

GRADUATE STUDENTS: FRONTIERS OF INNOVATION SCHOLARSHIPS
AMOUNT REQUESTED: \$25,000

Research Area	Proposal Title	Trainee	Principal Investigator (PI)	PI Home Department
Enriching Human Life and Society	New Media Communication for Community Wellness	To be recruited	Booker, Angela	Communication
Enriching Human Life and Society	Health Certification and HIV risk in the Commercial Sex Market	Manian, Shanthi	Graff Zivin, Joshua	Economics and School of International Relations and Pacific Studies
Enriching Human Life and Society	Layer-by-Layer Bioprinting of Stem Cells for Retinal Tissue Regeneration	Zhu, Wei	Chen, Shaochen	NanoEngineering
Enriching Human Life and Society	Physical Activity Patterns via Accelerometry	Xu, Yue	Natarajan, Loki	Family and Preventive Medicine
Enriching Human Life and Society	Diatoms: A biological system ripe to be tailored for nanotechnology	Lerch, Sarah	Hildebrand, Mark	SIO
Enriching Human Life and Society	Chemokine Receptor Dynamics and Druggability	Heyneman, Alexandra Louise	Amaro, Rommie	Chemistry and Biochemistry
Enriching Human Life and Society	Uncovering the Mechanogenetics of Cardiac Aging	Busija, Anna Rebecca	Insel, Paul A.	Pharmacology/School of Medicine
Enriching Human Life and Society	Access and Affordability of Cancer Drugs in International Setting	Cuomo, Raphael Eduardo	Mackey, Tim	Anesthesiology
Enriching Human Life and Society	Cartridge lab-on-chip (CLOC) for Mobile Health	Freeman, Lindsay	Fainman, Yeshaiashu	ECE
Enriching Human Life and Society	Functional Lifetime Imaging of Neurons In Vivo	Hollett, Geoffrey	Sailor, Michael	Chemistry and Biochemistry
Enriching Human Life and Society	Low-Noise Mostly Digital Integrated Electronics for Ultra-Sensitive Room-Temperature Magnetometry to Explore Cardio-Biomagnetism in Humans	Levy, Cooper	Mercier, Patrick	ECE
Enriching Human Life and Society	In pursuit of understanding amyloid β -peptide-mediated Alzheimer's disease pathology	Joon Lee	Lal, Ratnesh	Bioengineering, MAE
Enriching Human Life and Society	PIRC-NET: Analyzing Social Media to characterize HIV at-risk populations among MSM in San Diego.	Thangarajan, Narendran	Weibel, Nadir	CSE
Enriching Human Life and Society	Nanotechnology mediated reprogramming of interferon responses in the tumor microenvironment	Plaut, Justin	Zhang, Dong-Er	Division of Biological Sciences
Enriching Human Life and Society	Self-control as a habit	St Louis, Robert Larsen	Winkielman, Piotr	Psychology
Enriching Human Life and Society	Assessing Factors Contributing to Preventing Mother to Child Transmission Care Among HIV+ Women in Kenya: A Mixed Methods and Cost-Effectiveness Analysis	Bergmann, Julie	Stockman, Jamila	Medicine
Enriching Human Life and Society	Examining the Role of the Microbiome in Alcoholic Liver Disease through Systems Biology	Joanne Liu	Zengler, Karsten	Bioengineering
Enriching Human Life and Society	Development of Quantitative Analytics for Parkinson's Disease	Kang, Byeong Keun	Nguyen, Truong	ECE
Enriching Human Life and Society	Protective Effect of Physical Activity on Cognition in HIV: Cardiovascular Mechanisms	Jessica Montoya	Moore, David	Psychiatry
Enriching Human Life and Society	Investigations of HIV Latency through Transcriptional Profiling	Cory White	Richman, Douglas	Pathology
Enriching Human Life and Society	Enhancing safety, efficacy and affordability of medications for complex diseases using a proteogenomic and systems biology approach	Li, Shangzhong	Lewis, Nathan	Pediatrics
Enriching Human Life and Society	Enzyme Encapsulating Nanoshells To Probe and Modulate Neurotransmitter Distribution	Vaidyanathan, Mukanth	Esener, Sadik	Nanoengineering
Enriching Human Life and Society	Implementation of an Automated Phenotyping Assay and Application to Discover Novel Genes Underlying Cardiac Disease	Zarndt, Rachel	Bodmer, Rolf	Pediatrics
Enriching Human Life and Society	Enabling high-density human brain mapping experiments	Hermiz, John	Gila, Vikash	ECE
Enriching Human Life and Society	Investigating the Recruitment of Progenitor Cells in Response to Injectable Myocardial Matrix Therapy for Myocardial Infarction	Wang, Raymond	Christman, Karen	Bioengineering
Enriching Human Life and Society	Defining functions and failures of EPC – a frequently altered yet poorly understood cancer gene	Searle, Naomi	Pillus, Lorraine	Molecular Biology
Enriching Human Life and Society	Reversing Muscle Degeneration after Rotator Cuff Tears	Gibbons, Michael	Ward, Samuel	Radiology and Orthopaedic Surgery
Enriching Human Life and Society	Online learning and recalibration of environmental sensors	Venkatesh, Jagannathan	Simunic Rosing, Tajana	CSE, ECE
