postdoctoral Fellow 2009) is an assistant professor of chemistry at Tufts University.

**Elena Rykhlevskaia** (Stanford Bio-X Lubert Stryer Interdisciplinary Postdoctoral Fellow 2008) is an analytics manager at comScore, Inc.

**Shilpa Sambashivan** (Stanford Bio-X Genentech Postdoctoral Fellow 2008) is a senior scientist at Amgen, Inc.

**Sergey Solomatin** (Stanford Bio-X Postdoctoral Fellow 2005) is a scientist at Impossible Foods, a recent start-up founded by Stanford biochemistry professor, Pat Brown. The company’s goal is to revolutionize the food industry and to roll back the adverse effects that factory farming of animals has on the environment and on us.

**Tristan Ursell** (Stanford Bio-X Genentech Postdoctoral Fellow 2009) is an assistant professor of physics at the University of Oregon working on microbial community biophysics.



# Stanford Bio-X PhD Fellowships 2016



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