Travel Award Program 2006-2016

Matthew Bieniosek (Electrical Engineering)
Cesare Jenkins (Mechanical Engineering)
Chen-Ming Chang (Applied Physics & Radiology)
Kristen Lurie (Electrical Engineering)
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 370 travel subsidies to Stanford graduate students. These students come from many disciplines around campus; they represent 40 different departments and the research of the labs of 128 Stanford faculty members. The students have traveled to 67 foreign cities in 31 different countries or commonwealths, and 32 different states in the United States.

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:

**Stephanie Galanie** traveled to Denver, Colorado for the 249th American Chemical Society National Meeting to present her talk, “Synthetic biochemical production of medicinal protoberberine alkaloids in yeast”, in the Division of Biochemical Technology. She was given the 2015 BIOT Peterson Award for best student oral presentation at the event.

Stephanie Galanie traveled to Denver, Colorado for the 249th American Chemical Society National Meeting
**Kristen Lurie** traveled to New Orleans, Louisiana for the 2015 American Urological Association annual meeting. Her poster, “3D bladder phantom for evaluation of cystoscopic technologies”, was awarded a top 10 abstract distinction while her presentation, “Scanning fiber technology for rapid volumetric optical coherence tomography cystoscopy,” was awarded the best paper.

**Chen-Ming Chang** traveled to Baltimore, Maryland for the 2015 Society of Nuclear Medicine and Molecular Imaging (SNMMI) annual meeting. He gave a talk, “Preliminary PET performance evaluation of an RF-field-penetrable brain-sized PET insert for simultaneous PET/MR imaging,” at the Young Investigator Award session, which was awarded 1st place of Young Investigator Award from the Computer and Instrumentation Council.
Matthew Bieniosek traveled to San Diego, California for the 2015 IEEE Nuclear Science Symposium and Medical Imaging Conference. In addition to his talk, he presented a poster, “Effects of SiPM multiplexing on timing performance,” which was selected as a Premium Student Poster and was a finalist for the best student paper award.

Cesare Jenkins traveled to Anaheim, California for the 57th Annual Meeting and Exhibition of the American Association of Physicists in Medicine. “Automating LINAC QA: Design and testing of an image acquisition and processing system utilizing a combination of radioluminescent phosphors, embedded x-ray markers and optical measurements” was a featured presentation at the conference. As one of the 15 highest scoring abstracts at the conference, it was awarded with a Best in Physics designation.

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Matthew Bieniosek traveled to San Diego, California for the 2015 IEEE Nuclear Science Symposium and Medical Imaging Conference. In addition to his talk, he presented a poster, “Effects of SiPM multiplexing on timing performance,” which was selected as a Premium Student Poster and was a finalist for the best student paper award.

Matthew Bieniosek traveled to San Diego, California for the 2015 IEEE Nuclear Science Symposium and Medical Imaging Conference
Michael Yip traveled to Hong Kong, China for the 2014 Institute of Electrical and Electronics Engineers (IEEE) International Conference on Robotics and Automation where his poster, “Model-less control of a flexible robotic catheter,” merited the Best Paper Award.

Laura Sasportas traveled to St. Louis, Missouri for the 2014 Society for Nuclear Medicine and Molecular Imaging (SNMMI) Annual Meeting. Laura received two awards for her presentation, entitled “Single cell metabolomics in circulating tumor cells”: Young Investigator Award (1st place) from the Nuclear Oncology Council and the Young Professional Committee Abstract Award (2nd place in the category Basic Science).

Outside of the value of presenting my research, I also was able to hear about emerging science still months away from being accessible in scientific journals. All in all, I’ve returned to Stanford with rekindled excitement and I’m eagerly awaiting the opportunity to return to similar conferences next year and present something new.

— Alison Feder on her 2015 travel experience
We received invaluable feedback on our work from clinical and entomological experts who have decades of experience in field research. This [conference] led to possible avenues for international collaboration on our project. Meeting scientists and clinicians who want to start using our technology for their research as soon as possible was thrilling since it tells us we have identified a good potential solution to a very pressing need. The ASTMH experience has given us extra impetus to make faster progress in our work, given the interest in the project and its potential to save lives and affect national policies.

— Haripriya Mukundarajan on her 2013 travel experience
**Mallory Hammock** traveled to San Francisco, California for the 2013 American Institute of Chemical Engineers (AiCHE) National Fall Meeting. She was preselected as one of ten graduate students from a pool of a record number of applicants to participate in a special symposium aimed at recognizing students whose research achievements in bionanotechnology demonstrate a high level of excellence.

