Poster Session

Location: Beckman Institute Courtyard

3:45 - 5:00 PM  Mohammad Arbab  
Heather and Paul Haaga  
SURF Fellow  
Using Machine Learning to Classify Trees  
Mory Gharib  
Hans W. Liepmann Professor of Aeronautics and Medical Engineering  
Julian Hummel  
Postdoctoral Scholar Research Associate in Aerospace

3:45 - 5:00 PM  Nishka Arora  
William Hassenzahl Family  
SURF Fellow  
Interaction-aware Trajectory Planning Using Linear Quadratic Regulator  
Daniela Rus  
Andrew (1956) and Erna Vitermi Professor of Computer Science, Massachusetts Institute of Technology  
Soon-Jo Chung  
Bren Professor of Control and Dynamical Systems; Senior Research Scientist, JPL

3:45 - 5:00 PM  Sebastian Banuelos  
Kevin and Susan Crook  
SURF Fellow  
Effect of Porosity in Vortex Ring Formation Time Scales  
Mory Gharib  
Hans W. Liepmann Professor of Aeronautics and Medical Engineering  
Scott A. Bollt  
Graduate Student in Aerospace

3:45 - 5:00 PM  Diego F. Barcenas  
Using Variability of Emission to Determine Presence of Black Holes in Galaxies  
George Helou  
Research Professor of Physics; Executive Director of IPAC  
Frank J. Masci  
Scientific Researcher in IPAC

3:45 - 5:00 PM  Bryan C. Burnell  
Saul and Joan Cogen Memorial  
SURF Fellow  
Robotic Optical Ammonia Detection-Materials Acceleration Platform  
John Gregoire  
Research Professor of Applied Physics and Materials Science  
Ryan Jones  
Mechanical and Systems Engineer With LISA

3:45 - 5:00 PM  David A. Castillo  
Dr. Alan K. Marumoto  
SURF Fellow  
Transforming Metal-Organic Materials Into Wide Band Gap Semiconductors and Metals by Using Direct Write Electron Beam Lithography  
Axel Scherer  
Bernard A. Neches Professor of Electrical Engineering, Applied Physics, and Physics; Merkin Institute Professor  
Muhammad Jilani  
Graduate Student in Medical Engineering
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<th>Time</th>
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<th>Title</th>
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</table>
| 3:45 - 5:00 PM | **Kyla S. Cook**               | Stability of Shock-Induced Separated Flow (SWBLI)                                                                                      | Chih-Yung Wen  
Professor of Aeronautical Engineering, Hong Kong Polytechnic University 
Tim E. Colonius  
Frank and Ora Lee Marble Professor of Mechanical Engineering and Medical Engineering |
| 3:45 - 5:00 PM | **Sophia R. Dalfonzo**         | mRNA Targets of miRNA-190b in Ovarian Cancer                                                                                           | Stefan Sigurdsson  
Professor of Biochemistry and Molecular Biology, University of Iceland 
Linda Vidarsdottir  
Postdoctoral Researcher in Medicine, University of Iceland |
| 3:45 - 5:00 PM | **Sreemanti Dey**              | Score-Based Diffusion Models for Photoacoustic Tomography Image Reconstruction                                                           | Katherine L. Bouman  
Assistant Professor of Computing and Mathematical Sciences, Electrical Engineering, and Astronomy; Rosenberg Scholar; Investigator, Heritage Medical Research Institute 
Berthy Feng  
Graduate Student in Computing and Mathematical Sciences |
| 3:45 - 5:00 PM | **Marama M. Diaz-Asper**       | Modeling the Aging Eye: A Matlab Based Analysis of the Geometric Properties of the Zebrafish Eye                                      | Paul Donaldson  
Head of School of Medical Sciences; Professor of Physiology, University of Auckland 
Justin S. Bois  
Teaching Professor of Biology and Biological Engineering |
| 3:45 - 5:00 PM | **Elizabeth J. Field**         | Analysis of the Higgs Boson Pair Decay Channel in Final States With Two Bottom Quarks and Two Photons in Proton-Proton Collisions in CMS at the Large Hadron Collider | Harvey B. Newman  
Professor of Physics 
Irene Dutta  
Research Associate at Fermilab |
| 3:45 - 5:00 PM | **Nerissa A. Finnen**          | Characterizing the Influence of Ascarosides on Ins-6 Expression in ASJ                                                                    | Paul W. Sternberg  
Bren Professor of Biology 
Mark Zhang  
Graduate Student in Biology |
| 3:45 - 5:00 PM | **Jessie L. Gan**              | Mousify: Fast Structure Calculation for Thermostability Validation                                                                        | Stephen L. Mayo  
Bren Professor of Biology and Chemistry 
Lucas J. Schaus  
Graduate Student in Biochemistry and Molecular Biophysics |
3:45 - 5:00 PM  
**Adishree S. Ghatare**
Stanley and Chenmei Hsu
SURF Fellow

