Presentations in Alphabetical Order by Student

Q - Planetary Science and Geochemistry
113 Spalding Lab
1:00 - 1:20 PM

**Hanna M. Adamski**
Yale University
Joseph Rhodes, Jr., WAVE Fellow

The Search for Lunar Trojans Using Non-Symplectic Integration Techniques
Michael E. Brown
Richard and Barbara Rosenberg Professor of Planetary Astronomy

A - Biology
119 Kerckhoff
2:00 - 2:20 PM

**Yusuf M. Adia**
University of Cambridge
Caltech-Cambridge Exchange

Deep Mutational Scanning to Characterise Differences in Binding Epitopes of IgG1 and IgG2 Antibodies Elicited by Vaccination
Pamela J. Bjorkman
David Baltimore Professor of Biology and Bioengineering; Merken Institute Professor Alexander Cohen Postdoctoral Scholar Research Associate in Biology and Biological Engineering

N - Electrical Engineering, Medical Engineering, and Applied Physics
B119 Baxter
3:30 - 3:50 PM

**Nuha K. Akhtar**
Boise State University
KNI SURF-the-WAVE Prize Fellow

Characterization of Thin-Film BaTiO₃ Using Surface Acoustic Waves
Mohammad Mirhosseini
Assistant Professor of Electrical Engineering and Applied Physics Hao Tian IQIM Postdoctoral Scholar Research Associate in Electrical Engineering

U - Physics and Mathematics
107 Downs
2:20 - 2:40 PM

**Nadja Aldarondo Quiñones**
Universidad de Puerto Rico
Recinto de Rio Piedras
WAVE Fellow

Propagation and Polarization Effects of FRB20201124A
E. Sterl Phinney
Professor of Theoretical Astrophysics Dongzi Li Sherman Fairchild Postdoctoral Scholar Research Associate in Astronomy

Poster Session
Hameetman Multipurpose Room
4:00 - 6:00 PM

**Kevin H. Alexander**
University of Massachusetts Amherst

Spin-lattice Relaxation Mechanisms in Nitroxide Free Radicals
Ryan G. Hadt
Assistant Professor of Chemistry Nathanael Kazmierczak Graduate Student in Chemistry

R - Neuroscience, Economics, and Political Science
128 Baxter
1:00 - 1:20 PM

**Jena A. Alsup**
Joanna Wall Muir SURF Fellow

Investigating Greenwashing in Energy Industry Communications Using Natural Language Processing
R. Michael Alvarez
Professor of Political and Computational Social Science

N - Electrical Engineering, Medical Engineering, and Applied Physics
B119 Baxter
2:50 - 3:10 PM

**Parthorn Ammawat**

Realizing Photonic Integrated Circuits on Thin Film Lithium Niobate
Alireza Marandi
Assistant Professor of Electrical Engineering and Applied Physics Ryoto Sekine Graduate Student in Electrical Engineering

Poster Session
Hameetman Multipurpose Room
4:00 - 6:00 PM

**Sahithi Ankireddy**
Arthur E. Lamel Memorial SURF Fellow

Uncovering Structure in Vision-Language Embeddings
Pietro Perona
Allen E. Puckett Professor of Electrical Engineering Laure Delisle Graduate Student in Computing and Mathematical Sciences
Poster Session
Hameetman Multipurpose Room
4:00 - 6:00 PM

Mars M. Arechavala
Howell N. Tyson, Sr., SURF Fellow
Modeling and Experimentation of Cement-based Products for Enhanced Carbon Capture
Melany L. Hunt
Dotty and Dick Hayman Professor of Mechanical Engineering
Ricardo A. Hernandez
Graduate Student in Mechanical Engineering

C - Biology
B133 Baxter
1:00 - 1:20 PM

Valeria S. Arroyo
University of Puerto Rico, Mayagüez
Genentech WAVE Fellow
DRP-1 Independent Fission Factors Involved in Mitophagy
David C. Chan
Harold and Violet Alvarez Professor of Biology
Yogaditya Chakrabarty
Postdoctoral Scholar in Biology and Biological Engineering

T - Physics
103 Downs
1:40 - 2:00 PM

Diana C. Avila Padilla
UNAM and ITAM
Examining Trends Between Supermassive Black Hole Growth and Star Formation in IllustrisTNG Cosmological Simulation
Fiona A. Harrison
Harold A. Rosen Professor of Physics
Joanna Piotrowska-Karpov
Postdoctoral Scholar Research Associate in Physics

A - Biology
119 Kerckhoff
1:40 - 2:00 PM

Deven A. Ayambem
Swarthmore College
Amgen Scholar
Connectomics Approach Predicts Muscle Activity in Drosophila Flight
Michael H. Dickinson
Esther M. and Abe M. Zarem Professor of Bioengineering and Aeronautics
Ivo Ros
Senior Postdoctoral Scholar Research Associate in Biology and Biological Engineering

Poster Session
Hameetman Multipurpose Room
4:00 - 6:00 PM

Miriam Aziz
Columbia University
Amgen Scholar
Development of Molecular Qubit Systems for Quantum Information Science
Theodor Agapie
Professor of Chemistry
Fernando Guerrero
Graduate Student in Chemistry

N - Electrical Engineering, Medical Engineering, and Applied Physics
B119 Baxter
2:00 - 2:20 PM

Pablo Backer Peral
Investigation, Modeling, and Control of Quantum Optoelectronic Circuits and Systems
Ali A. Hajimiri
Bren Professor of Electrical Engineering and Medical Engineering
Volkan Gurses
Graduate Student in Electrical Engineering

Poster Session
Hameetman Multipurpose Room
4:00 - 6:00 PM

Thorfinnur A. Baldvinsson
University of Iceland
Caltech-University of Iceland Exchange
Electrochemical and Thermochemical Testing of Cobalt and Copper Oxides for Electrochemical Hydroformylation
Karthish Manthiram
Professor of Chemical Engineering and Chemistry; William H. Hurt Scholar
Emma Cosner
Graduate Student in Chemistry

