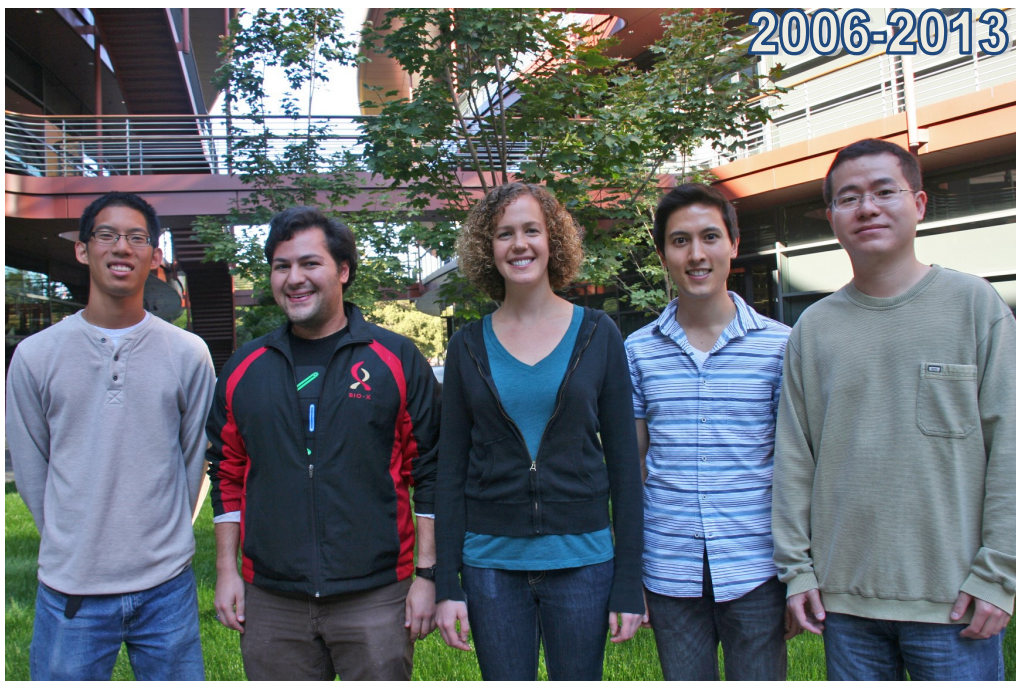


Bio-X

TRAVEL AWARD PROGRAM

2006-2013



Patrick Ye
(Bioengineering)

Stephen Fried
(Chemistry)

Dara Strauss-Albee
(Infectious Diseases)

Drew Klein
(Chem. Eng.)

Chen Gu
(Comp. & Math. Eng.)



The **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.

Bio-X provides \$500 in travel subsidies to graduate students working in Bio-X affiliated labs who are invited to give oral presentations of their work at an upcoming conference. The program began in 2006.

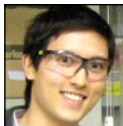
To date, we have had the opportunity to provide travel subsidies to over 290 students. These students are from many disciplines around campus; they represent 36 different departments and the research of the labs of 115 Stanford faculty members. The students have traveled to 53 foreign cities in 27 different countries and 31 different states in the United States.

ADDITIONAL AWARDS CONFERRED ON OUR TRAVEL AWARDEES DUE TO THEIR PRESENTATIONS

In addition to receiving the Bio-X travel award, a number of our student awardees have received additional accolades for the research that they presented. The full list of awards, publications, and other accomplishments related to their oral presentations may be found online at: http://biox.stanford.edu/grant/pdf/TA_additional_awards.pdf

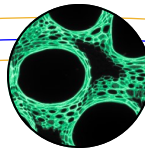


Stephen Fried traveled to San Francisco, California for the 57th Annual Meeting of the Biophysical Society. Aside from giving his talk, "Vibrational stark effects in the active site of ketosteroid isomerase point to large electric fields driving chemical catalysis," *he co-chaired his session on enzymes.*



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.*

Attending and presenting a talk...was a rewarding and beneficial experience. Many of the research talks and posters presented at the conference were directly relevant to my own research and provided me with good information and direction for future research.
- Robert Rawle on his 2012 travel experience



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.”



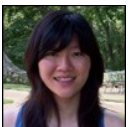
Patrick Ye with his advisor, Professor Kim Butts Pauly



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.



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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.”



Ben Almquist

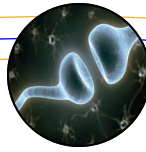


Hunter Shain traveled to Oslo, Norway for the 21st Meeting of the European Association of Cancer Research in 2010. He was the EACR-21 *Presidential Session Award Winner* for his talk, “An integrative structural and functional approach to pancreatic cancer gene discovery.”

