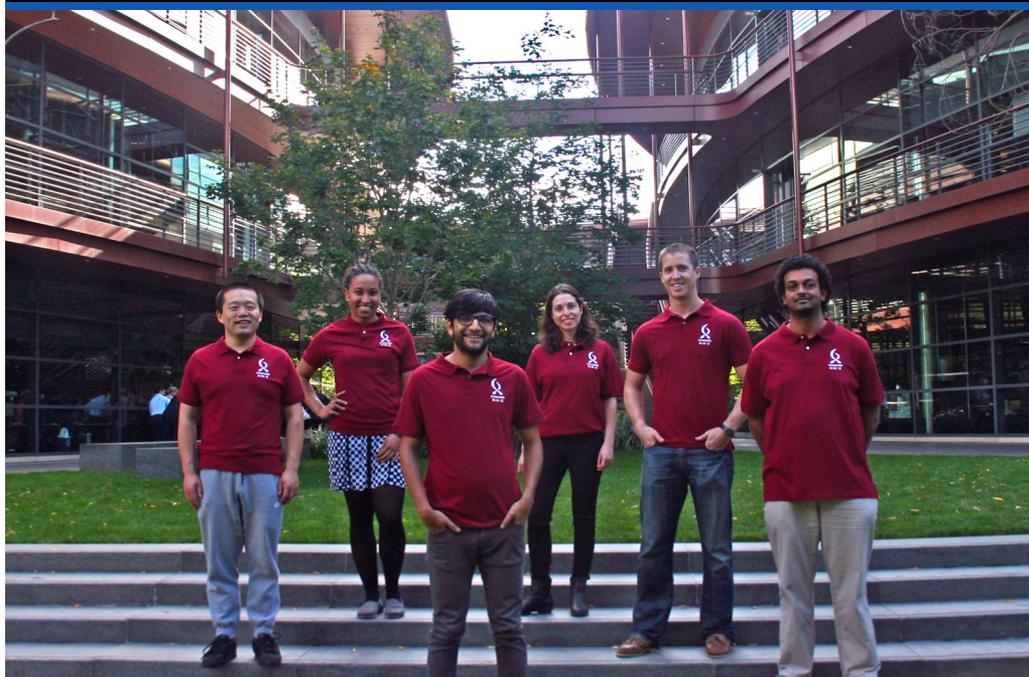




TRAVEL AWARD PROGRAM 2006-2016



Qiyuan Tian
(Electrical
Engineering)

Uchekwuka
Monu (Electrical
Engineering)

Akshay
Chaudhari
(Bioengineering)

Orly Liba
(Electrical
Engineering)

Matthew Titchena
(Mechanical
Engineering)

Abhay
Ramachandra
(Pediatrics)

STANFORD BIO-X TRAVEL AWARD PROGRAM



Over a decade of supporting students...

The Stanford Bio-X Travel Award Program was created in order to help promote the development of public speaking skills amongst our students, as well as to provide them with the invaluable opportunity to travel and network with like-minded peers and to learn about new ideas that could potentially and positively affect their research.

Beginning in 2006, Bio-X has been providing \$500 in travel subsidies to graduate students working in Bio-X affiliated labs, enabling them to give oral presentations of their work at an upcoming conference. To date, we have provided over 420 travel subsidies to Stanford graduate students. These students come from many disciplines around campus; they represent 41 different departments and the research of the labs of 142 Stanford faculty members. The students have traveled to 73 foreign cities in 33 different countries, city-states, or commonwealths, and 32 different states in the United States.

We would also like to acknowledge Mr. Matthew Frank, whose generous donation this year supported students' and postdocs' travel to disseminate their exciting work.