O - Environmental Science and Engineering and Geobiology
102 Spalding Lab
1:00 - 1:20 PM

Stella J. Baldwin
University of Southern California Center for Environmental Microbial Interactions (CEMI) WAVE Fellow
Developing FISH Microscopy Techniques in Methanosarcina to Visualize Methanotrophic Archaeal Diversity
Victoria J. Orphan
James Irvine Professor of Environmental Science and Geobiology
Dan Utter
Postdoctoral Scholar Research Associate in Geobiology
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<th>Session</th>
<th>Topic</th>
<th>Speaker(s)</th>
<th>Affiliation(s)</th>
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<tr>
<td>R - Neuroscience, Economics, and Political Science</td>
<td>Using Webcam-based Eye Tracking Technology to Probe Atypical Gaze Behavior in Autism</td>
<td>Ava O. Barbano</td>
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<td>Poster Session</td>
<td>Improving the Symmetric Group Construction in Group-Theoretic Approach to Fast Matrix Multiplication</td>
<td>Thomas F. Baxley</td>
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<td>Poster Session</td>
<td>Studying the Effects of CB5339 as a p97 Pathway Inhibitor on Proteins in the Ubiquitin Pathway of IMR90 Fibroblast Cells</td>
<td>Karina L. Bender</td>
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<td>O - Environmental Science and Engineering and Geobiology</td>
<td>Effect of Bathymetry on the Dynamics of Southern Ocean Subpolar Gyres</td>
<td>Emma Beniston</td>
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<td>T - Physics</td>
<td>Correcting Phonon and Quasiparticle Dynamics in Geant4 Simulation of Kinetic Inductance Detectors</td>
<td>Ruth H. Berkun</td>
<td>Correcting Phonon and Quasiparticle Dynamics in Geant4 Simulation of Kinetic Inductance Detectors</td>
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<td>O - Environmental Science and Engineering and Geobiology</td>
<td>Modeling Non-terminal Cloud Droplets in PySDM</td>
<td>Brady S. Bhalla</td>
<td>Modeling Non-terminal Cloud Droplets in PySDM</td>
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<tr>
<td>B - Biology</td>
<td>Investigating the Migration of p97 Into the Nucleus in K562 Cells Due to Treatment With H2O2</td>
<td>Berglind Bjarnadottir</td>
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**Speakers:**
- Ava O. Barbano
- Thomas F. Baxley
- Karina L. Bender
- Emma Beniston
- Brady S. Bhalla
- Berglind Bjarnadottir
- Ralph Adolphs
- Na Yeon Kim
- Ralph Adolphs
- Chris M. Umans
- Tsui-Fen Chou
- Andrew F. Thompson
- Sunil Golwala
- Tapio Schneider
- Sunil Golwala
- Tapio Schneider
- Tsui-Fen Chou
**P - Geology**
106 Spalding Lab
1:40 - 2:00 PM

**Ambre L. Brabant**
University of Cambridge
Caltech-Cambridge Exchange

Solubility of Water in Sodium Aluminosilicate and Calcium Aluminosilicate Melts
Edward M. Stolper
Judge Shirley Hufstedler Professor of Geology

**D - Chemistry**
147 Noyes
1:40 - 2:00 PM

**Helen M. Brackney**
John Stauffer SURF Fellow

Structural Analysis of MurG Interactions With Substrates, Inhibitors, and MraY
William M. Clemons
Arthur and Marian Hanisch Memorial Professor of Biochemistry

**V - Physics and Mathematics**
269 Downs
3:50 - 4:10 PM

**Michael Bregar**
Timothy Ryan SURF Fellow

Characterization and Design of a Mach-Zehnder Setup for Quantum Frequency Conversion of Ion-Trap Photons to Telecom Wavelengths
Maria Spiropulu
Shang-Yi Ch'en Professor of Physics
Venkata (Raju) Valivarthi
Research Scientist in High Energy Physics

**C - Biology**
B133 Baxter
4:10 - 4:30 PM

**Ella S. Brissett**
Claremont McKenna College
Amgen Scholar

Studying Intracellular Trafficking in Autism and Alzheimer's Using C. elegans
Paul W. Sternberg
Bren Professor of Biology
Alakananda Das
Staff Scientist in Biology and Biological Engineering

**J - Computer Science and Control and Dynamical Systems**
224 Jorgensen
2:20 - 2:40 PM

**Jessica J. Brown**
Olin College of Engineering
Information Science and Technology (IST) Venerable WAVE Fellow

Neural ODE-based Modeling and Control of Dynamical Systems for Robotic Planning
Yisong Yue
Professor of Computing and Mathematical Sciences

**F - Chemical Engineering and Chemistry**
115 Beckman Institute
1:00 - 1:20 PM

**Luis G. Burgos**
University of Puerto Rico, Mayagüez
Southern California Edison WAVE Fellow

Chemoenzymatic Functionalization of Quinolines With Carbene Transferases
Frances H. Arnold
Linus Pauling Professor of Chemical Engineering, Bioengineering, and Biochemistry
Edwin Alfonzo
Postdoctoral Scholar Fellowship Trainee in Chemical Engineering

Poster Session
Hameetman Multipurpose Room
4:00 - 6:00 PM

**Luis G. Burgos**
University of Puerto Rico, Mayagüez
Southern California Edison WAVE Fellow

Chemoenzymatic Functionalization of Quinolines With Carbene Transferases
Frances H. Arnold
Linus Pauling Professor of Chemical Engineering, Bioengineering, and Biochemistry
Edwin Alfonzo
Postdoctoral Scholar Fellowship Trainee in Chemical Engineering