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



Hunter Shain



Adam de la Zerda received the *Young Investigator Award* at the World Molecular Imaging Congress 2008 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 Photonics West 2009 conference.



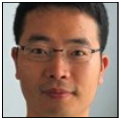
Sangbae Kim presented his talk, “Whole body adhesion: Hierarchical, directional and distributed control of adhesive forces for a climbing robot,” at the 2007 IEEE Intl Conference on Robotics and Automation. The robot, “StickyBot,” has been featured in *TIME Magazine* as one of the “Best Inventions 2006” (Nov. 13, 2006) and in *Wired Science* (Jan 3, 2007).

2013 At the time of publication, Bio-X anticipates at least 40 travel awards to be granted in 2013.



ERIC CHEHAB
Mechanical Engineering
Professor Thomas Andriacchi

“Knee flexion moment during walking influences medial compartment cartilage thickness in patients with knee osteoarthritis” (2013 Meeting of the American Society of Biomechanics)



JANG HWAN CHOI
Mechanical Engineering
Professor Rebecca Fahrig

“Image quality assurance study of a cone-beam C-arm CT with automatic exposure control for body applications”
(55th Annual Meeting of the American Association of Physicists in Medicine)



SHANNON EDD
Mechanical Engineering
Professor Thomas Andriacchi

“Meniscectomized knees regain normal walking flexion range of motion with time past surgery”
(2013 American Society of Mechanical Engineering Summer Bioengineering Conference)



FURQAN FAZAL
Applied Physics
Professor Steven Block

“Real time observation of initiation from the T7A1 promoter”
(2013 Science Research Conference: Mechanisms and Regulation of Prokaryotic Transcription)



LIMOR FREIFELD
Electrical Engineering
Professors Mark Horowitz and Thomas Clandinin

“Lateral interactions tune the early stages of visual processing in *Drosophila*” (*Cosyne 2013*)



STANFORD
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Travel Award Program



STEPHEN FRIED

Chemistry

Professor Steven Boxer

“Vibrational stark effects in the active site of ketosteroid isomerase point to large electric fields driving chemical catalysis” (*57th Annual Meeting of the Biophysical Society*)

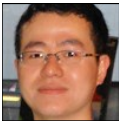


NANDITA GARUD

Genetics

Professor Dmitri Petrov

“Recent and strong adaptation in *Drosophila melanogaster* is driven primarily by soft selective sweeps” (*2013 Drosophila Research Conference*)



CHEN GU

Computational and Mathematical Engineering

Professor Leonidas Guibas

“Building Markov state models with solvent dynamics” (*11th Asia Pacific Bioinformatics Conference*)

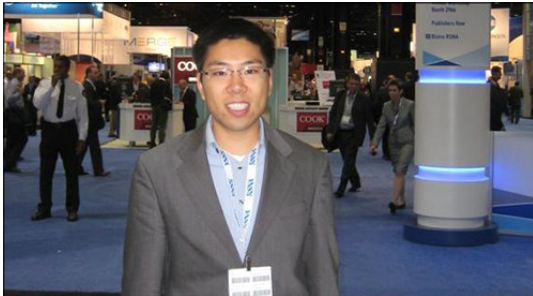


ANGELA HARRIS

Civil and Environmental Engineering

Professor Alexandria Boehm

“Validation and use of microbial source tracking methods for detecting fecal contamination in Dhaka, Bangladesh” (*17th International Symposium on Health-Related Water Microbiology*)



Adam Wang, 2012 Bio-X Travel Awardee

By presenting my talk, I was exposed to the practical concerns of experimentalists in the field, through follow-up questions from the audience. This discourse clarified what should be the most important future objectives of my research... [I also] attended...presentations...that could benefit from my expertise, and I am excited to get involved with them eventually.
- Nick Cordella on his 2010 travel experience



FIDEL HERNANDEZ III

Mechanical Engineering

Professor David Camarillo

“Comparing *in vivo* head impact kinematics from American football with laboratory drop and linear impactor head impact kinematics”

(*2013 American Society of Mechanical Engineering Summer Bioengineering Conference*)

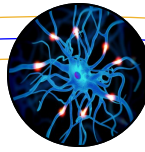


CAROLINE JORDAN

Radiology and Bioengineering

Professors Brian Hargreaves and Garry Gold

“Cubequant T1rho, QDESS T2, and cones sodium measurements are sufficiently reproducible *in vivo* cartilage studies” (*International Society for Magnetic Resonance in Medicine 2013*)