Latent Diffusion Models for Controllable Generation of Piano Music

Yisong Yue  
Professor of Computing and Mathematical Sciences

Yujia Huang  
Graduate Student in Electrical Engineering

3:45 - 5:00 PM  
**Victor Gomez**

A Photosensor for the Fast Component of Barium Fluoride Scintillation Light

David G. Hitlin  
Professor of Physics

James Oyang  
Guest in Physics

Jason M. Trevor  
Assistant Research Engineer in High Energy Physics

3:45 - 5:00 PM  
**Claire L. Hays**
Kevin and Susan Crook
SURF Fellow

Treatment of Bladder Cancer With Bubble-Powered Microrobots

Wei Gao  
Assistant Professor of Medical Engineering; Investigator, Heritage Medical Research Institute; Ronald and JoAnne Willens Scholar

Hong Han  
Graduate Student in Medical Engineering

3:45 - 5:00 PM  
**Hana Hisamune**
Karen Roberts and Jim Sagawa
SURF Fellow

Electrolessly Plated and Low-Temperature Annealed Ohmic Contacts to n-type GaAs for Low-Cost GaAs Solar Cells

Harry A. Atwater  
Howard Hughes Professor of Applied Physics and Materials Science

Phil Jahelka  
Staff Scientist in Applied Physics and Materials Science

3:45 - 5:00 PM  
**Elinor J. Holland**

Utilizing Plasmid Machinery to Improve Syn61

Kaihang Wang  
Assistant Professor of Biology and Biological Engineering

Jolena Zhou  
Graduate Student in Chemical Engineering

Jianyi Huang  
Graduate Student in Bioengineering

3:45 - 5:00 PM  
**Jennifer Y. Hu**
Rossum Family SURF Fellow

Mice in Manhattan: Navigation, Rapid Learning, and Memory in a Reconfigurable Maze

Markus Meister  
Anne P. and Benjamin F. Biaggini Professor of Biological Sciences

Jieyu Zheng  
Graduate Student in Neurobiology

3:45 - 5:00 PM  
**Mehul Jangir**
Sung-Hsien Chen Shih
SURF Fellow

Weathering of Ultramafic Rocks and Formation of Magnesite: Major Element Mass-Balance From Source to Sink

Theodore M. Present  
Associate Scientific Researcher in Geology and Geochemistry