**L - Applied Physics and Materials Science**
B180 Beckman Behavioral Biology
3:10 - 3:30 PM

**Amari Butler**
Harvard University
KNI SURF-the-WAVE Prize Fellow

Epitaxial Growth of Rare-earth Antimonide Thin Films on Atomically Flat Oxide Substrates
Joseph L. Faison
Assistant Professor of Materials Science; William H. Hurt Scholar
Adrian Llanos
Graduate Student in Applied Physics
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<td>107 Downs</td>
<td>4:10 - 4:30 PM</td>
<td>Yiyi Cai</td>
<td>Error Cancellation in Analog Quantum Simulations</td>
<td>John P. Preskill Richard P. Feynman Professor of Theoretical Physics Yu Tong IQIM Postdoctoral Scholar Research Associate in Theoretical Astrophysics</td>
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<tr>
<td>147 Noyes</td>
<td>1:00 - 1:20 PM</td>
<td>John Cao</td>
<td>Spin-labeling Biological Membranes to Probe Interfacial Phenomena</td>
<td>Ryan G. Hadt Assistant Professor of Chemistry Christian Totoiu Graduate Student in Chemical Engineering</td>
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<td>Poster Session</td>
<td>Hameetman Multipurpose Room</td>
<td>John Z. Cao</td>
<td>Joint Reconstruction-Segmentation Using the Bhattacharyya Coefficient</td>
<td>Franca Hoffmann Assistant Professor of Computing and Mathematical Sciences Jeremy Budd Visitor in Computing and Mathematical Sciences</td>
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<td>B180 Beckman Behavioral Biology</td>
<td>1:20 - 1:40 PM</td>
<td>Luis Carretero Lopez</td>
<td>Mechanical Modes in Tethered and Freely Accelerated Lightsails</td>
<td>Harry A. Atwater Howard Hughes Professor of Applied Physics and Materials Science Ramon Gao Graduate Student in Applied Physics Lior Michaeli Postdoctoral Scholar Research Associate in Applied Physics and Materials Science</td>
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<tr>
<td>102 Spalding Lab</td>
<td>2:00 - 2:20 PM</td>
<td>Etienne M. Casanova</td>
<td>Radiative-Convective Equilibrium in the Clima Model for Climate Sensitivity Analysis</td>
<td>Tapio Schneider Theodore Y. Wu Professor of Environmental Science and Engineering; Senior Research Scientist, JPL Zhaoyi Shen Senior Research Scientist in Environmental Science and Engineering</td>
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<td>103 Downs</td>
<td>1:20 - 1:40 PM</td>
<td>Joahan O. Castaneda Jaimes</td>
<td>Identifying Fast X-Ray Transients Over 11 Years of NuStar Data</td>
<td>Murray Brightman NuSTAR Science Operations Specialist</td>
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<td>224 Jorgensen</td>
<td>2:50 - 3:10 PM</td>
<td>Rahul R. Chalamala</td>
<td>Retrieval-Augmented Theorem Proving in Lean</td>
<td>Anima Anandkumar Bren Professor of Computing and Mathematical Sciences Kaiyu Yang Postdoctoral Scholar Research Associate in Computing and Mathematical Sciences</td>
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Matthew A. Chalk
Harvey Mudd College
Creating Superconducting Resonators to Probe Thin-Film Quality

Joseph L. Falson
Assistant Professor of Materials Science; William H. Hurt Scholar
Matthew Libersky
Graduate Student in Applied Physics

Aditi J. Chandrashekar
The Aerospace Corporation
SURF Fellow
Building an Autonomous Testbed for Motion Planning Algorithms on a Modified RC Car

Soon-Jo Chung
Bren Professor of Control and Dynamical Systems; Senior Research Scientist, JPL
John P. Lathrop
Graduate Student in Control and Dynamical Systems

Tsung Hsien Chang
University of California, Los Angeles
Optimizing WIRC+Pol Pipeline and Characterizing Brown Dwarf Circumstellar Disks in the Taurus Molecular Cloud via Near-Infrared Spectropolarimetry

Dimitri P. Mawet
David Morrisroe Professor of Astronomy; Senior Research Scientist, JPL

Jason J. Chen
California State University, Los Angeles
Neutralization, Binding Affinity, and Kinetics of Monoclonal Antibodies Elicited From Sarbecovirus Mosaic RBD Nanoparticles

Stephen L. Mayo
Bren Professor of Biology and Chemistry
Adrian Bahn
Graduate Student in Biochemistry and Molecular Biophysics

Shuang-Shuang Chen
National Taiwan University
BaBar SURF Fellow
Dark Current Estimation in SPHEREx Intensity Mapping

James J. Bock
Professor of Physics; Senior Research Scientist, JPL
Ari J. Cukierman
Postdoctoral Scholar Research Associate in Physics

Andrew K. Choe
Harvard University
Amgen Scholar
The Mechanism of Skd3’s Dual Disaggregase and Foldase Activity

Shu-ou Shan
Altair Professor of Chemistry
Wren Stiefel
Graduate Student in Chemistry
Arpit Gupta
Postdoctoral Scholar Research Associate in Chemistry

Rithika Chunduri
Shoolini University
Optimizing Sample Preparation Protocols for Ca Isotope Analysis of Urine Samples