KONRAD KARCZEWSKI
Genetics

Professor Michael Snyder

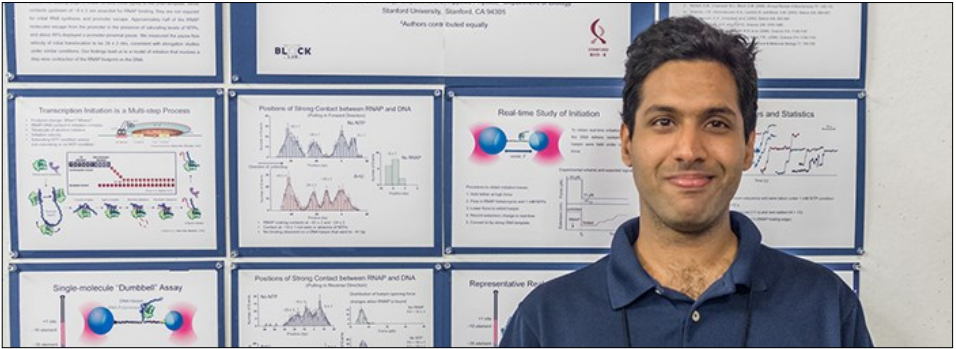
“STORMSeq: An open, community-based pipeline for processing personal genomics data in the cloud” (2013 Pacific Symposium on Biocomputing)



JONATHAN KARR
Biophysics

Professor Markus Covert

“Biological design and genome optimization using whole-cell models”
(2013 Keystone Symposium - Precision Genome Engineering and Synthetic Biology: Designing Genomes and Pathways)



Furqan Fazal, 2011 Bio-X Travel Awardee



JONGMIN KIM
Chemical & Systems Biology

Professor Margaret Fuller

“Gene expression profiling in an adult stem cell lineage identified a putative transcriptional repressor critical for differentiation” (Cold Spring Harbor Meeting on Stem Cell Biology 2013)



ANDREW KLEIN
Chemical Engineering

Professor Elizabeth Sattely

“Discovery of antibiotic biosynthesis pathways in dietary plants”

(2013 Gordon Research Seminar in Plant Metabolic Engineering)



SOAH LEE
Materials Science & Engineering

Professor Fan Yang

“The effects of PEG hydrogel crosslinking density and network homogeneity on protein diffusion”

(2013 Biomedical Engineering Society Annual Meeting)



MIA MATTIOLI
Civil & Environmental Engineering

Professor Alexandria Boehm

“Enteric pathogens in community source water, household stored water, and on hands in Tanzania”

(17th International Symposium on Health-Related Water Microbiology)



JAMES NISHIMUTA
Mechanical Engineering
Professor Marc E. Levenston

“Extracellular matrix turnover in cartilage and meniscus tissues in response to adipokines”
(2013 Annual Meeting of the Orthopaedic Research Society)



YUMA OHKURA
Mechanical Engineering
Professor Xiaolin Zheng

“Reducing minimum flash ignition energy of Al microparticles by addition of WO₃ nanoparticles”
(The 8th US National Combustion Meeting)



Laura Sasportas, 2011 Bio-X Travel Awardee



JAKUB RAJNIAK
Chemical Engineering
Professor Elizabeth Sattely

“Transcriptomics- and metabolomics-driven discovery of a novel indolic secondary metabolite pathway in Arabidopsis” *(2013 Gordon Research Seminar in Plant Metabolic Engineering)*



ANITA ROGACS
Mechanical Engineering
Professor Juan G. Santiago

“A high fidelity, validated model of temperature effects for electrophoresis”
(29th International Symposium on MicroScale Bioseparations)



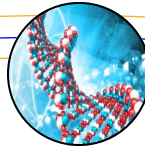
MIHYE SHIN
Mechanical Engineering
Professor Rebecca Fahrig

“Instrument design to measure the optical properties of reflectance and transmittance”
(55th Annual Meeting of the American Association of Physicists in Medicine)



JUSTIN SOLOMON
Computer Science
Professor Leonidas Guibas

“Dirichlet energy for analysis and synthesis of soft maps” *(2013 Symposium on Geometry Processing)*



DARA STRAUSS-ALBEE

Infectious Diseases

Professor Catherine Blish

“Quantifying the unanticipated diversity of the human NK cell repertoire”

(2013 American Association of Immunologists Annual Meeting)