**Stephen Fried** traveled to San Francisco, California for the 57th Annual Meeting of the Biophysical Society. Aside from giving his talk, “Vibrational stark effects in the active site of ketosteroid isomerase point to large electric fields driving chemical catalysis,” he co-chaired his session on enzymes.

**Andrew Klein** traveled to Waterville Valley, New Hampshire for the 2013 Gordon Research Seminar in Plant Metabolic Engineering. While there, his interactions with peers and principal investigators led to his being elected to serve as the vice-chair of the next Gordon Research Seminar.

**Patrick Ye** traveled to Shanghai, China for the 13th International Symposium for Therapeutic Ultrasound. He received the Nadine Barrie Smith Student Award for best student presentation at the conference for his work, “Frequency dependence of ultrasound neuromodulation.”
During the conference, I had the opportunity to learn a great deal from the numerous scientific, educational, and poster sessions. I also had the opportunity to visit multiple vendors and learn more about the state of commercial innovation, future job opportunities, and prospects for industry collaboration. In sum, the conference was a great learning experience on many levels.

— Cesare Jenkins on his 2014 travel experience

**Gabriel Billings** traveled to San Francisco, California for the 2012 American Society of Microbiology General Meeting. His submission, “De novo synthesis of the cell wall in *E. coli*: Reversion of L-forms,” was selected as a Young Investigator Talk.

**Katherine Steele** traveled to Grand Rapids, Michigan for the 2012 Gait & Clinical Movement Analysis Society Conference. She received the *Dr. Kevin P. Granata Student Award for most outstanding oral presentation* for her talk, “How do muscle contributions to support and propulsion change during crouch gait?”

**Tiffany Chen** traveled to Baltimore, Maryland for the XXVI Congress of the International Society for Advancement of Cytometry. She received the *President’s Award for Excellence*, an honor bestowed only once annually, for her talk, “Automating signaling and cell cycle analysis in drug discovery: Determining the effect of chemotherapeutics on leukemic cells.”

**Yael Garten** traveled to the Big Island of Hawaii for the 2010 Pacific Symposium on Biocomputing. The manuscript from her talk, “Improving the prediction of pharmacogenes using text-derived gene-drug relationships,” was published in the conference proceedings and indexed by MEDLINE. She was asked to co-chair a workshop the following year, which she did at the 2011 Pacific Symposium on Biocomputing in Hawaii.

**Ben Almquist** traveled to Boston, Massachusetts for the 2010 Materials Research Society Fall Meeting. He received a *Materials Research Society Graduate Student Gold Award* for his talk, “Lateral fusion of lipid membranes to nanoscale functionalized posts.”
Hunter Shain traveled to Oslo, Norway for the 21st Meeting of the European Association of Cancer Research (EACR) in 2010. He was the EACR-21 Presidential Session Award Winner for his talk, “An integrative structural and functional approach to pancreatic cancer gene discovery.”

Adam de la Zerda received the Young Investigator Award at the 2008 World Molecular Imaging Congress for his work, “Photoacoustic molecular imaging using single walled carbon nanotubes in living mice.” The following year, Adam received the Best Poster Presentation Award when he gave a talk at the SPIE (International Society for Optics and Photonics) Photonics West 2009 conference.

In 2015, 37 students received Stanford Bio-X Travel Awards.

**CHEEN EUONG ANG**  
Bioengineering  
Professor Marius Wernig  
“Dynamic expression and chromatin changes during embryonic cortical inhibitory neuron specification and direct conversion of fibroblasts to neurons” (Cold Spring Harbor Laboratory Stem Cell Biology Conference 2015)

**ZOE ASSAF**  
Genetics  
Professor Dmitri Petrov  
“Deep sequencing of natural and laboratory populations of *Drosophila melanogaster* reveals new insights into the spectrum of *de novo* deleterious mutations” (Society for Molecular Biology and Evolution 2015)

**MATTHEW BIENIOSEK**  
Electrical Engineering  
Professor Craig Levin  
“A light sharing, charge multiplexed time-of-flight depth-of-interaction PET detector” (2015 IEEE Medical Imaging Conference)

**AMY CALGARO**  
Chemical Engineering  
Professor Elizabeth Sattely  
“Discovery and engineering of cytochromes P450 from plant secondary metabolism” (American Institute of Chemical Engineers National Conference 2015)

**CHEN-MING CHANG**  
Applied Physics and Radiology  
Professor Craig Levin  
“Preliminary PET performance evaluation of an RF field-penetrable brain-sized PET insert for simultaneous PET/MR imaging” (Society of Nuclear Medicine & Molecular Imaging 2015 Annual Meeting)

**BOGDAN CONRAD**  
Orthopaedic Surgery  
Professor Fan Yang  
“Macroporous microribbon-based hydrogels accelerate neocartilage formation by mesenchymal stem cells *in vitro*” (Annual Biomedical Engineering Society Meeting 2015)

Dara Strauss-Albee in Honolulu, Hawaii for the 2013 American Association of Immunologists Annual Meeting
It was really exciting hearing the individual presentations and posters and seeing what people are currently working on. A lot of this work is not published yet, and I normally wouldn’t hear about it until a paper was published.