ADDITIONAL AWARDS CONFERRED ON OUR TRAVEL AWARDEES DUE TO THEIR PRESENTATIONS

In addition to the Stanford Bio-X travel award, a number of our student awardees have received special accolades for their research and their presentations. The full list of awards, publications, and other accomplishments related to their oral presentations may be found online at: <https://biox.stanford.edu/research/travel-awards>

Some highlights of our student travel awardees' work:



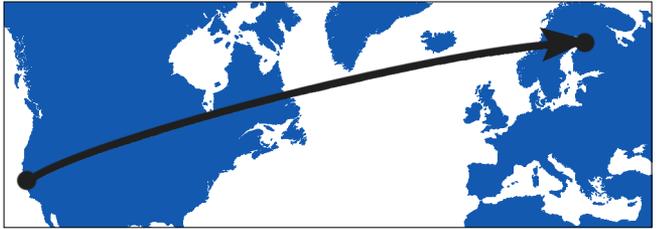
Abhay Bangalore Ramachandra traveled to National Harbor, Maryland for the 2016 Summer Biomechanics, Bioengineering and Biotransport Conference to present his talk, "Virtual evaluation of surgical revascularization techniques in coronary artery bypass surgery." Abhay was a *finalist at the student paper competition, garnering the third place prize.*



Abhay Bangalore Ramachandra traveled to National Harbor, Maryland for the 2016 Summer Biomechanics, Bioengineering and Biotransport Conference



Akshay Chaudhari traveled to Oulu, Finland for the 9th Annual International Workshop on Osteoarthritis Imaging to give his talk, "T2 relaxometry of short T2 tissues with high SNR efficiency." Akshay won the *Best Young Investigator* award at this event.



Akshay Chaudhari traveled to Oulu, Finland for the 9th Annual International Workshop on Osteoarthritis Imaging



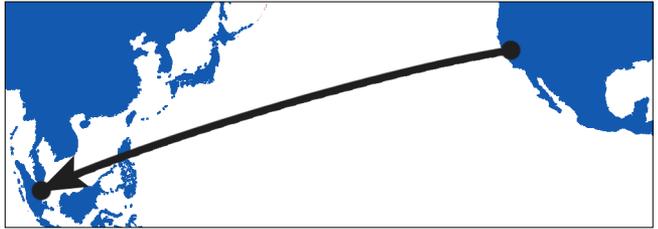
Orly Liba traveled to New York, New York for the World Molecular Imaging Conference 2016 to give her talks, "Spectral analysis for molecular imaging with optical coherence tomography (OCT) *in vivo*" and "Characterizing nanoparticle microbiodistribution using adaptive darkfield hyperspectral microscopy." Orly received two awards from the conference organizers: a *Women in Molecular Imaging Scholar* award and a *Student Travel Stipend* award.



Orly Liba traveled to New York, New York for the World Molecular Imaging Conference 2016



Uchechukwuka Monu traveled to the Republic of Singapore for the 24th Annual Meeting of the International Society for Magnetic Resonance in Medicine to present her talk, "A method to quantitatively compare bone and cartilage changes post knee injury: initial results," which was awarded the *Magna Cum Laude Merit Award*, granted to the top 15% of submitted abstracts in the same category.



Uchechukwuka Monu traveled to the Republic of Singapore for the 24th Annual Meeting of the International Society for Magnetic Resonance in Medicine



Qiyuan Tian traveled to the Republic of Singapore for the 24th Annual Meeting of the International Society for Magnetic Resonance in Medicine to present his talk, "Diffusion MRI tractography for improved MRI-guided focused ultrasound thalamotomy targeting for essential tremor." Qiyuan received the *Summa Cum Laude Merit Award* (top 3% of submitted abstracts at the meeting).



