



HARVARD SUMMER UNDERGRADUATE RESEARCH VILLAGE 2018 -- FINAL PRESENTATIONS

PRISE 2018 -- FINAL PRESENTATION SCHEDULING MATRIX

Monday, August 6, 2018

Date/Location in Vanserg Hall	3:00pm-3:18pm	3:20pm-3:38pm	3:40pm-3:58pm	4:00pm-4:18pm	4:20pm-4:38pm	4:40pm-4:58pm	5:00pm-5:18pm	5:20pm-5:38pm
Monday, 8/6 Room 210 Introducer: Sean Gibney	Alexander Wei , Computer Science, Optimal Las Vegas approximate near neighbors in tp (Jelani Nelson)	Brenda Chiang , Molecular and Cellular Biology, Homophilic specificity of clustered protocadherin interactions (Rachelle Gaudet)	Eunice Lee , Physics, Modulation transfer spectroscopy of rubidium as a stable frequency reference for laser-cooling molecules (John Doyle)	Miro Furtado , Applied Math, Preparation of atomically flat and single-terminated SrTiO ₃ (Jennifer Hoffman)	Andrew Winnicki , Physics and Computer Science, Potential energy surfaces from TDDFT using Casida's method (Prineha Narang and Johannes Flick)	Erin Kim , Molecular and Cellular Biology, Automatic behavior in musicians (Jeanne Duffy, Charles Czeisler)	Evan Thompson , Biomedical Engineering, Fabricating therapeutic loaded bandages for the treatment of chronic wounds in diabetic patients (David J. Mooney)	Ege Eskibozkurt , Human Developmental and Regenerative Biology, Effects of aging and tendon anatomical location on tendon structure and tendon cell properties (David J. Mooney)
Monday, 8/6 Room 211 Introducer: Emma Clerx	Yasemin Kiriscioglu , Physics & Math, A Bayesian inference framework for two color holography (Vinothan Manoharan)	Anca Dragulescu , Physics, Improving the quality factor for graphene-based resonators (Hongkun Park)	Yunchao Zhang , Physics and Mathematics, Twisted 2-dimensional materials (Amir Yacoby)	Natasha Abrams , Astrophysics, Probing the evolution of supermassive black holes in various galaxy environments (Akos Bogdan)	Kai Trepka , Chemistry and Physics, Position-specific attachment of nanoscale samples (Ye Tao)	Leon Yang , Neurobiology/Applied Mathematics, Targeting OPN and Qa-1 to modulate microglia in Alzheimer's Disease (Harvey Cantor)	Liam Corrigan , Physics, Microfluidic device implementation in nitrogen vacancy nuclear magnetic resonance experiments (Ronald Walsworth)	
Monday, 8/6 Room 213 Introducer: Madeleine Granovetter	Allison Kao , Neurobiology & Computer Science, Neuronal cell-type classification: Methods and application to the retina (Joshua Sanes)	Joel Balkaran , Biomedical Engineering, Optimization of ionic liquid CAGE for drug delivery (Samir Mitragotri)	Filippos Ilarion Sytilidis , Math and Physics, Distributions corresponding to Seifert matrices of genus 1 Knots (Alison Miller)		Johnathan Clark , Integrative Biology, A population genomic analysis of cryptic speciation in thrushes (AVES: <i>Catharus</i>) (Scott Edwards)	Jonathan Garzon , Neurobiology, Optimizing fluorescent immunocytochemistry results of voltage-gated potassium channel expression using methanol freeze-substitution (Paul Rosenberg)	Eliane Grace , Human Developmental and Regenerative Biology, Inhibiting arginine metabolism in myelodysplastic syndrome (David Scadden)	Carolyn Wong , Applied Mathematics, Investigation of the role of <i>srrA</i> in <i>Staphylococcus aureus</i> biofilm formation (Richard Losick)