CAROLINA TROPINI

Bioengineering

Professor KC Huang

“From cell wall structure to morphogenesis”

(2013 American Society for Microbiology General Meeting)



JAEWON YANG

Electrical Engineering

Professor Edward Graves

“The potential of positron emission tomography (PET) for intra-treatment dynamic tumor tracking during radiotherapy: A phantom study” and “The impact of audiovisual (AV) biofeedback respiratory training on 4D-PET image quality”

(55th Annual Meeting of the American Association of Physicists in Medicine)



PATRICK YE

Bioengineering

Professor Kim Butts Pauly

“Frequency dependence of ultrasound neuromodulation”

(13th International Symposium for Therapeutic Ultrasound)



JASON YEATMAN

Psychology

Professor Brian Wandell

“Quantitative biological measurements of white matter development”

(2013 Annual Meeting: Organization for Human Brain Mapping)



BO ZHANG

Chemistry

Professor Hongjie Dai

“Metal enhanced fluorescence: Boosting sensitivity for high-throughput proteomic immunoassay”

(2013 International Conference on Nanoscience & Technology)



CHUN HUA ZHENG

Biomechanical Engineering

Professor Marc Levenston

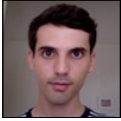
“Fact vs. artifact: Avoiding erroneous estimates of glycosaminoglycan content in tissue-engineered constructs” *(2013 Orthopaedic Research Society Annual Meeting)*

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



2012 In 2012, 57 students received Bio-X Travel Awards.



SERGIO BACALLADO

Structural Biology
Professor Vijay Pande

“Nonparametric Bayesian analysis of reversible processes with applications to molecular dynamics” (2012 World Meeting of the International Society for Bayesian Analysis)



SAMUEL BANDARA

Chemical & Systems Biology
Professor Tobias Meyer

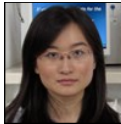
“Parameter estimation from live cell siRNA data predicts gene function from dynamics” (*q-bio Conference 2012*)



GABRIEL BILLINGS

Physics
Professor KC Huang

“De novo synthesis of the cell wall in *E. coli*: Reversion of L-forms” (*American Society of Microbiology General Meeting 2012*)



LILI CAI

Mechanical Engineering
Professor Xiaolin Zheng

“Flame synthesis of 1-D complex metal oxide nanomaterials” (*34th International Symposium on Combustion*)

This was my first experience presenting at an international conference, and the expert feedback from all across the world was invaluable. The presentation was also an excellent practice for my upcoming qualifying exams at Stanford. In addition to presenting, I was also able to listen to presentations on other topics in my field... [which] expanded the scope of my knowledge... and allowed me to discuss the application and interpretation of my research in the context of current ongoing work.

- Mia Mattioli on her 2011 travel experience



ANDREW CHANG

Chemistry
Professor Christina Smolke

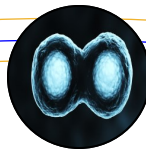
“High-throughput, quantitative cell-based screen for efficient tailoring of RNA device activity” (244th American Chemical Society National Meeting & Exposition)



JANG HWAN CHOI

Mechanical Engineering
Professor Rebecca Fahrig

“Fiducial marker-based motion compensation for the acquisition of 3D knee geometry under weight-bearing conditions using a C-arm CT scanner” (*The American Association of Physicists in Medicine 54th Annual Meeting*)



REBECCA DIMARCO

Bioengineering

Professor Sarah Heilshorn

“Designing novel preclinical drug screening platforms using protein-engineered materials”
(2012 Biomedical Engineering Society Meeting)



JESSICA FARUQUE

Electrical Engineering

Professor Sandy Napel

“A statistical model for predicting sample size for radiologists’ perception of similarity in liver lesions”
(Radiological Society of North America Annual Conference 2012)



JOSH FERREIRA

Chemical Engineering

Professor Cliff Wang

“Synthetic optimization of the MAPK and P13K pathways for cell proliferation and survival”
(6th International Conference on Bioengineering and Nanotechnology)



JAY FITZGERALD

Chemistry

Professor Chaitan Khosla

“Probing the biosynthesis of the type II polyketide A-74528 through heterologous pathway reconstruction” (243rd American Chemical Society National Meeting)



GIANCARLO GARCIA

Mechanical Engineering

Professor Juan G. Santiago

“Rapid and accurate profiling of trace amounts of microRNA with no amplification”
(16th International Conference on Miniaturized Systems for Chemistry and Life Sciences)