Qiyuan Tian traveled to the Republic of Singapore for the 24th Annual Meeting of the International Society for Magnetic Resonance in Medicine



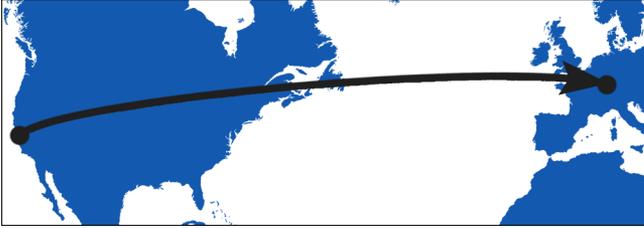
Matthew Titchenal traveled to Colorado Springs, Colorado for the American Orthopaedic Society for Sports Medicine 2016 Annual Meeting to give his talk, "Early changes in the knee joint center of rotation during walking following anterior cruciate ligament reconstruction correlate with later changes in patient reported outcomes." His paper was awarded the *O'Donoghue Sports Injury Award* which is given to the best overall paper which deals with clinical based research or human *in vivo* research.



Matthew Titchenal traveled to Colorado Springs, Colorado for the American Orthopaedic Society for Sports Medicine 2016 Annual Meeting



Chen-Ming Chang traveled to Strasbourg, France for the 2016 IEEE Nuclear Science Symposium / Medical Imaging Conference. His talk, “Time-over-threshold for pulse shape discrimination in a time-of-flight/depth-of-interaction phoswich PET detector,” was awarded the *best oral presentation*.



Chen-Ming Chang traveled to Strasbourg, France for the 2016 IEEE Nuclear Science Symposium / Medical Imaging Conference

Stanford Bio-X granted 46 travel awards in 2016:



ZOE ASSAF

Genetics

Professor Dmitri Petrov

“Mutational patterns in *Drosophila melanogaster*” (*The Allied Genetics Conference 2016*)



ABHAY BANGALORE RAMACHANDRA

Institute for Computational & Mathematical Engineering

Professor Alison Marsden

“Virtual evaluation of surgical revascularization techniques in coronary artery bypass surgery” (*2016 Summer Biomechanics, Bioengineering and Biotransport Conference*)



SALIL BHATE

Bioengineering

Professors Garry Nolan and Stanley Qi

“Automatic identification of niches and immune interactions responsible for positive clinical response using multiparameter imaging and deep neural networks” (*2nd CRI-CIMT-EATI-AACR International Cancer Immunotherapy Conference*)

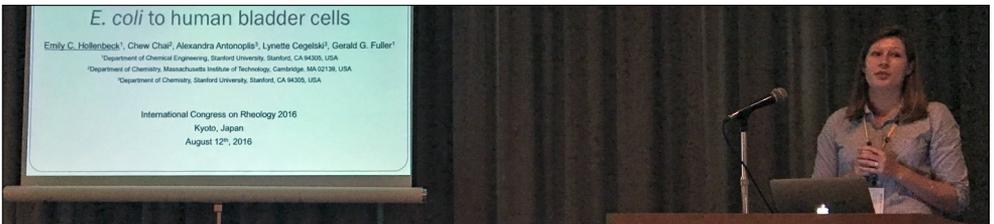


LILY BLAIR

Biology

Professor Daniel Fisher

“Within and between individual convergence in the human antibody repertoire in response to influenza vaccines and dengue infection” (*Deep Sequencing in Infectious Diseases Workshop 2016*)



Emily Hollenbeck in Kyoto, Japan for The XVIIth International Congress on Rheology

This conference offered the chance to hear talks from scientists whose work I've only read about, discuss topics with like-minded fans of epigenetics and metabolism, and network with potential post-doc advisors. In addition, by presenting my unpublished work, which is currently under revision, I was able to get constructive feedback as to how to bring my research to a published close.