Monday, 8/6 Room 214 Introducer: Calder Miller	Gabriela O. Escalante , Human Developmental and Regenerative Biology, Enhancing maturation of iPSC-derived cardiomyocytes (Richard Lee)	Sophie Heritage , Medicine, Implications of hormones in PC9 cancer cells (Lee Rubin)	Chet Johal , Physical Natural Sciences, Dielectric Elastomers: robots in disguise and how to optimise (David R. Clarke)	Jontie Honey , Medicine, Determining a mechanistic aetiology for the inclusion bodies in Parkinson's disease (Penelope Hallett)	Sushant Achawal , Information and Computer Engineering, VisWeb: Web-based, large scale volume rendering (Hanspeter Pfister)	Raymond So , Chemical and Physical Biology, Functional characterization of sleep-wake regulating genetic variants (Richa Saena)	Laura Jenny , Integrative Biology, Changes in the plant microbiome during pathogen infection (Naomi Pierce)	
Monday, 8/6 Room 215 Introducer: Vaibhav Mohanty	Arielle Rothman , Bioengineering, High-throughput screening for compounds that induce maturation of stem cell-derived beta cells (Douglas Melton)	Serina Hu , Mathematics, Classifying representations of SL ₂ C (Joseph Harris)	Gabriel Dardik , Chemistry, The role of mTOR in contralateral cell cycle activation in axolots (Jessica Whited)		Eva Cai , Bioengineering, Developing liquid-infused tympanostomy tubes and characterization of bacterial adhesion and biofilm formation (Jennifer Lewis)	Pierre-Emmanuel Grimm , Aerospace & Aerothermal Engineering, Oscillatory modes of a two-dimensional monolayer of spheres in a rotating drum (Shmuel Rubinstein)	Edmund Derby , Physics, Structural color from binary colloidal aggregates (Ming Xiao)	Robert Appleby , Developmental Biology, Investigation into the regulation of the maternal to zygotic transition in <i>Parhyale hawaiiensis</i> (Cassandra Extavour)
Monday, 8/6 Room 217 Introducer: Steffan Paul	Jose Martinez Fernandez , Human Developmental and Regenerative Biology, Function of Eya2 in axolotl limb regeneration (Jessica Whited)	Stephanie Dufresne , Integrative Biology, Testing grey parrot (<i>Psittacus erithacus</i>) language development through sequences and the preposition "in" (Irene Pepperberg)		Esther Elonga , Chemistry, Retinitis pigmentosa (Anna Greka)	Jamie Cainesb , Bioengineering, Stationary CT with photocathode emission (Rajiv Gupta)	Cameron Krulewski , Mathematics and Physics, K-theory and condensed matter (Michael Hopkins)	Chinaza Ochi , Neurobiology, Investigating visual evoked potentials as a potential biomarker for autism spectrum disorder in tuberous sclerosis complex (Charles Nelson)	Sambuddha Chattopadhyay , Physics and Mathematics, Toward an 841 nm laser cooling system for an erbium quantum gas microscope (Markus Greiner)