François Tissot
Assistant Professor of Geochemistry; Investigator, Heritage Medical Research Institute
Rosa Grigoryan
Postdoctoral Scholar Research Associate in Geochemistry
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<td>Thermal Characterization of Silicon Nitride Lightsails</td>
<td>Harry A. Atwater</td>
<td>Howard Hughes Professor of Applied Physics and Materials Science</td>
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<td>Ramon Gao</td>
<td>Graduate Student in Applied Physics</td>
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<td>Howard Hughes Professor of Applied Physics and Materials Science</td>
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<tr>
<td>U - Physics and Mathematics</td>
<td>Measurements of a Quantum Spin Glass</td>
<td>Thomas F. Rosenbaum</td>
<td>President; Professor of Physics</td>
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<td>107 Downs</td>
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<td>Daniel Silevitch</td>
<td>Research Professor of Physics</td>
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<td>Q - Planetary Science and Geochemistry</td>
<td>Exploring Calcium Isotopes Ratios in Urine as a Tracer of Bone Health</td>
<td>François Tissot</td>
<td>Assistant Professor of Geochemistry; Investigator, Heritage Medical Research Institute</td>
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<td>Rosa Grigoryan</td>
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<td>G - Aerospace</td>
<td>Probing Thin-Shell Structure Stability: Efficacy of the 3-D Printing Approach to Optimize Design Parameters</td>
<td>Sergio Pellegrino</td>
<td>Joyce and Kent Kresa Professor of Aerospace and Civil Engineering; Senior Research Scientist, JPL</td>
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<td>133 Guggenheim</td>
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<td>Poster Session</td>
<td>Enhancing Millimeter-Wave Kinetic Inductance Detector Camera Observations Through Statistical Processing</td>
<td>Jack Sayers</td>
<td>Research Professor of Physics</td>
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<tr>
<td>H - Aerospace</td>
<td>Exploring a Range of Sound Frequencies to Create Mucus Flow in the Eustachian Tube</td>
<td>Mory Gharib</td>
<td>Hans W. Liepmann Professor of Aeronautics and Medical Engineering</td>
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<td>Design of Subwavelength Resonators for the Enhancement of Ultrasharp Graphene Photoluminescence</td>
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<td>Arun Nagpal</td>
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<td>A - Biology</td>
<td>Development of a CRISPR/Cas9 Based Knock-in and Knock-out Genome Editing Tool in a Species of Rove Beetles, <em>Dalotia coriaria</em></td>
<td>Joseph Parker</td>
<td>Assistant Professor of Biology and Biological Engineering; Chen Scholar</td>
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| 3:10 - 3:30 PM | O - Environmental Science and Engineering and Geobiology 102 Spalding Lab | Mauricio de Moura Lima  
École Polytechnique  
VURP Fellow | A Globally-calibrated Hillslope Routing Model Based on Recurrent Neural Networks for Use in Land Surface Models | Tapio Schneider  
Theodore Y. Wu Professor of Environmental Science and Engineering; Senior Research Scientist, JPL |
| 2:50 - 3:10 PM | O - Environmental Science and Engineering and Geobiology 102 Spalding Lab | Gerard R. Decker  
Jack and Edith Roberts  
SURF Fellow | Analyzing Sensitivity of an Atmospheric Circulation Model to Stability Functions in Monin-Obukhov Similarity Theory | Tapio Schneider  
Theodore Y. Wu Professor of Environmental Science and Engineering; Senior Research Scientist, JPL |
| 3:50 - 4:10 PM | N - Electrical Engineering, Medical Engineering, and Applied Physics B119 Baxter | Alexander D. Deters  
Yale University | SQUID Noise Spectroscopy: Designing Superconducting Qubits for Environmental Flux Noise Measurement | Oskar J. Painter  
John G Braun Professor of Applied Physics and Physics  
Andreas Butler  
Graduate Student in Applied Physics |
| 1:00 - 1:20 PM | A - Biology 119 Kerckhoff | Curtis S. DeVerinne  
University of Cambridge | Identifying the Role of Arp6 and H2Av in piRNA Cluster Biogenesis | Katalin Fejes Toth  
Research Professor of Biology and Biological Engineering  
Norbert Andrasi  
Postdoctoral Scholar Research Associate in Biology and Biological Engineering |
| 4:30 - 4:50 PM | S - Astrophysics 142 Keck | Rong Du  
Peking University | Discovering Planetary Nebulae With the Census of the Local Universe Hα Emission Line Survey | Shrinivas R. Kulkarni  
George Ellery Hale Professor of Astronomy and Planetary Science |
| 4:00 - 6:00 PM | Poster Session  
Hameetman Multipurpose Room | Wilson N. Duan  
James J. Morgan SURF Fellow | Estimating Stability Function Formulation With Ensemble Kalman Inversion | Tapio Schneider  
Theodore Y. Wu Professor of Environmental Science and Engineering; Senior Research Scientist, JPL  
Akshay Sridhar  
Research Scientist in Environmental Science and Engineering |
| 1:20 - 1:40 PM | A - Biology 119 Kerckhoff | Ana P. Duarte Montano  
Smith College  
Center for Environmental Microbial Interactions (CEMI)  
WAVE Fellow | Immune Response to the Mosaic-8b-mi3 Immunogen in mRNA Pre-immunized Mice | Pamela J. Bjorkman  
David Baltimore Professor of Biology and Bioengineering; Merken Institute Professor  
Jennifer R. Keefe  
Senior Research Scientist in Biology and Biological Engineering |
Ujjawal Dugar  
University of Oxford  
Studying the Explosions of Intracluster Stars  
Shrinivas R. Kulkarni  
George Ellery Hale Professor of Astronomy and Planetary Science  
Yu-Jing Qin  
Postdoctoral Scholar Research Associate in Astronomy

Elsa Matilda Eriksson  
California Polytechnic State University, San Luis Obispo  
Carl F. Braun WAVE Fellow  
Analysis of Intervenors of Potential Fast Radio Burst Host Galaxies Through Spectral Energy Distribution Fitting With Photometry  
Vikram Ravi  
Assistant Professor of Astronomy

Anthony Ayoola O. Fadonougbo  
California State University, Long Beach  
Amgen Scholar  
Reverse Engineering AAV to Understand Its Gene Delivery Pathway in the Blood-Brain Barrier and Central Nervous System  
Timothy F. Shay  
Scientific Director of the CLOVER Center  
Viviana Gradinaru  
Lois and Victor Troendle Professor of Neuroscience and Biological Engineering

Rei Fejzulla  
Wayne State University  
Resnick Sustainability Institute (RSI) WAVE Fellow  
Unlocking the Cyclization of Diazetidomonapyridone Precursors  
Sarah E. Reisman  
Bren Professor of Chemistry  
Stanna Dorn  
Postdoctoral Scholar Fellowship Trainee in Chemistry

Lynn Y. Feng  
Sampson Carlson SURF Fellow  
Channel Selection for Feature-extracted Data From Microelectrode Array Brain-Machine Interfaces  
Azita Emami  
Andrew and Peggy Cherng Professor of Electrical Engineering and Medical Engineering  
Benyamin Hagh  
Graduate Student in Electrical Engineering