Suryendu Bhattacharjee  
Graduate Student in Geochemistry
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<tr>
<td>3:45 - 5:00 PM</td>
<td>Joseph H. Kim</td>
<td>Facial Expressions in Mice</td>
<td>David J. Anderson</td>
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<td></td>
<td><strong>Rossum Family SURF Fellow</strong></td>
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<td>Seymour Benzer Professor of Biology; Investigator, Howard Hughes Medical Institute</td>
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<td>Amit Vinograd Postdoctoral Scholar Fellowship Trainee in Biology and Biological Engineering; Associate, Howard Hughes Medical Institute</td>
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<td>3:45 - 5:00 PM</td>
<td>Umran S. Koca</td>
<td>Observational Signature of a Massive Neutral Gas Reservoir in the Intracluster Medium of a Galaxy Cluster at z=5.4</td>
<td>Kasper E. Heintz Assistant Professor of Astronomy, Niels Bohr Institute, University of Copenhagen</td>
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<td><strong>J. Weldon Green SURF Fellow</strong></td>
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<td>Melany L. Hunt Dotty and Dick Hayman Professor of Mechanical Engineering</td>
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<td>3:45 - 5:00 PM</td>
<td>Shrujana S. Kunnam</td>
<td>Early Detection of Alzheimer's Disease in Non-Symptomatic Older Adults: Identifying Potential Biomarkers Using Subliminal Processing Paradigms</td>
<td>Shinsuke Shimojo Gertrude Baltimore Professor of Experimental Psychology</td>
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<td><strong>J. Weldon Green SURF Fellow</strong></td>
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<td>Lara Krisst Postdoctoral Scholar in Biology</td>
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<td>3:45 - 5:00 PM</td>
<td>Ryan J. Leal</td>
<td>Appearance of Entropy in the Growth of Cardinalities of Orbits of Flags</td>
<td>Juan Pablo Vigneaux Ariztia Olga Taussky and John Todd Instructor in Mathematics</td>
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<td>3:45 - 5:00 PM</td>
<td>Sarah Yuan Ni Liaw</td>
<td>Scalable Learning of Non-Gaussian Graphical Models</td>
<td>Ricardo Baptista von Kármán Instructor in Computing and Mathematical Sciences</td>
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<td>3:45 - 5:00 PM</td>
<td>Antônio Victor Machado de Oliveira</td>
<td>Assessing Cell Motility of Escherichia coli Using the Subtractive Photonics Process in 180 nm CMOS</td>
<td>Ali A. Hajimiri Bren Professor of Electrical Engineering and Medical Engineering</td>
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<td><strong>Stephen Adelman Memorial SURF Fellow</strong></td>
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<td>Debjit Sarkar Graduate Student in Electrical Engineering</td>
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<td>3:45 - 5:00 PM</td>
<td>Julian E. Millan</td>
<td>Designing an Optimized Robotic Ankle for a Bipedal Robot</td>
<td>Aaron D. Ames Bren Professor of Mechanical and Civil Engineering and Control and Dynamical Systems</td>
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<td><strong>Larson Scholar</strong></td>
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<td>Adrian Boedtker Ghansah Graduate Student in Control and Dynamical Systems</td>
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<td>3:45 - 5:00 PM</td>
<td>Mikhail Mints</td>
<td>Physically Informed Machine Learning Emulators of Aerosol Activation Trained on a Lagrangian Particle-Based Model</td>
<td>Tapio Schneider Theodore Y. Wu Professor of Environmental Science and Engineering; Senior Research Scientist, JPL</td>
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<td><strong>Dr. George R. Rosman SURF Fellow</strong></td>
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<td>Anna Jaruga Senior Research Scientist in Environmental Science and Engineering</td>
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3:45 - 5:00 PM  
**Robert B. Morgan**  
Measuring Ice Grain Growth Rate in the Caltech Dusty Plasma Experiment From Size and Wavelength Dependent Laser Extinction  
Paul M. Bellan  
Professor of Applied Physics  
Andre Nicolov  
Graduate Student in Applied Physics

3:45 - 5:00 PM  
**Ramona W. Murugu**  
Nitrogen Fixation via Proton-Coupled Electron Transfer Using a Pyrene-Based Mediator  
Jonas C. Peters  
Bren Professor of Chemistry  
Catherine Romero  
Graduate Student in Chemistry

3:45 - 5:00 PM  
**Shreya Nag**  
A Joint-Sentiment Topic Modeling Approach to Examining the Effect of Social Media Discussions on Gaming Activity  
R. Michael Alvarez  
Professor of Political and Computational Social Science

3:45 - 5:00 PM  
**Andres Nava**  
Analysis of Higgs Boson Pair Production in the Bottom Quark-Antiquark Pair and Two Fully Hadronic Vector Bosons Final State Using Proton-Proton Collision Data in CMS at the Large Hadron Collider  
Harvey B. Newman  
Professor of Physics  
Nan Lu  
David and Ellen Lee Postdoctoral Scholar in Experimental Physics

3:45 - 5:00 PM  
**Paulina M. Naydenkov**  
Impact of Pancreatic Adenocarcinoma on the Duodenum Microbiome in Mouse Models  
Rustem F. Ismagilov  
Ethel Wilson Bowles and Robert Bowles Professor of Chemistry and Chemical Engineering  
Matthew Cooper  
Graduate Student in Biochemistry and Molecular Biophysics

3:45 - 5:00 PM  
**George G. Ore**  
Developing Custom Software for a Miniature Potentiostat With Functionalized Aptamer Based Sensors  
Ellis F. Meng  
Professor of Biomedical Engineering and Electrical and Computer Engineering, University of Southern California  
Alireza Marandi  
Assistant Professor of Electrical Engineering and Applied Physics

3:45 - 5:00 PM  
**Vibha Padmanabhan**  
Electron-Phonon Interactions in the Density Matrix Formalism  
Marco Bernardi  
Professor of Applied Physics, Physics, and Materials Science  
Ivan Maliyov  
KNI Postdoctoral Scholar Research Associate in Applied Physics and Materials Science