ERIKA GEIHE

Chemistry

Professor Paul Wender

“siRNA complexation, delivery, and release by new biodegradable molecular transporters” (243rd American Chemical Society National Meeting)





MAX GREENFELD

Biochemistry

Professor Daniel Herschlag

“Exploration of a simplified RNA folding landscape”

(Zing Nucleic Acids Conference 2012)



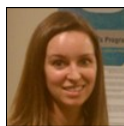
YI GU

Radiology and Electrical Engineering

Professor Craig Levin

“Characterization of inter-detector effects in a 3-D position-sensitive dual-CZT detector modules for PET”

(IEEE Medical Imaging Conference 2012)



MALLORY HAMMOCK

Chemical Engineering

Professor Zhenan Bao

“Non-covalent incorporation of specific binding sites onto organic transistors for selective biosensing applications”

(Materials Research Society Spring Conference 2012)



CRYSTAL HAN

Mechanical Engineering

Professor Juan G. Santiago

“Rapid southern-blot-type assays using bidirectional isotachopheresis”

(16th International Conference on Miniaturized Systems for Chemistry and Life Sciences)



JAKE HUGHEY

Bioengineering

Professor Markus Covert

“Across the spectrum of innate immune signaling: Heterogeneity and invariance”

(Systems Biology of Human Disease 2012)



JONATHAN KARR

Bioengineering

Professor Markus Covert

“A whole cell model of mycoplasma genitalium elucidates mechanisms of bacterial growth and replication”

(Keystone Symposium - Complex Traits: Genomics and Computational Approaches)



DAVID KASTNER

Neurobiology

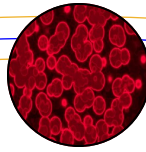
Professor Stephen Baccus

“Optimal placement of dynamic range by coordinated populations of ganglion cells”

(Society for Neuroscience 2012)

I had stimulating discussions with many students and several professors about their research and mine... Over the course of those discussions and while I was preparing for my talk, I realized several things about my data that I had not previously appreciated, which will significantly improve the manuscript we [were in the process of] preparing.

- Jake Hughey on his 2012 travel experience



GEORGIOS KATSIKIS

Mechanical Engineering
Professor Manu Prakash

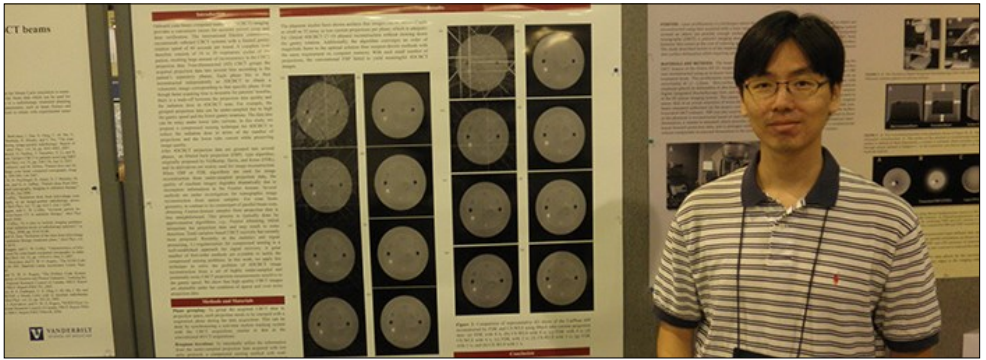
“Ferrodroplets: A global clock for droplet microfluidics”
(American Physical Society 65th Annual Division Fluid Dynamics Meeting)



HO JIN KIM

Radiation Oncology
Professor Lei Xing

“Improving the dose distribution and delivery efficiency in IMRT inverse planning by iteratively re-weighted L1-norm” *(2012 American Association of Physicists in Medicine Annual Meeting)*



Kihwan Choi, 2010 Bio-X Travel Awardee



YOUNG MIN KIM

Electrical Engineering
Professor Leonidas Guibas

“Acquiring 3D indoor environments with variability and repetition” *(Siggraph Asia 2012)*



GEORGE KORIR

Bioengineering
Professor Manu Prakash

“Punch card programmable microfluidics”
(65th Annual Meeting: American Physical Society – Division of Fluid Dynamics)



JANICE LAI

Mechanical Engineering
Professor Fan Yang

“Engineering cell-cell interactions in 3D for cartilage tissue engineering”
(Gordon Research Conference - Signal Transduction by Engineered Extracellular Matrices)



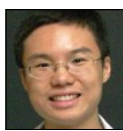
JONATHAN LEONG

Neurobiology
Professor Thomas Clandinin

“An amplifying supramolecular chemistry for staining non-transgenic brain”
(Bonhoeffer Retreat 2012)