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Tuesday, August 7, 2018

Date/Location in Vanserg Hall	3:00pm-3:18pm	3:20pm-3:38pm	3:40pm-3:58pm	4:00pm-4:18pm	4:20pm-4:38pm	4:40pm-4:58pm	5:00pm-5:18pm
Tuesday, 8/7 Room 211 Introducer: Claire Rushin	Karen Reyes , Molecular and Cellular Biology, The effect of Smyd1 on sarcomere in neonatal cardiomyocytes (Richard Lee)	Ozchi Osuoha , Human Developmental and Regenerative Biology, Identifying pathways that function in connective tissue attachment maintenance and healing, (Jenna Galloway)	Polly Gabrieli , Molecular and Cellular Biology, Altruism and autism (Ziv Williams)	Katelyn Li , Neurobiology, Assessing the role of SKA2 in stress-related psychiatric disorders, (Kerry Ressler)	Leo Garcia , Sociology, Screening for potential mutations in <i>DLK1</i> associated with central precocious puberty, (Ursula Kaiser)	Isabella Colocci , Integrative Biology, Spatially high resolution analysis of microbes in sediment (Peter Girguis)	Andrea Rodriguez-Marin Freudmann , Mechanical Engineering, Developing a hydrogen-specific <i>in-situ</i> mass spectrometer (Peter Girguis)
Tuesday, 8/7 Room 213 Introducer: Olivia Velasquez	Lincoln Sorscher , Organismic and Evolutionary Biology, The biomechanics of leg extension in jumping spiders, (Paul Shamble)	Brandi Moore , Human Evolutionary Biology, Exploring the effects of wine polyphenols on the gut microbiota (Rachel Carmody)	El-Abtah Mohamed , Neuroscience, SCD1 as a novel therapeutic vulnerability in GBM, (Christian E. Badr)	Rachelle Ambroise , Chemical and Physical Biology, Examining cardiomyocyte signaling pathways using <i>in vivo</i> proximity labeling (William T. Pu)	Wesley Shin , Chemistry, Predictive value of magnetic resonance spectroscopy during anti-angiogenic treatment of glioblastomas (Eva Ratai)	Mushtaq Ali , Integrative Biology, Long-term microbiome changes due to xenobiotics in <i>Nasonia vitripennis</i> (Robert Brucker)	Francesca Noelette , Molecular and Cellular Biology, Maternal vaccination to boost neonatal immunity, (Galit Alter)
Tuesday, 8/7 Room 215 Introducer: Sean Gibney	Brian Marinelli , Physics, Electronic transport in multiple terminal Josephson junctions (Prof. Philip Kim)	Niki Young , Human Evolutionary Biology, Cortisol, testosterone, and online dating rejection, (Max Krasnow)	Soore Oguntuyo , Bioengineering, Chondrocyte invasion into RGD-modified PTFE meshes (David Mooney)	Michelle Walsh , Bioengineering, Biodegradable polyurethane links for 3D-printing tympanic membrane grafts (Jennifer Lewis)	Michelle Koh , Molecular and Cellular Biology, Investigating the role of glutathione synthesis in adult organ homeostasis in mice (Joan Brugge)	Alexandra Fehnel , Biomedical Engineering, Synthesis, modification and characterization of nanoparticles for red blood cell attachment (Samir Mitragotri)	Stephen Casper , Integrative Biology, Toward a scalable strategy for human genome recoding (George Church)
Tuesday, 8/7 Room 217 Introducer: Emma Clerx	Bethlehem Lulseged , Human Developmental and Regenerative Biology, Anti-PD-L1 and targeted therapies as a treatment option for triple-negative breast cancer, (Kornelia Polyak)	Emily López , Molecular and Cellular Biology, Finding the causal SNP of type II diabetes (Alexander Banks)	Ben Rhee , Molecular and Cellular Biology, Characterizing the proviral landscape of HIV-1 elite controllers (Xu Yu)	Do Hyun Kim , Biomedical Engineering, Schwann cell reprogramming for peripheral nerve injury: Assessing the effects of alternatively-activated Schwann cells (Cathryn Sundback)	Camille Bean , Physics, Strontium titanate preparation for thin-film iron selenide growth, (Jenny Hoffman)	Shyam Narayanan , Mathematics, Pairwise independent random walks can be slightly unbounded (Jelani Nelson)	Siva Emani , Biomedical Engineering, Plasmid engineering for probiotic bacteria (Neel Joshi)