— Nora Yucel on her 2016 travel experience



CHEN-MING CHANG

**Applied Physics and Radiology
Professor Craig Levin**

"Time-over-threshold for pulse shape discrimination in a time-of-flight/depth-of-interaction phoswich PET detector" (2016 IEEE Nuclear Science Symposium / Medical Imaging Conference)



AKSHAY CHAUDHARI

**Bioengineering
Professor Brian Hargreaves**

"T2 relaxometry of short T2 tissues with high SNR efficiency" (9th Annual International Workshop on Osteoarthritis Imaging)



FEIYU CHEN

**Electrical Engineering
Professors John Pauly and Shreyas Vasanawala**

"Auto-calibrating wave-CS for motion-robust accelerated MRI" (ISMRM Workshop on Data Sampling & Image Reconstruction 2016)



BOGDAN CONRAD

**Orthopaedic Surgery
Professor Fan Yang**

"Microribbon-based hydrogels induced robust osteogenesis of mesenchymal stem cells and bone regeneration with enhanced mechanical strength" (2016 Orthopaedic Research Society Annual Meeting)



Bogdan Conrad in Orlando, Florida for the 2016 Orthopaedic Research Society Annual Meeting)



Vignesh Ganapathi-Subramanian in Berlin, Germany for the International Geometry Summit 2016)



ALEX DIEZMANN

Chemistry

Professor W.E. Moerner

“Correcting nanoscale aberrations over the field of view in three-dimensional localization microscopy” (*Picoquant’s 22nd International Workshop on Single Molecule Spectroscopy and Super-resolution Microscopy in the Life Sciences*)



KAREN DUBBIN

Materials Science & Engineering

Professor Sarah Heilshorn

“Self-assembling bio-inks for 3D printing of cellular constructs” (*2016 World Biomaterials Congress*)



EMILY EBEL

Biology

Professor Dmitri Petrov

“Malaria parasites drive adaptation in mammalian genomes” (*Society for Molecular Biology and Evolution Conference 2016*)