**STANFORD
BIO-X
Travel Award Program**



CHEUK LUN LEUNG

**Chemical Engineering
Professor Jennifer Cochran**

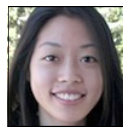
“Engineering cystine knot peptides as a new class of molecular imaging agents”
(2012 American Institute of Chemical Engineers Annual Meeting)



DEBORA LIN

**Chemical Engineering
Professor Zhenan Bao**

“Investigating cell contractile forces on biocompatible conductive films”
(2012 Spring MRS Meeting)



CASSIE LIU

**Chemical Engineering
Professor Jennifer Cochran**

“Engineered Hepatocyte Growth Factor Mutants: New Tools for Tissue Regeneration and Vasculari-
zation” (2012 American Institute of Chemical Engineers Annual Meeting)



LEWIS MARSHALL

**Chemical Engineering
Professor Juan G. Santiago**

“A Novel Device for Highly Efficient Extraction of Nucleic Acids From 100 Microliter Whole Blood
Samples” (American Institute of Chemical Engineers Annual Meeting and American Electrophoresis Society Joint
Meeting 2012)



BOWEN MENG

**Electrical Engineering and Radiation Oncology
Professor Lei Xing**

“Single-scan scatter correction in cone beam CT using stationary boundary blockers and compressed
sensing”
(AAPM Meetings 2012 - American Association of Physicists in Medicine)

Introduction

MRI inhomogeneity is a significant problem for breast imaging due to the irregular geometry of the breast and can cause water-fat separation to fail. Additionally, the inhomogeneity causes blurring in spiral imaging and can obscure structures of interest. Spiral imaging has the potential to shorten acquisition time, allowing it to be used for dynamic contrast-enhanced MRI. However, off-resonance has limited its use as IT because of unacceptable blurring (cross) and water-fat separation failures (axial).

We estimate water and fat images using three-point least-squares estimation and reconstruct the data using the spiral frequency for each voxel [1,2]. We compare three methods of estimating the field map and present the results of multi-frequency reconstruction for 3T spiral breast imaging.

Methods

Data Acquisition

T₂-weighted data were acquired at three different echo times using a spiral trajectory. We scanned three normal volunteers using a 3D stack-of-spiral acquisition with TR_{1,2,3} = 1.2, 2.0, 2.8 ms and TR = 21.4 ms on a 3T GE scanner using a four-channel breast coil. We used a 9-slice spiral, 0.5mm PDZ, 1.3-1.7mm resolution (axial, sagittal, 3 slices thickness, 30° flip angle, linear and a 2.5-second scan time).

Reconstruction

We used a three-point least squares decomposition of the water (W) and fat (F) images that use the three acquired data sets and the resulting least-squares residual maps for a multi-frequency frequency (MFF). For multi-frequency reconstruction, we denoised and reconstructed, we denoised and reconstructed the data and performed the least-squares decomposition to produce images for several

Results

Representative cost functions - fat region

This figure shows a cost for which R_2 fails to correctly estimate the information due to the bounded resonances. Not the (R_2, R_2) cost function. Note: the cost function is not the field variation, as indicated by the dashed (0) line.

When denoising at the water frequency, the signal from neighboring voxels flows into the cost of interest and affects the shape of the residual function.

Representative field maps

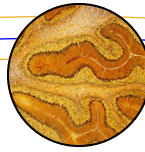
The residual function values for the reconstruction estimated in each voxel are shown in Figure 2. The residual function values are shown in the residual map. The field map corresponding to the cost function is shown in the residual map. The field map corresponding to the cost function is shown in the residual map.

Best data - normal volunteer

The multi-frequency images were reconstructed using the field map generated by minimizing the average of R_2 and R_2 . Some blurring is visible in the superior edge of the boxes in the single frequency images (purple box) but not in the multi-frequency images. The multi-frequency images have reduced blurring, particularly in the peripheral regions, particularly in the peripheral regions, particularly in the peripheral regions.