Francesca Fernandes  
Stanford University  
Carl F. Braun WAVE Fellow  
Formal Languages and Constructing the Noncommutative Geometry of Icosahedral Quasicrystals  
Matilde Marcolli  
Robert F. Christy Professor of Mathematics and Computing and Mathematical Sciences

Grace M. Fleury  
University of Pittsburgh  
Amgen Scholar  
Photoinduced, Copper-Catalyzed Enantioconvergent C-N Coupling of Nitrogen-Containing Heterocyclic Electrophiles With Nitrogen Nucleophiles  
Gregory C. Fu  
Norman Chandler Professor of Chemistry  
Hyungdo Cho  
Graduate Student in Chemistry

Sara A. Frunzi  
Worcester Polytechnic Institute  
Southern California Edison WAVE Fellow  
Towards Robotic Exoskeleton Multi-Contact Walking via a Gait Library  
Aaron D. Ames  
Bren Professor of Mechanical and Civil Engineering and Control and Dynamical Systems  
Maegan Tucker  
Postdoctoral Scholar Research Associate in Mechanical and Civil Engineering
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<td>P - Geology</td>
<td>106 Spalding Lab</td>
<td>1:20 - 1:40 PM</td>
<td>Rikuto Fukushima</td>
<td>Kyoto University</td>
<td>Physics-Informed Neural Networks for Modeling Slow Slip Events in a 2D Fault</td>
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<td>U - Physics and Mathematics</td>
<td>107 Downs</td>
<td>1:40 - 2:00 PM</td>
<td>Mumtaz Gababa</td>
<td>University of California, Berkeley Facebook WAVE Fellow</td>
<td>Cold Radioactive Molecules for Precision Measurements</td>
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<tr>
<td>M - Mechanical Engineering</td>
<td>135 Gates-Thomas</td>
<td>3:10 - 3:30 PM</td>
<td>Genevieve I. Gandara</td>
<td>Dr. David G. Goodwin SURF Fellow</td>
<td>Analyzing Metal Carbonate Sorbents for Point Source Carbon Capture</td>
</tr>
<tr>
<td>O - Environmental Science and Engineering and Geobiology</td>
<td>102 Spalding Lab</td>
<td>2:20 - 2:40 PM</td>
<td>Kahaan A. Gandhi</td>
<td>Haverford College</td>
<td>Analyzing Large-Scale Circulation in the CliMA Aquaplanet Simulation and Its Sensitivity to SST and Resolution</td>
</tr>
<tr>
<td>H - Aerospace</td>
<td>121 Beckman Institute</td>
<td>1:00 - 1:20 PM</td>
<td>Michael L. Garcia</td>
<td>Columbia University in the City of New York VURP Fellow</td>
<td>Numerically Consistent Artificial Neural Network-Augmented Subgrid-Scale Model for Large-Eddy Simulation</td>
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<tr>
<td>Poster Session</td>
<td>Hameetman Multipurpose Room</td>
<td>4:00 - 6:00 PM</td>
<td>Jabri Garcia-Jimenez</td>
<td>The Aerospace Corporation SURF Fellow</td>
<td>Investigating Subsidence Associated With Anthropogenic Activity Over Riyadh Using InSAR</td>
</tr>
<tr>
<td>Poster Session</td>
<td>Hameetman Multipurpose Room</td>
<td>4:00 - 6:00 PM</td>
<td>Miles Gee</td>
<td></td>
<td>Simulating Seismic Ocean Tomography on the Max Planck Institute for Meteorology Grand Ensemble</td>
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<td>A - Biology</td>
<td>119 Kerckhoff</td>
<td>Madelyn S. Gilbert</td>
<td>Laurence J. Stuppy SURF Fellow</td>
<td>Vertebrate Sleep Regulation With Zebrafish Models</td>
<td>David Prober  Professor of Biology, Jasmine S. Emtage Graduate Student in Biology</td>
</tr>
<tr>
<td></td>
<td>4:10 - 4:30 PM</td>
<td>Elizabeth Giman</td>
<td>Yale University</td>
<td>Disentangling a New Compton-thick AGN From a Serendipitous Quasar Using Broadband X-ray Spectral Modelling</td>
<td>Fiona A. Harrison Harold A. Rosen Professor of Physics</td>
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<tr>
<td>Poster Session</td>
<td>Hameetman Multipurpose Room</td>
<td>4:00 - 6:00 PM</td>
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<tr>
<td>P - Geology</td>
<td>106 Spalding Lab</td>
<td>Asiah L. Giuntoni</td>
<td>University of California, Berkeley Resnick Sustainability Institute (RSI) WAVE Fellow</td>
<td>Constraining the Capacity of Sediments to Carry Organic Carbon in Arctic Rivers</td>
<td>Michael P. Lamb  Professor of Geology, Yutian Ke Postdoctoral Scholar Research Associate in Geochemistry</td>
</tr>
<tr>
<td></td>
<td>2:20 - 2:40 PM</td>
<td>Nika Gladkov</td>
<td>University of California, Los Angeles Amgen Scholar</td>
<td>Structural and Biochemical Characterization of Alvinella pompejana Nucleoporins</td>
<td>André Hoelz Mary and Charles Ferkel Professor of Chemistry and Biochemistry</td>
</tr>
<tr>
<td></td>
<td>2:00 - 2:20 PM</td>
<td>Emiliano A. Gonzalez</td>
<td>California State Polytechnic University, Pomona Southern California Edison WAVE Fellow</td>
<td>Mapping and Interpreting the Formation of Martian Depositional Rivers</td>
<td>Michael P. Lamb  Professor of Geology, Abdallah Bakri Postdoctoral Scholar Fellowship Trainee in Geology</td>
</tr>
<tr>
<td>E - Chemistry</td>
<td>153 Noyes</td>
<td>Jacob R. Goldman</td>
<td>Citadel Global Fixed Income SURF Fellow</td>
<td>GPU Optimization for Parameter Estimation in the Attentional Drift Diffusion Model</td>
<td>Antonio Rangel Bing Professor of Neuroscience, Behavioral Biology, and Economics Zeynep Enkavi Visitor in Biology and Biological Engineering</td>
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<td></td>
<td>2:20 - 2:40 PM</td>