3:45 - 5:00 PM  
**Isabella M. Pagano**  
Improving Repeatability in Minimum Autoignition Temperature Testing in Aviation Fuels  
Joseph E. Shepherd  
C.L. "Kelly" Johnson Professor of Aeronautics and Mechanical Engineering  
Charline Fouchier  
Postdoctoral Scholar Fellowship Trainee in Aerospace
3:45 - 5:00 PM  Sophie L. Polidoro  
Frank W. Wood SURF Fellow  
Investigating the Impact of Fluid Accumulation on the Mechanical Properties of 3D Printed Alveoli Models Mimicking Lung Tissue  
Jin Yang  
Assistant Professor of Aerospace Engineering and Engineering Mechanics, University of Texas at Austin  
Kaushik Bhattacharya  
Howell N. Tyson, Sr., Professor of Mechanics and Materials Science

3:45 - 5:00 PM  Juan M. Renteria  
Robert T. Herzog SURF Fellow  
Actuator Communication Attempts for AMBER Lab's Bipedal Robot ADAM  
Aaron D. Ames  
Bren Professor of Mechanical and Civil Engineering and Control and Dynamical Systems

3:45 - 5:00 PM  Aryaki Singh  
Pasadena City College Resnick Sustainability Institute (RSI) WAVE Fellow  
Development of Sustainable Biomaterials From Waste Water Algae Through Compression Molding  
Chiara Daraio  
G. Bradford Jones Professor of Mechanical Engineering and Applied Physics; Investigator, Heritage Medical Research Institute  
Helen Wexler  
Graduate Student in Bioengineering

3:45 - 5:00 PM  Jeff Sun  
The Associates SURF Fellow  
Physics-Informed Neural Operator for Learning Schrödinger Bridges  
Anima Anandkumar  
Bren Professor of Computing and Mathematical Sciences  
Julius Berner  
Postdoctoral Scholar Research Associate in Computing and Mathematical Sciences

3:45 - 5:00 PM  Kieran G. Vlahakis  
Understanding Misclassifications: A Data Science Approach  
Ashish Mahabal  
Lead Computational and Data Scientist, Caltech Center for Data-Driven Discovery  
Asitang Mishra  
Research Data Scientist, JPL

3:45 - 5:00 PM  Kenadi G. Waymire  
The Aerospace Corporation SURF Fellow  
Contract-Based Design of Autonomous Electric Automobiles Using Pacti  
Richard M. Murray  
Thomas E. and Doris Everhart Professor of Control and Dynamical Systems and Bioengineering  
Inigo Incer  
Postdoctoral Scholar Research Associate in Computing and Mathematical Sciences

3:45 - 5:00 PM  Jacob P. Wolmer  
Lester Lees Aeronautics SURF Fellow  
An Analysis of Hydrogen Dissociation and Ionization Rate Constants for Applications in Gas Giant Atmospheric Entry Probe Heating Simulations  
Guillaume Blanquart  
Professor of Mechanical Engineering  
Alex Mori  
Graduate Student in Mechanical Engineering
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<td><strong>Alanna C. Yelland</strong></td>
<td>Eric T. Fung and Julie A. Buckley SURF Fellow</td>
<td>Role of Serotonin in Sleep Behaviors of Zebrafish and Generation of UAS/GAL4 Transgenic Zebrafish Lines</td>
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<td>David Prober</td>
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<td>Grigoris Oikonomou</td>
<td>Staff Scientist in Biology and Biological Engineering</td>
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<td><strong>Alina Zhang</strong></td>
<td>Kirk and Marjory Dawson Family SURF Fellow</td>
<td>Behavior Flexibility and Neural Representations of Humans, Mice, and RL Models in Navigation</td>
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<td>Pietro Perona</td>
<td>Allen E. Puckett Professor of Electrical Engineering</td>
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<td>Rogerio Aristida Guimaraes</td>
<td>Graduate Student in Computation and Neural Systems</td>
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<td><strong>Claire K. Zhang</strong></td>
<td>Richard T. Jones SURF Fellow</td>
<td>Slow Intracellular Calcium Wave Dynamics in Shoot Apical Meristems</td>
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<td>Elliot M. Meyerowitz</td>
<td>George W. Beadle Professor of Biology; Investigator, Howard Hughes Medical Institute</td>
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<td>Ting Li</td>
<td>Associate, Howard Hughes Medical Institute</td>
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<td><strong>Huihao Zhang</strong></td>
<td>The Ohio State University</td>
<td>Provide a GUI and Web Platform for Calculations of SNR and Exposure Time With PSIm and Specsim for TMT-MODHIS and Keck-HISPEC</td>
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<td>Dimitri P. Mawet</td>
<td>David Morrisroe Professor of Astronomy; Senior Research Scientist, JPL</td>
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<td>Ashley Baker</td>
<td>Instrument Scientist in Astrophysics</td>
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