— Lauren Steinbaum on her 2015 travel experience
I learned valuable skills for communicating my scientific work to other researchers in my field and adjacent fields... I found it really exciting to meet and listen to many researchers who have written much of the literature that I read. The networking opportunities at BMES were critical to starting to become a part of this scientific community.

— Heather Rogan on her 2015 travel experience
MURAD MAMEDOV  
Microbiology & Immunology  
Professor Mark Davis  
“T-Cell activation and repertoire during murine malaria” (2015 Malaria Gordon Research Seminar and Conference)

JAKUB RAJNIAK  
Chemical Engineering  
Professor Elizabeth Sattely  
“Gene-centric discovery of a novel coumarin biosynthetic pathway in higher plants” (2015 AIChE Annual Meeting)

CHEN RAN  
Biology  
Professors Xiaoke Chen and Liqun Luo  
“The coding of cutaneous temperature in the spinal cord” (Cold Spring Harbor Asia Conferences - New Advances in Optical Imaging of Live Cells and Organisms)

HEATHER ROGAN  
Bioengineering  
Professor Fan Yang  
“A comparative study of chondrogenesis using aggregated or single mesenchymal stem cells in 3D biomimetic hydrogels” (Biomedical Engineering Society Annual Meeting 2015)

PANKAJ SHARMA  
Electrical Engineering  
Professor Sakti Srivastava  
“Transferring gaming technology to surgery: A portable motion tracking system for assessing psychomotor skills” (Business Engineering and Surgical Technologies Innovation Symposium 2015)

XINWEI SHI  
Electrical Engineering  
Professor Brian Hargreaves  
“Virtual coil navigator: A robust localized motion estimation approach for free-breathing cardiac MRI” (Annual Meeting of International Society for Magnetic Resonance in Medicine 2015)

PICHA SHUNHAVANICH  
Bioengineering  
Professor Norbert Pelc  
“Fluid-filled dynamic bowtie filter: A feasibility study” (SPIE Medical Imaging 2015)
I met many people whom I always knew from their publications… We talked about our research and I got some new ideas that I would like to test from those conversations.

— Jongmin Kim on his 2015 travel experience
HUIYUAN WANG  
Materials Science & Engineering  
Professor Sarah Heilshorn  
“Hybrid elastin-like polypeptide-polyethylene glycol hydrogels for 3D cell culture with independently controlled matrix stiffness and cell ligand density” (2015 MRS Fall)

TIANYI WANG  
Bioengineering  
Professor Fan Yang  
“Effects of hydrogel stiffness and biochemical compositions on stem cell-chondrocyte interactions in vivo” (2015 4th TERMIS World Congress)

YEN-HSIANG WANG  
Bioengineering  
Professor Christina Smolke  
“An RNA-based, generalizable synthetic genetic system for dynamic regulation” (The 14th International Summer School on Biocomplexity, Biodesign and Bioinnovation)

LYNDIA WU  
Bioengineering  
Professor David Camarillo  
“In vivo comparison of wearable head impact sensors” (Summer Biomechanics, Bioengineering, and Biotransport Conference 2015)

YUAN YAO  
Bioengineering  
Professor Norbert Pelc  
“Multivariate Gaussian model based Cramér-Rao lower bound evaluation of the in-depth PCXD” (SPIE Medical Imaging 2015)

KUN-HSING YU  
Biomedical Informatics  
Professors Michael Snyder and Russ Altman  
“Predicting papillary thyroid carcinoma patient outcomes through gene expression data” (American Medical Informatics Association 2015 Joint Summits on Translational Science)

DANQING ZHU  
Bioengineering  
Professor Fan Yang  
“A microfluidic-based platform for high-throughput screening of stem cell-niche interactions in 3D gradient hydrogels” (2015 4th TERMIS World Congress)
2014 — In 2014, 34 students received Stanford Bio-X Travel Awards.