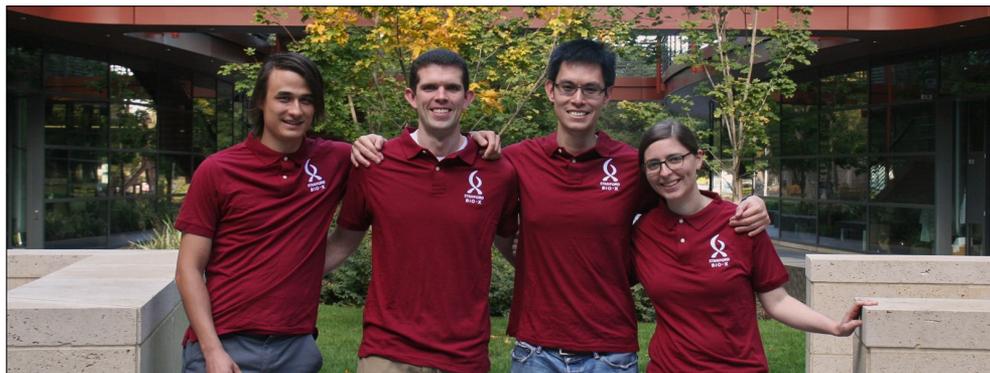


MICHAEL FANTON

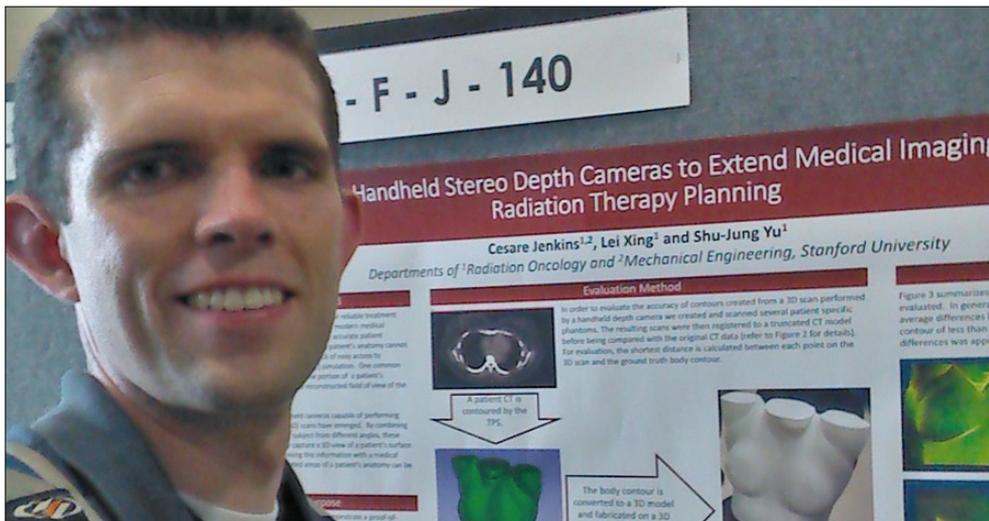
Mechanical Engineering

Professor David Camarillo

“Investigation of football head impacts through development of a dynamic model” (*Biomedical Engineering Society 2016 Annual Meeting*)



2015 Travel Awardees Matthew Bieniose, Cesare Jenkins, Chen-Ming Chang, and Kristen Lurie



Cesare Jenkins in Washington, D.C. for the 2016 American Association of Physics in Medicine Annual Meeting



VIGNESH GANAPATHI-SUBRAMANIAN

Electrical Engineering
Professor Leonidas Guibas

“Stable region correspondences between non-isometric shapes” (*International Geometry Summit 2016*)



AARON GOODMAN

Biology
Professor Marcus Feldman

“Stochastically varying environments promote evolution of modularity and hierarchy in simulated bacterial metabolic networks” (*Society for Molecular Biology and Evolution Conference 2016*)



EMILY HOLLENBECK

Chemical Engineering
Professors Gerald Fuller and Lynette Cegelski

“Contribution of extracellular proteinaceous fibers to the adhesion of uropathogenic *Escherichia coli* to bladder cells” (*The XVIIth International Congress on Rheology*)



CESARE JENKINS
Mechanical Engineering

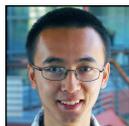
Professor Lei Xing
 “Automation of high dose rate brachytherapy quality assurance: development of a radioluminescent detection system for simultaneous detection of activity, timing, and positioning” (*2016 American Association of Physics in Medicine Annual Meeting*)

My interactions with scientists at the frontier of this interdisciplinary field will provide an excellent foundation for the future research directions in my PhD lab, as well as my own new directions as I embark on a postdoc position this fall.

— Andrew Klein on his 2016 travel experience

Presenting at one of the Gordon Research Seminars, made possible by a Bio-X Travel Award, has been one of the most rewarding experiences of my graduate career. I was exposed to fantastic and creative science being conducted all across the world. This meeting gave me an opportunity to interact, ask questions, and receive mentorship from several of my scientific heroes face-to-face. With respect to my own research, I received invaluable feedback, and have come home to the lab invigorated, with a plethora of fresh ideas for new ways to approach both my data and the scientific questions posed by the field.

— Lucien Weiss on his 2016 travel experience



XIAOFAN JIN

Bioengineering
Professor Ingmar Riedel-Kruse

“Patterned biofilms for synthetic microbial consortia” (*Biofilms 7*)



ANDREW KLEIN

Chemical Engineering
Professor Elizabeth Sattely

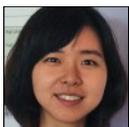
“Indole antibiotic biosynthesis in edible plants: from genomes to bioactive molecules” (*International Society for Molecular Plant-Microbe Interactions Congress 2016*)