<td>Samuel P. Goodman</td>
<td>Carl F. Braun SURF Fellow</td>
<td>On the Computation of the Functor $\mathbb{C}^+{-};\mathbb{bb}(P)\mathbb{S}$ for Local Integer Rings</td>
<td>Matthias Flach  Professor of Mathematics</td>
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<td></td>
<td>1:00 - 1:20 PM</td>
<td>Charvi Goyal</td>
<td>Galaxy Quenching in FIRE-3 by AGN Cosmic Ray Feedback</td>
<td>Philip F. Hopkins Ira S. Bowen Professor of Theoretical Astrophysics</td>
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<tr>
<td>R - Neuroscience, Economics, and Political Science</td>
<td>128 Baxter</td>
<td>2:20 - 2:40 PM</td>
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<td>2:20 - 2:40 PM</td>
<td>Wendy Granados Razo</td>
<td>John Stauffer SURF Fellow</td>
<td>A Novel 2H-1-Benzopyran Mechanophore Derived From Carbazole</td>
<td>Maxwell J. Robb Assistant Professor of Chemistry Yan Sun Graduate Student in Chemistry</td>
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<td></td>
<td>3:30 - 3:50 PM</td>
<td>Sanya Gupta</td>
<td>Barnard College of Columbia University</td>
<td>Modelling the Reflection Spectra of the Black Hole X-ray Binary GX 339-4 From Its 2021 Outburst</td>
<td>Fiona A. Harrison Harold A. Rosen Professor of Physics Shina Adegoke Postdoctoral Scholar Research Associate in Physics</td>
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<td>Location</td>
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| I - Computer Science 109 Jorgensen 2:20 - 2:40 PM | **Ashug K. Gurijala**  
*Carl F. Braun SURF Fellow* | Joint Reconstruction-Segmentation Using Graph-Based Methods | Franca Hoffmann  
*Assistant Professor of Computing and Mathematical Sciences*  
Jeremy Budd  
*Visitor in Computing and Mathematical Sciences* |
| B - Biology B125 Baxter 3:50 - 4:10 PM | **Christoph M. Häfelfinger**  
*University of Basel* | Assessing Environmental Factors on Preimplantation Development Using a Stem Cell Embryo Model | Magdalena D. Zernicka-Goetz  
*Bren Professor of Biology and Biological Engineering*  
Sergi Junyent  
*Postdoctoral Scholar Research Associate in Biology and Biological Engineering* |
| F - Chemical Engineering and Chemistry 115 Beckman Institute 3:30 - 3:50 PM | **Tiba H. Hamza**  
*Reed and Ruth Brantley SURF Fellow* | Design of Hydrogels Incorporating Acoustic Cavitation-Induced Mechanochemistry | Mikhail G. Shapiro  
*Max Delbrück Professor of Chemical Engineering; Investigator, Howard Hughes Medical Institute*  
Yuxing Yao  
*Postdoctoral Scholar Research Associate in Chemical Engineering* |
| I - Computer Science 109 Jorgensen 1:00 - 1:20 PM | **Pengrui Han**  
*Carleton College* | Exploring Lightweight Debiasing and Enhancing Robustness Through Data Augmentation in Pretrained Language Models | Anima Anandkumar  
*Bren Professor of Computing and Mathematical Sciences*  
Rafal D. Kocielnik  
*Postdoctoral Scholar Research Associate in Computing and Mathematical Sciences* |
| H - Aerospace 121 Beckman Institute 2:20 - 2:40 PM | **Shana L. Hartwick**  
*Pennsylvania State University Information Science and Technology (IST) Venerable WAVE Fellow* | Characterizing a Thruster Array Water Tunnel | Mory Gharib  
*Hans W. Liepmann Professor of Aeronautics and Medical Engineering*  
Sean Devey  
*Graduate Student in Aerospace Engineering* |
| D - Chemistry 147 Noyes 2:50 - 3:10 PM | **Noah S. Hicks**  
*John Stauffer SURF Fellow* | Investigating the Stability of Metal Oxide Protection Layers for Solar Water Splitting Photocathodes | Nathan S. Lewis  
*George L. Argyros Professor and Professor of Chemistry*  
Alexandre Ye  
*Graduate Student in Chemical Engineering* |
| B - Biology B125 Baxter 3:30 - 3:50 PM | **Chi A. Hoang**  
*Citadel Global Fixed Income SURF Fellow* | Querying Protein Interactions Software Package Using Eukaryotic Linear Motif Database | Lior S. Pachter  
*Bren Professor of Computational Biology and Computing and Mathematical Sciences*  
Laura Luebbert  
*Graduate Student in Biology* |
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<th>Time</th>
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<th>Affiliation</th>
<th>Title</th>
<th>Advisor</th>
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</table>
| D - Chemistry 147 Noyes 2:00 - 2:20 PM | **Samuel A. Holloway**  
Jackson State University  
Preer WAVE Fellow | Instrumentation of an Ultrafast EELS Instrument | Scott K. Cushing  
Assistant Professor of Chemistry  
Nicholas J. Heller  
Graduate Student in Chemistry |
| R - Neuroscience, Economics, and Political Science 128 Baxter 3:10 - 3:30 PM | **Qianhui Hong**  
James G. and Elaine Peterson SURF Fellow | Understanding Pupil Response Patterns in Autism | Ralph Adolphs  
Bren Professor of Psychology, Neuroscience, and Biology  
Na Yeon Kim  
Postdoctoral Scholar Research Associate in Neuroscience |
| B - Biology B125 Baxter 2:20 - 2:40 PM | **Ian N. Horsburgh**  
Pomona College  
Amgen Scholar | Optimizing Small Molecule Mitophagy Modulators | Tsui-Fen Chou  
Research Professor of Biology and Biological Engineering  
William M. Rosencrans  
Graduate Student in Biochemistry and Molecular Biophysics |
| C - Biology B133 Baxter 3:50 - 4:10 PM | **Brian Hu**  