MADHU ADVANI  
Applied Physics  
Professor Surya Ganguli  
“Optimal high dimensional M-estimation” (International Conference on Statistical Physics 2014)

RON ALFA  
Developmental Biology  
Professor Seung Kim  
“Suppression of insulin production and secretion by the decretin hormone Limostatin” (55th Annual Drosophila Research Conference)

ZOE ASSAF  
Genetics  
Professor Dmitri Petrov  
“Staggered sweeps: The obstruction of adaptation in diploids by recessive, strongly deleterious alleles” (Society for Molecular Biology and Evolution 2014)

ALEXIS BAILEY  
Developmental Biology  
Professor Margaret Fuller  
“Conserved regulation of the switch from mitosis to meiosis by Bgcn in the mammalian germline” (2014 Cold Spring Harbor: Germ Cells)

MATTHEW BIENIOSEK  
Electrical Engineering  
Professor Craig Levin  
“Analog electro-optical readout of SiPMs for compact, low power ToF PET/MRI” (3rd PET/MR and SPECT/MR Conference: Paradigms for Combined Modalities in Molecular Imaging)

GABRIEL BILLINGS  
Physics  
Professor KC Huang  
“De novo morphogenesis in L-forms via geometric control of cell growth” (Bacterial Cell Surfaces Gordon Conference 2014)

Cesare Jenkins in Austin, Texas for the 2014 AAPM Annual Meeting
After my presentation, I received a lot of critical and, at the same time, very supportive feedback. This feedback alone made the opportunity to attend the Bonhoeffer Retreat invaluable, but I am also very grateful to have been able to take in and contribute to a scientific dialogue integrating ideas drawn from so many fronts of the cutting edge of contemporary systems neuroscience.

— Jonathan Leong on his 2012 travel experience

**ERIC CHEHAB**  
Mechanical Engineering  
Professor Thomas Andriacchi  
“Combining biological and mechanical measures to predict the risk for progression of osteoarthritis” (2014 Orthopaedic Research Society Annual Meeting)

**ALEX CHORTOS**  
Chemical Engineering  
Professor Zhenan Bao  
“Electronic skin for biomedical applications” (1st Annual Winterschool on Bioelectronics)

**KYLE EAGEN**  
Structural Biology  
Professor Roger Kornberg  

**NANDITA GARUD**  
Genetics  
Professor Dmitri Petrov  
“Robust detection of hard and soft selective sweeps using haplotype statistics” (2014 Society for Molecular Biology and Evolution (SMBE))
Soah Lee in San Francisco for the 2014 MRS Spring Meeting & Exhibit

ANGELA HARRIS  
Bioengineering  
Professor Sanjiv Sam Gambhir  

MARIUS CATALIN IORDAN  
Computer Science  
Professor Fei-Fei Li  
“Category cohesion and distinctiveness in human visual cortex favor basic level representations” (Society for Neuroscience Annual Meeting 2014)

CESARE JENKINS  
Mechanical Engineering  
Professor Lei Xing  
“Visualizing and quantifying radiation therapy in real-time using a novel beam imaging technique” (2014 AAPM Annual Meeting)

BRIAN LEE  
Radiology  
Professor Craig Levin  
“RF-Transmissive PET detector insert for simultaneous PET/MR” (2014 IEEE MIC Seattle)

SOAH LEE  
Materials Science & Engineering  
Professor Fan Yang  
“Matrix stiffness regulates PSC differentiation towards smooth muscle cell lineage” (2014 MRS Spring Meeting & Exhibit)

All too often as graduate students we become pigeon-holed in a particular niche and the breadth and quality of the work presented at [the conference I attended served] as a perfect reminder of the excitement of science, and as an inspiration to contribute to our scientific knowledge base. All in all, this was a great opportunity and the funding from Bio-X made it possible.

— Jay Fitzgerald on his 2012 travel experience
ALICIA MARTIN  
Genetics  
Professor Carlos Bustamante  
“Imputation-based assessment of next generation rare exome variant arrays” (Pacific Symposium on Biocomputing 2014)

GOKUL RAMASWAMI  
Genetics  
Professor Jin Billy Li  
“Genetic mapping uncovers cis-regulatory landscape of RNA editing” (The Batsheva de Rothschild Seminar on RNA Editing-From Prediction to Function 2014)

PAUL REYNOLDS  
Electrical Engineering  
Professor Craig Levin  
“Stackable electronics architecture for densely packed PET detectors” (2014 IEEE MIC Seattle)

MATTHEW SACCHET  
Neurosciences  
Professors Ian Gotlib and Anthony Wagner  
“Characterizing white matter connectivity in major depressive disorder: Automated fiber quantification and maximum density paths” (2014 IEEE International Symposium on Biomedical Imaging)

LAURA SASPORTAS  
Bioengineering  
Professor Sanjiv Sam Gambhir  
“Single cell metabolomics in circulating tumor cells” (2014 Society for Nuclear Medicine and Molecular Imaging (SNMMI) Annual Meeting)