MAURICE LEE

Chemistry
Professor W.E. Moerner

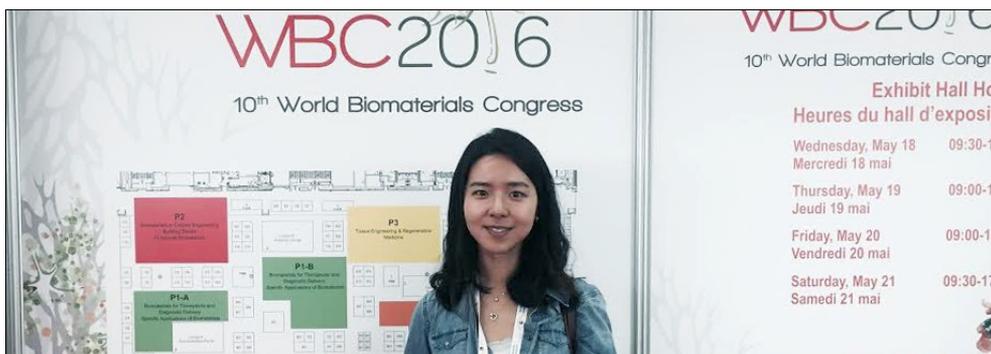
“3D single-molecule super-resolution fluorescence microscopy with the corkscrew point spread function” (*2016 Biophysical Society Annual Meeting*)



SOAH LEE

Materials Science & Engineering
Professor Fan Yang

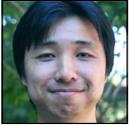
“Engineering aligned microribbon-based hydrogels to guide 3D muscle tissue regeneration” (*2016 World Biomaterials Congress*)



Soah Lee in Montréal, Canada for the 2016 World Biomaterials Congress

My presentation on transglutaminase activation was well-received, and it opened the door to several collaborations that will allow me and my lab to expand and strengthen our research program.

— Brad Palanski on his 2016 travel experience



JACKSON LIANG
Molecular & Cellular Physiology
Professor Lucy O'Brien

“An intercellular E-cadherin-EGFR relay maintains organ size during renewal by coupling cell division and death” (*The Allied Genetics Conference 2016*)



ORLY LIBA
Structural Biology
Professor Adam de la Zerda

“Spectral analysis for molecular imaging with optical coherence tomography (OCT) *in vivo*” and “Characterizing nanoparticle microbiodistribution using adaptive darkfield hyperspectral microscopy” (*World Molecular Imaging Conference 2016*)



EDEN MALONEY
Surgery
Professor Olivia Martinez

“Integrative, multi-cohort analysis of Epstein-Barr Virus (EBV)-positive and negative tumor samples to identify gene-signatures associated with EBV oncogenesis” (*26th International Congress of The Transplantation Society*)



TREVOR MARTIN
Biology
Professor Hunter Fraser

“Dynamic genetic control of gene expression and DNA methylation in human aging” (*Society for Molecular Biology and Evolution Conference 2016*)

Translating 3D Printing to Medicine

Rapid prototyping allows users to print complex 3D architectures making it an ideal venue for the manufacture of tissue structures

- 3D printing of thermoplastics and metals has more than tripled since 2009
- 3D printing of bio-inks with encapsulated cells is still an emerging technology
- Ongoing challenges with printed tissue constructs include cell viability and cell homogeneity
- Can novel bio-ink design address these challenges?

adapted from Wohlers State of the Industry report 2013

Year	Address Manufacturing
2009	~1.0
2010	~1.5
2011	~2.5

Karen Dubbin in Montréal, Canada for the 2016 World Biomaterials Congress



Xiaofan Jin in Porto, Portugal for Biofilms 7



SAMIR MENON

Computer Science
Professor Oussama Khatib

"From Bot to Bot: using a Chat Bot to synthesize robot motion" (2016 AAAI Fall Symposium on AI for Human Robot Interaction)



UCHECHUKWUKA MONU

Electrical Engineering
Professors Brian Hargreaves and Garry Gold

"A method to quantitatively compare bone and cartilage changes post knee injury: initial results" (24th Annual Meeting of the International Society for Magnetic Resonance in Medicine)



FRANK MOSS

Chemistry
Professor Steven Boxer

"Atomic recombination in nanosims as a method to measure nanometer-scale intermolecular distances in lipid bilayers" (2016 Biophysical Society Annual Meeting)



BRAD PALANSKI

Chemistry
Professor Chaitan Khosla

"Activation of extracellular TG2" (2016 Gordon Research Conference on Transglutaminases in Human Disease Processes)

My talk was very well received, and I was able to network with a number of student and professor colleagues, receiving valuable feedback and insights into my research. I presented relatively new research, so this is a critical time to receive useful input from other scientists in the field. Additionally, the opportunity to present provided me with valuable experience in creating and practicing a professional talk. Thank you again to Bio-X for being so supportive!