Class of '52 70th Reunion SURF Fellow | Accessible and Extensible System for Real-time Animal Tracking and Behavior Quantification | Thanos G. Siapas  
Professor of Computation and Neural Systems  
Jonathan Kenny  
Graduate Student in Computation and Neural Systems |
| J - Computer Science and Control and Dynamical Systems 224 Jorgensen 1:40 - 2:00 PM | **Mark S. Hu**  
Carl F. Braun SURF Fellow | Benchmarking and Advancing SOTA Segmentation on Primates in the Wild | Pietro Perona  
Allen E. Puckett Professor of Electrical Engineering  
Markus Marks  
Postdoctoral Scholar Research Associate in Electrical Engineering |
| K - Computer Science and Applied and Computational Mathematics 100 Powell-Booth 3:10 - 3:30 PM | **Stephen L. Huan**  
Georgia Institute of Technology | Scalable Gaussian Processes for Non-ergodic Earthquake Models | Houman Owhadi  
Professor of Applied and Computational Mathematics and Control and Dynamical Systems  
Grigorios Larrentiadis  
Postdoctoral Scholar Research Associate in Mechanical and Civil Engineering  
Pau Batlle Franch  
Graduate Student in Computing and Mathematical Sciences  
Yifan Chen  
Postdoctoral Scholar Research Associate in Computing and Mathematical Sciences |
| Q - Planetary Science and Geochemistry 113 Spalding Lab 2:20 - 2:40 PM | **Bo-Ruei Huang**  
National Taiwan University  
BoBar SURF Fellow | LunaX Moon Base Simulator: Exploring Lunar Development and Sustainability | Yuk Yung  
Professor of Planetary Science |
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<tr>
<th>Location</th>
<th>Time</th>
<th>Speaker Name</th>
<th>Title</th>
<th>Institution/Position</th>
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<tr>
<td>G - Aerospace</td>
<td>1:00 - 1:20 PM</td>
<td>Fangyao Huang</td>
<td>Creating A Second LEONARDO (LEgs ONboARD drOne) With Updated Components and Revamped Hardware</td>
<td>Soon-Jo Chung, Bren Professor of Control and Dynamical Systems; Senior Research Scientist, JPL</td>
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<td>Dr. Chandler C. Ross SURF Fellow</td>
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<td>Matthew Anderson, Staff Scientist in Computing and Mathematical Sciences</td>
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<tr>
<td>U - Physics and Mathematics</td>
<td>3:30 - 3:50 PM</td>
<td>Jerry Y. Huang</td>
<td>Preventing False Scientific Predictions in Quantum Experiments</td>
<td>John P. Preskill, Richard P. Feynman Professor of Theoretical Physics</td>
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<td>Saul and Joan Cogen Memorial SURF Fellow</td>
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<td>Hsin-Yuan Huang, Graduate Student in Computing and Mathematical Sciences</td>
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<tr>
<td>K - Computer Science and Applied and Computational Mathematics</td>
<td>1:00 - 1:20 PM</td>
<td>Paul Huang</td>
<td>Exploration of the Learning From Hints Paradigm</td>
<td>Yaser S. Abu-Mostafa, Professor of Electrical Engineering and Computer Science</td>
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<td>National Taiwan University BoBar SURF Fellow</td>
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<tr>
<td>K - Computer Science and Applied and Computational Mathematics</td>
<td>1:20 - 1:40 PM</td>
<td>Zachary W. Huang</td>
<td>A Type Checker for Mathematical Proofs Written in LaTeX</td>
<td>Adam Blank, Teaching Professor of Computing and Mathematical Sciences</td>
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<tr>
<td>D - Chemistry</td>
<td>3:10 - 3:30 PM</td>
<td>Kyla N. Hudson</td>
<td>Development of Ca-Isotope Spectrometer for Monitoring of Bone Mineral Density In-Flight</td>
<td>Mitchio Okumura, Professor of Chemical Physics, Termeh Bashiri, Graduate Student in Chemistry</td>
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<td>Mercer University</td>
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<td>Amgen Scholar</td>
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<tr>
<td>Poster Session</td>
<td>4:00 - 6:00 PM</td>
<td>Evelyn Huerta</td>
<td>Gaussian Process Regression With a Random Kernel Produced by a Mondrian Process</td>
<td>Houman Owhadi, Professor of Applied and Computational Mathematics and Control and Dynamical Systems, Ricardo Baptista, von Kármán Instructor in Computing and Mathematical Sciences</td>
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<td>The Associates SURF Fellow</td>
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<tr>
<td>V - Physics and Mathematics</td>
<td>2:20 - 2:40 PM</td>
<td>William F. Hunt</td>
<td>Topological Transport Induced by Coherent Phonons</td>
<td>Gil Refael, Taylor W. Lawrence Professor of Theoretical Physics, Illya Esin, Postdoctoral Scholar Research Associate in Theoretical Physics, Christopher Yang, Graduate Student in Physics</td>
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<td>University of Cambridge Caltech-Cambridge Exchange</td>
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<tr>
<td>Poster Session</td>
<td>4:00 - 6:00 PM</td>
<td>Joonha Hwang</td>