Enriching Human Life and Society	Mapping 3D Cell Motility Signaling Networks	Daniel Ortiz	Frale, Stephanie	Bioengineering
Enriching Human Life and Society	New Approaches in Organ Engineering: Creating Cardiac Organoids	Sidhwani, Pragya	Yelon, Deborah	Biological Sciences (CDB)
Enriching Human Life and Society	Developing novel network algorithms for manipulating cell fate	Zhang, Kai	Wang, Wei	Chemistry and Biochemistry
Enriching Human Life and Society	A Cross-Disciplinary Approach to Transforming our Understanding of Cell Membrane Permeability.	Lin, Charles	Walker, Ross	San Diego Supercomputer Center
Enriching Human Life and Society	Quantitative analysis of cytoskeletal dynamics in cell repair in vivo	Chuang, Marian	Cosman, Pamela	ECE
Enriching Human Life and Society	Developing an ex vivo model for the evaluation of therapies in the rheumatoid arthritis synovial joint	Raleigh, Aimee Rose	Sah, Robert	Bioengineering
Enriching Human Life and Society	Effects of photoperiod disruption on the DISC1-Boymaw model of major psychiatric disorders	Higa, Kerin	Geyer, Mark	Psychiatry
Enriching Human Life and Society	Integrating Philosophy and Ethnography in Neuroscientific Research on Alzheimer's Disease	Hardesty, Rebecca	Mobley, William	Neurosciences
Exploring the Basis of Human Knowledge, Learning and Creativity	Human brain/body interactions during intentional upper-limb actions	Pion-Tonachini, Luca	Kreutz-Delgado, Kenneth	ECE
Exploring the Basis of Human Knowledge, Learning and Creativity	Studying Human Behavioral Patterns in Virtual Reality with fMRI Imaging	TBN	Schulze, Jurgen	Qualcomm Institute
Exploring the Basis of Human Knowledge, Learning and Creativity	Heterogeneity in Normal Neurocognition	Patt, Virginie	Brown, Gregory	Psychiatry
Exploring the Basis of Human Knowledge, Learning and Creativity	Is space a hologram?	Dougherty, John Edward	Callender, Craig	Philosophy
Exploring the Basis of Human Knowledge, Learning and Creativity	Paradigm Shifts in the Biological Sciences: What has happened to big theory?	Fauvelle, Mikael	Friedman, Jonathan	Anthropology
Exploring the Basis of Human Knowledge, Learning and Creativity	From pixels to perceptual manifolds – Utilizing machine learning to understand the perception of facial attractiveness	Amanda Song	Yu, Angela	Cognitive Science
Exploring the Basis of Human Knowledge, Learning and Creativity	Aerial Jungle Exploration	Shearer, Alexandria Louise	Schurgers, Curt	Qualcomm Institute
Exploring the Basis of Human Knowledge, Learning and Creativity	Establishing stable dendritic spine formation as a fundamental property of memory storage	Hu, Alice	Tusynski, Mark	Neurosciences

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Exploring the Basis of Human Knowledge, Learning and Creativity	LIVING MULTISCALE MOLECULAR MACHINES	Alvaro Ruiz Martinez	Tartakovsky, Daniel	MAE
Exploring the Basis of Human Knowledge, Learning and Creativity	Single Synapse Recording in Mammalian Systems Using Novel Nanoscale Arrays	Scott, John Thomas	Zou, Yimin	Biological Sciences
Exploring the Basis of Human Knowledge, Learning and Creativity	Cortical Networks Supporting Problem Solving and Insight	Hsu, Sheng-Hsiou	Jung, Tzyy-ping	Institute for Neural Computation
Exploring the Basis of Human Knowledge, Learning and Creativity	Neural Signatures of Auditory Perceptual Discrimination	Thielk, Marvin	Genter, Tim	Psychology
Exploring the Basis of Human Knowledge, Learning and Creativity	Cognition in Noisy Environments	Maisel, Brenton	Lindenberg, Katija	Chemistry and Biochemistry
Exploring the Basis of Human Knowledge, Learning and Creativity	Rethinking mental illness through biological and social sciences	Starshinina, Anna	Gates, Kelly	Communication
Exploring the Basis of Human Knowledge, Learning and Creativity	MDONS (Massively Distributed Online Neuroscience) for Improving Virtual Experience	Yu-Te Wang	Brown, Sheldon	Visual Arts
Exploring the Basis of Human Knowledge, Learning and Creativity	Tracing the Functional Neuropathology of Rett Syndrome	Richard Gao	Voytek, Bradley	Cognitive Science
Exploring the Basis of Human Knowledge, Learning and Creativity	Evolution and Development of Prefrontal cortex in Humans and Great apes: Exploring the Neural substrates of Human Knowledge, Learning and Creativity	Branka Hrvoj-Mihic	Semendeferi, Katerina	Anthropology
Understanding and Protecting the Planet	Ecosystem Services Assessment for Deep-Ocean Stewardship	Le, Jennifer Tran	Levin, Lisa	Scripps Institution of Oceanography
Understanding and Protecting the Planet	Deciphering Viral Genomes During Disease Emergence and Epidemics	To Be Recruited	Meyer, Justin	Ecology Behavior and Evolution