— Zoe Assaf on her 2016 travel experience



Charles (Ruizhongtai) Qi in Las Vegas, Nevada for the Conference on Computer Vision and Pattern Recognition 2016



CHRISTOPHER PROBERT
Genetics and Computer Science
Professor Anshul Kundaje

“DeepNuc: a deep learning model that accurately predicts genome-wide nucleosome positioning from ATAC-seq” (*Genome Informatics 2016*)



CHARLES (RUIZHONGTAI) QI
Electrical Engineering
Professor Leonidas Guibas

“Volumetric and multi-view CNNs for object classification on 3D data” (*Conference on Computer Vision and Pattern Recognition 2016*)



NOELLE RABIAH
Chemical Engineering
Professors Gerald Fuller and Lynette Cegelski

“Protein release from contact lenses monitored by interfacial viscoelasticity” (*The XVIIth International Congress on Rheology*)



KONING SHEN
Biology
Professor Judith Frydman

“Linking the conformational landscape of Huntingtin aggregation species with neuronal toxicity reveals a requirement of the polyQ-flanking regions for proteostasis protection in Huntington’s disease” (*Protein Homeostasis in Health & Disease 2016*)

I’d like to give my honest and sincere appreciation to Bio-X fellowship and travel grants, which supported me throughout my PhD years, and enabled me to learn and grow as a young researcher.

— Soah Lee on her 2016 travel experience

In addition to the talk, the conference also provided opportunities for me to network. I attended a networking event for PhD students and postdocs, where we got to talk to representatives from academia, government, and industry about career perspectives. It helped inform possible career paths and opened up some new options for me (e.g. working as a researcher at the VA).

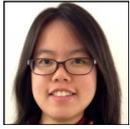
— Lyndia Wu on her 2016 travel experience



XINWEI SHI

Electrical Engineering
Professor Brian Hargreaves

“Accelerated imaging of metallic implants using model-based nonlinear reconstruction” (*ISMRM Workshop on Data Sampling & Image Reconstruction 2016*)



PICHA SHUNHAVANICH

Bioengineering
Professor Norbert Pelc

“Lossless compression of projection data from photon counting detectors” (*SPIE Medical Imaging 2016*)



NASA SINNOTT-ARMSTRONG

Genetics
Professors Christina Curtis and Michael Snyder

“Convergence of dispersed regulatory variants in cancer predisposition” (*2016 Pan-Cancer Analysis of Whole Genomes Face-to-Face*)



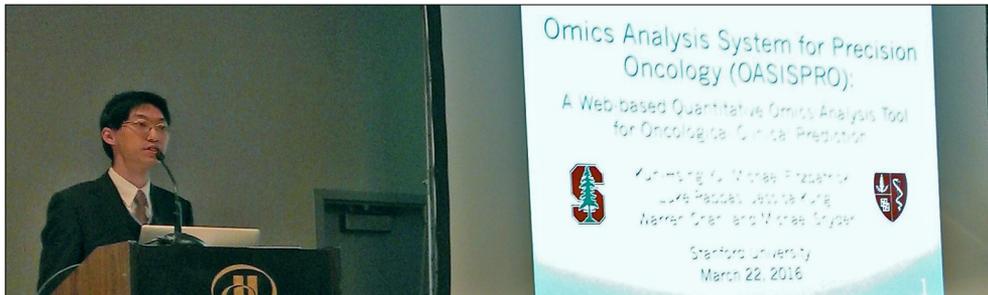
ELLIOTT SORELLE

Structural Biology
Professor Adam de la Zerda

“Contrast-enhanced optical coherence tomography with picomolar sensitivity enables functional 3D imaging of deep tumor microvasculature and lymphatic drainage in live animal models” (*World Molecular Imaging Congress 2016*)