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Wednesday, August 8, 2018

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Wednesday, 8/8 Room 210 Introducer: Madeleine Granovetter	Caleb Heuvel-Horwitz , Physics, An investigation of a successful Doppler cooling scheme for molecules (Susanne Yelin)	Emily Dich , Computer Science and Folklore and Mythology, physiological synchrony using GSR: AR visualizations (Bertrand Schneider)	Zachary Yedidia , Computer Science, Transactional data structures (Eddie Kohler)	Aleeza Shakeel , Neurobiology, The role of the hippocampus in dopamine ramping during spatial navigation (Naoshige Uchida)	Meriton Ibrahim , Applied Mathematics, Improving brain tumor characterization and management with precision medicine tools (Wenya Bi)	Tori Tong , Neurobiology, The evolution of defensive behaviours in response to visual stimuli in deer mice (Hopi Hoekstra)	Madeline Bernstein , Physics, Machine learning techniques in neutrino detection (Roxanne Guenette)
Wednesday, 8/8 Room 211 Introducer: Calder Miller	Arjun Mirani , Physics and Mathematics, Investigation of the optical and spin properties of tin-vacancy (SnV-) quantum emitters in diamond (Marko Loncar)	Pratap Singh , Applied Mathematics, Arctic air suppression and extreme cold events in a warm climate (Eli Tziperman)	Brandon Duffy , Integrative Biology, Role of C-type natriuretic peptide in suppressing VEGF-mediated angiogenesis in diabetic retinopathy (Leo Kim)	Eric Zhou , English and Comparative Literature, Employing locally generated DNA damage to probe 3D genome architecture (Brian Liao)	Jacquelyn Ho , Physics, Determining the configurations of colloidal particles under depletion forces and electric fields (Vinothan Manoharan)	Simon Shen , Chemistry and Physics, Developing a high-affinity binding interaction between the anthelmintic Bt protein Cry5B and the nematode cadherin CDH-8 (David Liu)	Lilian Magermans , Mechanical Engineering, Understanding the mechanics of coalescing water droplets on lubricated surfaces (Joanna Aizenberg)
Wednesday, 8/8 Room 213 Introducer: Steffan Paul	Margaux Winter , Chemistry, Implications of <i>Epipremnum aureum</i> and <i>Quercus rubra</i> on OVOC uptake and emissions (Frank Keutsch)	Hilina Woldemichael , Molecular and Cellular Biology, Production and catabolism of essential micronutrients by gut bacteria in relation to childhood malnutrition (Emily Balskus)	Ben Barrett , Applied Mathematics, End-to-end training for supervised topic models (Finale Doshi-Velez)	Kevin Bao , Organismic and Evolutionary Biology, A broader geographical look at malaria parasite evolution (Dan Hartl)	Angela Kim , Neurobiology, EEG signatures of sevoflurane general anesthesia in children age 0 to 3 years (Charles Berde)	Joanna Tao , Neuroscience, Identification of healthy and pathological behaviors using machine learning (Justin Baker)	Lourdes Kaufman , Human Evolutionary Biology, Barefoot versus shod: How footwear affects the anatomy and walking biomechanics of the longitudinal arch (Daniel Lieberman)
Wednesday, 8/8 Room 214 Introducer: Vaibhav Mohanty	Matt Farber , Human Evolutionary Biology, The beneficial effects of exercise in murine models of colitis (Richard Hodin)	Michelle Onyekaba , Neurobiology, Identifying downstream targets of presenilin (Jie Shen)	Ralph Estanboulieh , Chemical and Physical Biology, Selection of nanobodies against pancreatic cancer antigens using phage display panning (Hidde Ploegh)	Rajath Salegame , Chemistry and Physics, Optogenetically mapping electrical patterns in tissues (Adam Cohen)	Trang Truong , Molecular and Cellular Biology, CYP27b1 gene expression in renal proximal tubule epithelial cells response to parathyroid hormone (Marc Wein)	Daniel Fernandez , Physics and Math, Characterizing linewidth differences between the first-order raman active photon frequency of annealed and unannealed diamonds (Isaac Silvera)	Brian Warner , Physics and Math, Squeezed light from a spin-squeezed superradiant atomic ensemble (Susanne Yelin)
Wednesday, 8/8 Room 215 Introducer: Claire Rushin	Orgilmaa Munkhbaatar , Neurobiology, Childhood maltreatment and postpartum depression (Martin Teicher)	Carter Nakamoto , Chemical and Physical Biology, Optimization of the minimalist tag synthesis (Christina Woo)	Daniel Lu , Physics and Philosophy, DNA Polymerization influences the homology dependent stability of strand exchange products (Mara Prentiss)	Beverly Ge , Environmental Science and Engineering, Estimating drinking water contamination by poly- and perfluoroalkyl substances among domestic well-water uses in New Hampshire (Elsie Sunderland)	Charlie Colt-Simonds , Electrical Engineering, Sensing garment to combat infant mortality by monitoring vitals and encouraging kangaroo care (Conor Walsh)	Anahita Iyer , Neurobiology, Investigating modifiers of alpha-synuclein toxicity in Parkinson's disease (Dennis Selkoe)	Winston Michalak , Electrical Engineering, Permeability and stability tests for flow battery cell membranes (Michael Aziz)
Wednesday, 8/8 Room 217 Introducer: Olivia Velasquez	Jambay Kinley , Computer Science, Infinite analogical model: A probabilistic model for analogical inference (Sam Gershman)	James Niffenegger , Mechanical Engineering, A new electrochemical method of CO ₂ capture (Michael Aziz)	Sabrina Chern , Chemistry and Physics, Towards stable ohmic contacts for MoSe ₂ (Philip Kim)	Caroline Wechsler , History and Science, A genome-scale CRISPR screen optimization for synergy with CDK4/6 inhibitors in Ewing sarcoma and neuroblastoma (Kimberly Stegmaier)	Pablo Reimers , Neurobiology, Neural morphological correlates to behavioral modulation (Ben de Bivort)	Courtney Lewis , Molecular and Cellular Biology, Global maternal and child health projects (Grace Chan)	Yanni Cho , Neurobiology, SRGAP2 regulates critical period timing (Takao Hensch)