References

Kristin Granlund, 2010 Bio-X Travel Awardee



WIDYA MULYASASMITA

Bioengineering

Professor Sarah Heilshorn

“Hetero-assembling protein-engineered physical hydrogels to improve injectable therapy”

(Biomedical Engineering Society 2012 Annual Meeting)

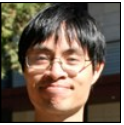


SIGRID NACHTERGAELE

Biochemistry

Professor Rajat Rohatgi

“Regulation of the Hedgehog pathway by oxysterols” *(2012 Hedgehog Signaling Meeting)*



ANDY NGUYEN

Computer Science

Professor Leonidas Guibas

“Soft maps between surfaces” *(Symposium on Geometry Processing 2012)*



CHINYERE NWABUGWU

Electrical Engineering

Professor David Paik

“Mathematical modeling of the interactions between cellular programs in response to oncogene inactivation” *(2012 IEEE 12th International Conference on Bioinformatics and Bioengineering)*



MONICA ORTIZ

Bioengineering

Professor Drew Endy

“Engineered transmission of DNA messages among bacteria”

(DNA18: The 18th International Conference on DNA Computing and Molecular Programming)



WES OVERTON

Chemical Engineering

Professor Cliff Wang

“Dose-dependent p21(Cip1/Waf1) cell cycle regulation”

(2012 American Institute of Chemical Engineers Annual Meeting)



ANDREINA PARISI-AMON

Bioengineering

Professor Sarah Heilshorn

“Protein engineered biomaterials for bioactive coatings”

(3rd International Conference: Strategies in Tissue Engineering)



BRYAN PETZOLD

Mechanical Engineering

Professors Beth Pruitt and Miriam Goodman

“Body mechanics regulate the force threshold for gentle touch sensation in the nematode *C. elegans*” *(Biophysical Society 56th Annual Meeting)*



LORI PHILLIPS

Surgery

Professor Olivia Martinez

“Natural killer cells target neural stem/progenitor cells through NKG2D”
(The XXIV International Congress of the Transplantation Society)



PRATAP RAO

Mechanical Engineering

Professor Xiaolin Zheng

“Flame synthesis of WO₃ nanotubes and nanowires for efficient photoelectrochemical water-splitting” *(34th International Symposium on Combustion)*

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



ROBERT RAWLE

Chemistry

Professor Steven G. Boxer

“DNA-mediated fusion between small vesicles and a planar tethered bilayer patch” *(Biophysical Society Meeting 2012)*



CLIFTON ROOZEBOOM

Mechanical Engineering

Professor Beth Pruitt

“Multi-functional sensor for the environment”
(25th International Conference on Micro Electro Mechanical Systems)



MATTHEW SACCHET

Psychology and Neurosciences Institute

Professors Anthony Wagner and Ian Gotlib

“Frontal lobe contributions to deterministic and probabilistic learning: Evidence for dissociable feedback-related processes” *(2012 Society for Neuroscience)*



JEFFREY SCHLOSSER

Mechanical Engineering and Bioengineering

Professors Ken Salisbury and Dimitre Hristov

“4D ultrasound calibration for radiotherapy guidance using automatic intramodality image registration” *(American Association of Physicists in Medicine Annual Meeting 2012)*

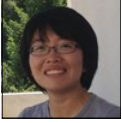
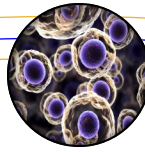


ALIA SCHOEN

Materials Science & Engineering

Professor Sarah Heilshorn

“A modular strategy for the synthesis of nanoscale inorganic materials using self-assembling biomolecules” and “From triskelion to aggregate to assembly: Clathrin self-assembly and remodeling”
(Materials Research Society Fall Meeting 2012)



MIHYE SHIN

Mechanical Engineering
Professor Rebecca Fahrig

“Resonant frequency of rotating anode x-ray tubes”
(American Association of Physicists in Medicine Annual Meeting 2012)



VIKTOR SHKOLNIKOV

Mechanical Engineering
Professor Juan G. Santiago

“Ion altered fluorescence imaging (IAFI): A non-invasive, visualization method which simultaneously images scalar fields and quantifies local ion concentrations”
(65th Annual Meeting of the APS Division of Fluid Dynamics)



MEGHAAN SMITH

Chemical Engineering
Professor Sarah Heilshorn

“Elucidation of mast cell localization using a microfluidic device that generates a controllable diffusion-driven SCF gradient”
(2012 American Institute of Chemical Engineers Annual Meeting)

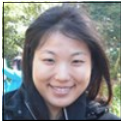


JUSTIN SOLOMON

Computer Science
Professor Leonidas Guibas

“Introduction to shape analysis and correspondence” and “Flexible developable surfaces”
(2012 Symposium on Geometry Processing)





MIN-SUN SON

Bioengineering
Professor Marc E. Levenston

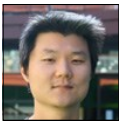
“T1 ρ and T2 show regional variation in degenerate human menisci: Correlation with biomechanics and matrix composition” (*ISMRM 2012*)