Noelle Rabiah in Kyoto, Japan for The XVIIth International Congress on Rheology



Kun-Hsing Yu in San Francisco for the American Medical Informatics Association 2016 Joint Summits on Translational Science



LI TAO

Electrical Engineering
Professor Craig Levin

“Investigation of electron multiplication effect in optical property modulation-based radiation detection method for PET” (2016 IEEE Nuclear Science Symposium/Medical Imaging Conference)



QIYUAN TIAN

Electrical Engineering
Professor Jennifer McNab

“Diffusion MRI tractography for improved MRI-guided focused ultrasound thalamotomy targeting for essential tremor” (24th Annual Meeting of the International Society for Magnetic Resonance in Medicine)



MATTHEW TITCHENAL

Mechanical Engineering
Professor Constance Chu

“Early changes in the knee joint center of rotation during walking following anterior cruciate ligament reconstruction correlate with later changes in patient reported outcomes” (American Orthopaedic Society for Sports Medicine 2016 Annual Meeting)



SANDEEP VENKATARAM

Biology
Professor Dmitri Petrov

“Fitness pleiotropy and the phenotypic basis of adaptation in experimentally evolving yeast” (The Allied Genetics Conference 2016)



LUCIEN WEISS

Chemistry
Professor W.E. Moerner

“Unraveling the hedgehog signaling pathway by single-molecule tracking” (Gordon Research Seminar 2016)

Although the scientific experience was important, the cultural experience of meeting researchers from around the world and visiting the city of Kyoto was equally as valuable.

— Emily Hollenbeck on her 2016 travel experience



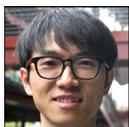
Xinwei Shi in Sedona, Arizona for the ISMRM Workshop on Data Sampling & Image Reconstruction 2016



LYNDIA WU

Bioengineering
Professor David Camarillo

“Bandwidth requirements for wearable head impact sensors” (2016 Summer Biomechanics, Bioengineering and Biotransport Conference)



LI (ERIC) YI

Electrical Engineering
Professor Leonidas Guibas

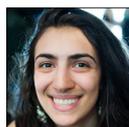
“A scalable active framework for region annotation in 3D shape collections” (SIGGRAPH Asia 2016)



KUN-HSING YU

Biomedical Informatics
Professors Michael Snyder and Russ Altman

“Omics AnalySIs System for PRecision Oncology (OASISPRO): a web-based omics analysis tool for clinical phenotype prediction” (American Medical Informatics Association 2016 Joint Summits on Translational Science)



NORA YUCEL

Genetics
Professor Helen Blau

“Metabolic regulation of muscle stem cell acetylation landscape during regeneration” (2016 Keystone Symposia: Epigenetic and Metabolic Regulation of Aging and Aging-Related Diseases)



DANQING ZHU

Bioengineering
Professor Fan Yang

“Hydrogels with dual gradient of biochemical and mechanical cues induces cartilage tissue formation in 3D that mimics tissue zonal organization” (2016 World Biomaterials Congress)

2006-2015

From 2006 to 2015, Stanford Bio-X gave 330 travel awards to Stanford graduate students from many disciplines across the university. They represent 40 different departments and 128 faculty members.

For the complete list of Stanford Bio-X travel awardees from 2006 to 2015, please visit:
<https://biox.stanford.edu/research/travel-awards>



Professor Carla Shatz
Director of Stanford Bio-X
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Heideh Fattaey, Ph.D.
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hfattaey@stanford.edu

Gabriella Martelino-Herman
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Cici Huber
Stanford Bio-X Program Manager
chuber@stanford.edu

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