Understanding and Protecting the Planet	Crop protection through early detection of predator and pathogen molecular signatures in algal biofuels	Nguyen, Don Duy	Dorrestein, Pieter	Skaggs School of Pharmacy and Pharmaceutical Sciences
Understanding and Protecting the Planet	Designing an Improved Mechanism for Voluntary Carbon Offsets	Globus-Harris, Isla Rose	Watson, Joel	Economics
Understanding and Protecting the Planet	Determining effects of long-term environmental variability on marine food webs and the status of endangered leatherback sea turtles	Hetherington, Elizabeth Dorsey	Kurle, Carolyn	Division of Biological Sciences
Understanding and Protecting the Planet	Climate Change and Electoral Turmoil: Understanding Climate-Driven Political Instability	Obrodovich, Nicholas	Fowler, James	Medical Genetics and Political Scien
Understanding and Protecting the Planet	Genetics and Ecology of Crop Protection in Cyanobacteria	Ota, Mizuho	Golden, James	Division of Biological Sciences
Understanding and Protecting the Planet	Exploring the Fundamental Behavior of Ceramics of Unique Morphologies: Materials by Design for Hydrogen Storage Applications	Ren, Tianqi	Graeve, Olivia	MAE
Understanding and Protecting the Planet	Natural Disasters and State Formation: Ottoman Bursa in the Mid-Nineteenth Century	Tasyakan, Baris	Kayali, Hasan	History
Understanding and Protecting the Planet	Electric Field Control of Magnetism for Ultra Low Power Memory	Cho, Ethan Yih Tsen	Cybart, Shane	Physics
Understanding and Protecting the Planet	The effect of climate on parasitism of salt marsh plants in California	Noto, Akana	Hechinger, Ryan	SIO
Understanding and Protecting the Planet	Transport Processes in California Coastal Waters	Ye, Jingxin	Abarbanel, Henry	Physics
Understanding and Protecting the Planet	Identifying genes that drive clearance of infection by widespread but poorly understood pathogens	Balla, Keir	Troemel, Emily	Section of Cell and Developmental Biology
Understanding and Protecting the Planet	pH regulation by proton pump in diatoms: potential roles in photosynthesis and biodiesel production	Yee, Daniel Patrick	Tresguerres, Martin	SIO
Understanding and Protecting the Planet	Archaeomagnetism: The marriage of Archaeology and Paleomagnetism to enhance scientific understanding in both fields	Jones, Shelby Anne	Tauxe, Lisa	SIO
Understanding and Protecting the Planet	Speeding Up Anti-Neuroinflammatory Marine Natural Products Dereplication and Structural Elucidation with SMART	Zhang, Chen	Gerwick, William H.	SIO
Understanding Cultures and Addressing Disparities in Society	Remote Sensing and Monitoring Corruption in Developing Democracies	Davidson, Michael	Lin, Albert Yu-Min	Qualcomm Institute
Understanding Cultures and Addressing Disparities in Society	Institutions and Cultural Preferences in Mainland China, Hong Kong and Taiwan	Lam, Onyi	Gordon, Roger	Economics
Understanding Cultures and Addressing Disparities in Society	How Does Affordable Housing Structure Access to Aid? Poverty, Support Networks, and Housing in the City	Beck, Kevin Ryan	Martin, Isaac	Sociology
Understanding Cultures and Addressing Disparities in Society	Immigrant Political Participation in Diverse Integration Contexts: An Identity Politics Approach	Nicholson, Michael	Wong, Tom	Political Science
Understanding Cultures and Addressing Disparities in Society	Analyzing Social Wrongs: Structure, Causation and Explanation.	Alexandre Marcellesi	Cartwright, Nancy	Philosophy
Understanding Cultures and Addressing Disparities in Society	The Kumaia/Kumeyaay Borderlands: Traditional Knowledge and Formal Education Intermix to Revitalize a Language and Culture	Vazquez, Cynthia	Frank, Ross	Ethnic Studies
Understanding Cultures and Addressing Disparities in Society	Topological Data Analysis for Informing Policy in Developing Nations	Fedus, Liam	Meyer, David	Mathematics
Understanding Cultures and Addressing Disparities in Society	Innovative experiential learning methods to attract under-served K12 students into STEM disciplines	Sinha, Mridu	Coleman, Todd	Bioengineering
Understanding Cultures and Addressing Disparities in Society	Mapping and Visualizing Complex, Large Scale Underwater Archaeological and Ecological Sites	Gautier, Quentin	Kastner, Ryan	CSE
Understanding Cultures and Addressing Disparities in Society	Citizens Without States: Petitions and the Formation of a Political Sphere in Syria	Smuin, Benjamin James	Provence, Michael	History
Understanding Cultures and Addressing Disparities in Society	TWEETED IMAGES AND THE HEALTH OF THE VISUAL ENVIRONMENT	Crockett, Damon	Manovich, Lev	Qualcomm Institute