KATHERINE STEELE

Mechanical Engineering
Professor Scott Delp

“How do muscle contributions to support and progression change during crouch gait?” (*Gait & Clinical Movement Analysis Society 2012*)



JONGMIN SUNG

Biochemistry
Professor James Spudich

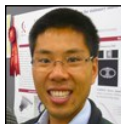
“Single molecule studies of recombinant human α - and β -cardiac myosin to elucidate molecular mechanism of familial hypertrophic and dilated cardiomyopathies” (*56th Biophysical Society Meeting*)



JIANBIN WANG

Bioengineering
Professor Stephen Quake

“A comparison of dual kV energy integrating and energy discriminating photon counting detectors for dual energy x-ray imaging” (*SPIE Medical Imaging 2012*)



ADAM WANG

Electrical Engineering
Professor Norbert Pelc

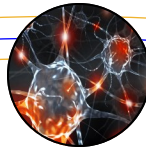
“A comparison of dual kV energy integrating and energy discriminating photon counting detectors for dual energy x-ray imaging” (*SPIE Medical Imaging 2012*)

8–11:15 a.m. Nanosymposium
125: Multisensory Interactions
Theme D: Sensory and Motor Systems

1–3:30 p.m. Nanosymposium
226: Extrastriate Cortex: Functional
Theme D: Sensory and Motor Systems

MONDAY, NOVEMBER 15
8–11 a.m. Nanosymposium
324: Sound, Time, Movement, and Rhythm
Theme D: Sensory and Motor Systems

Andreas Rauschecker, 2010 Bio-X Travel Awardee



CYNTHIA WU

Chemical Engineering
Professor Gerald G. Fuller

“Quantitative analysis of amyloid-integrated biofilms by interfacial rheology”
(The XVI International Congress on Rheology)



JASON YEATMAN

Psychology
Professor Brian Wandell

“Dual process account of the joint development of white matter and reading skills”
(Society for the Neurobiology of Language 2012)



CHUN HUA ZHENG

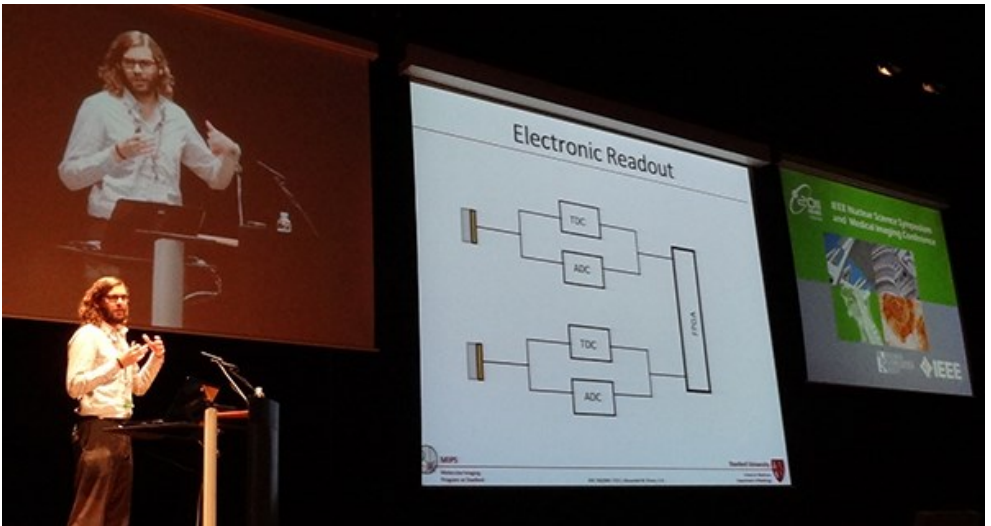
Biomechanical Engineering
Professor Marc E. Levenston

“The effect of TGF-beta and BMP pathway inhibition on chondrocyte mechanotransduction” *(Orthopaedic Research Society 2012)*

2006-2011

From 2006 to 2011, 206 graduate students received Bio-X travel awards. These students were from many disciplines across campus and worked in the laboratories of 85 faculty members.

For the complete list of Bio-X travel awardees from 2006 to 2011, visit
http://biox.stanford.edu/grant/pdf/TA_awardees.pdf



Alex Grant, 2011 Bio-X Travel Awardee



STANFORD BIO - X

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To learn more about the Bio-X Program at Stanford, please visit the Bio-X website at:

<http://biox.stanford.edu>