2013 Travel Awardees Patrick Ye, Stephen Fried, Dara Strauss-Albee, Drew Klein, and Chen Gu
KATHERINE SHARP
Pathology
Professor Jeff Axelrod
“Prickle/Spiny-legs isoforms control the polarity of the apical microtubule network in PCP” (Annual Drosophila Research Conference 2014)

VIKTOR SHKOLNIKOV
Mechanical Engineering
Professor Juan G. Santiago
“Fast, specific, and efficient affinity purification of target DNA from whole human blood by combining isotachophoresis and affinity chromatography” (18th International Conference on Miniaturized Systems for Chemistry and Life Sciences)

JOO YONG SIM
Mechanical Engineering
Professor Beth Pruitt
“Balancing forces in cell pairs” (2014 World Congress of Biomechanics)

JUSTIN SOLOMON
Computer Science
Professor Leonidas Guibas
It was fascinating to again participate in [the] same conversations I did many years ago, but [this time] see them get resolved in a completely different direction… Given that my dissertation work draws on much of [the] cited work [of others], I ended up in some heated theoretical conversations… Many of the insights from these conversations have found their way to my lab bench and are still affecting how I might implement some of my future studies during my time here at Stanford. Thus, thanks to the Bio-X Travel Subsidy, I can say honestly that I was able to engage in some truly interdisciplinary discourse that, to my delight, has enriched research in many disciplines including my own.

— Jana Schaich Borg on her 2011 travel experience

**HAO SU**  
Computer Science  
Professor Leonidas Guibas  
“Estimating image depth from shape collections” *(SIGGRAPH 2014)*

**SANDEEP VENKATARAM**  
Biology  
Professor Dmitri Petrov  
“Characterizing independent adaptive mutations in yeast experimental evolution using DNA barcodes” *(Evolution 2014)*

**CHRISTINE WANG**  
Bioengineering  
Professor Fan Yang  
“Comparative study of primary glioblastoma (GBM) and diffuse intrinsic pontine glioma (DIPG) cells from adult and pediatric brain cancer patients cultured in 3D PEG-based biomimetic hydrogel” *(Biomedical Engineering Society Annual Meeting 2014)*

**LUCIEN WEISS**  
Chemistry  
Professor W.E. Moerner  
“Single-molecule tracking of Smoothened reveals binding in the primary cilium that is altered by pathway agonists” *(American Society of Cell Biology 2014)*
The travel award from Bio-X played an important role in [giving me] a chance to get to know many people in...industry and academia. The intimate nature of the conference allowed me to have meaningful and in-depth conversations with many of the most prominent European researchers in the field, and these connections could be instrumental in my future career development.

— Alex Chortos on his 2014 travel experience

**BENJAMIN WILSON**  
Biology  
Professor Dmitri Petrov  
“Soft selective sweeps in complex demographic scenarios” (Society for Molecular Biology and Evolution (SMBE) 2014)

**YUAN YAO**  
Bioengineering  
Professor Norbert Pelc  
“To explore the more realistic energy responses of the in-depth photon counting detectors” (56th AAPM Annual Meeting & Exhibition)

**MICHAEL YIP**  
Bioengineering  
Professor David Camarillo  
“Model-less control of a flexible robotic catheter” (2014 IEEE International Conference on Robotics and Automation)

**BO ZHANG**  
Chemistry  
Professor Hongjie Dai  
“A plasmonic chip for biomarker discovery and diagnosis of Type-1 diabetes” (2014 Bioanalytical Sensors Gordon Research Seminar)
From 2006 to 2013, Stanford Bio-X gave 307 travel awards to Stanford graduate students from many disciplines across the university. They represent 36 different departments and 115 faculty members.

For the complete list of Stanford Bio-X travel awardees from 2006 to 2013, please visit: https://biox.stanford.edu/research/travel-awards

**LIVIA ZARNESCU**
Bioengineering
Professor David Camarillo
“Mechanical biomarkers of oocyte maturation” (American Society for Reproductive Medicine 2014)

**DANQING ZHU**
Bioengineering
Professor Fan Yang
“Mimicking tissue zonal organization by engineering hydrogels with biochemical and mechanical gradients” (2014 Materials Research Society - Symposium Y: Biomaterials for Biomolecule Delivery and Understanding Cell-Niche Interactions)

**2006-2013**

Amy Calgaro in Salt Lake City, Utah for the American Institute of Chemical Engineers National Conference 2015

Yen-Hsiang Wang in Istanbul, Turkey for the 14th International Summer School on Biocomplexity, Biodesign and Bioinnovation
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