<td>Characterization of Swarming and Collective Behavior in Brine Shrimp (Artemia salina) Populations</td>
<td>John O. Dabiri, Centennial Professor of Aeronautics and Mechanical Engineering, Nina Mohebbi, Graduate Student in Aerospace</td>
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<tr>
<td>Session Time</td>
<td>Location</td>
<td>Poster Title</td>
<td>Presenter Name</td>
<td>Institution(s)</td>
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<td>4:00 - 6:00 PM</td>
<td>Hameetman Multipurpose Room</td>
<td>Investigating the Role of Non-NF2 Genes in Meningioma-Genesis Using Zebrafish</td>
<td>Anushka Irodi</td>
<td>University of Cambridge Caltech-Cambridge Exchange</td>
</tr>
<tr>
<td>2:20 - 2:40 PM</td>
<td>119 Kerckhoff</td>
<td>Comparative Neuroanatomical Analysis of Peripheral and Defense Circuitry in Rove Beetles</td>
<td>Maria G. Jaimes</td>
<td>Indiana University Bloomington Chen Institute BrainWAVE Fellow</td>
</tr>
<tr>
<td>2:20 - 2:40 PM</td>
<td>109 Jorgensen</td>
<td>On a Conjecture on the Values of Psi Correlators</td>
<td>Toyesh K. Jayaswal</td>
<td>Shirley and Carl Larson SURF Fellow</td>
</tr>
<tr>
<td>1:20 - 1:40 PM</td>
<td>100 Powell-Booth</td>
<td>Developing End-user AI Inspection Tools for Large Language and Vision-Text Models</td>
<td>Roy L. Jiang</td>
<td>Larson Scholar</td>
</tr>
<tr>
<td>2:20 - 2:40 PM</td>
<td>142 Keck</td>
<td>Creating an Intuitive XR Space for Efficient 3D Data Inspection and Direct Manipulation Supported by 2D and 3D Interfaces</td>
<td>Samuel G. Johnson-Lacoss</td>
<td>Carleton College</td>
</tr>
<tr>
<td>2:20 - 2:40 PM</td>
<td>142 Keck</td>
<td>Kilonova Light Curves of HD 222925's Progenitor</td>
<td>Ian P. Johnson</td>
<td>Samuel P. and Frances Krown SURF Fellow</td>
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</tbody>
</table>
| **B - Biology**  
B125 Baxter  
4:10 - 4:30 PM | **Jolie W. Jones**  
*Edward W. Hughes SURF Fellow*  
Developing an Inner Cell Mass Model Using Extended Pluripotent Stem Cells and Embryonic Stem Cells  
**Magdalena D. Zernicka-Goetz**  
*Bren Professor of Biology and Biological Engineering*  
*Sergi Junyent*  
*Postdoctoral Scholar Research Associate in Biology and Biological Engineering* |
| **I - Computer Science**  
109 Jorgensen  
2:00 - 2:20 PM | **Bilal Khan**  
*University of Waterloo*  
MineDojo 2: A Minecraft Environment With a Unified Observation and Action Space to Build More Powerful Embodied Agents  
**Anima Anandkumar**  
*Bren Professor of Computing and Mathematical Sciences*  
**Guanzhi Wang**  
*Graduate Student in Computing and Mathematical Sciences* |
| **G - Aerospace**  
133 Guggenheim  
2:50 - 3:10 PM | **Matteo H. Kimura**  
*Brenda and Louis J. Alpinieri SURF Fellow*  
Developing a Secondary LEONARDO (LEgs ONbARD drOne) System  
**Soon-Jo Chung**  
*Bren Professor of Control and Dynamical Systems; Senior Research Scientist, JPL*  
**Sorina Lupu**  
*Graduate Student in Aerospace* |
| **V - Physics and Mathematics**  
269 Downs  
4:10 - 4:30 PM | **Stavros Klaoudatos**  
*Exploring Highly Energetic bbγγ Signatures Under NMSSM at the LHC*  
**Maria Spiropulu**  
*Shang-Yi Ch’en Professor of Physics*  
**Si Xie**  
*Visitor in High Energy Physics* |
| **D - Chemistry**  
147 Noyes  
1:20 - 1:40 PM | **Hermann F. Klein-Hessling Barrientos**  
*University of Colorado Boulder Resnick Sustainability Institute (RSI) WAVE Fellow*  
Magnetic Field Effects on the Electrocatalytic Oxygen Evolution Reactivity of CoPi/CoBi Catalysts for Applications in Sustainable Hydrogen Production and Artificial Photosynthetic Devices  
**Ryan G. Hadt**  
*Assistant Professor of Chemistry*  
**Ruben Mirzoyan**  
*Graduate Student in Chemistry* |
| **F - Chemical Engineering and Chemistry**  
115 Beckman Institute  
2:50 - 3:10 PM | **Rohan R. Kolhe**  
*Richard H. Cox SURF Fellow*  
Devising an Algorithm to Predict Viscoelastic Properties of the Brain From Magnetic Resonance Elastography  
**Mikhail G. Shapiro**  
*Max Delbrück Professor of Chemical Engineering; Investigator, Howard Hughes Medical Institute*  
**Amirhossein Salahshoor**  
*Postdoctoral Scholar Research Associate in Aerospace* |
| **O - Environmental Science and Engineering and Geobiology**  
102 Spalding Lab  
3:30 - 3:50 PM | **Celia Kong-Johnson**  
*Brown University Resnick Sustainability Institute (RSI) WAVE Fellow*  
Position-Specific Carbon Isotope Analysis of Tree Ring Cellulose via Orbitrap Mass Spectrometry  
**Alex L. Sessions**  
*Nico and Marilyn van Wingen Professor of Geobiology*  
**Hannah Dion-Kirschner**  
*Graduate Student in Geobiology* |
Aashutosh Kulakarni Prachet
Stevens Institute of Technology
Mechanical Characterization of Chainmail-inspired Mechanical Metamaterials
Chiara Daraio
G. Bradford Jones Professor of Mechanical Engineering and Applied Physics; Investigator, Heritage Medical Research Institute
Wenjie Zhou
Postdoctoral Scholar Research Associate in Mechanical and Civil Engineering

Alice Kutsyy
Toni and Bob Perpall SURF Fellow
Recyclable Porous Carbon Solids for Oxygen Recovery in Long-Term Space Exploration
Katherine T. Faber
Simon Ramo Professor of Materials Science
Laura Quinn
Graduate Student in Chemistry

Lulu Kwan
John Stauffer SURF Fellow
Progress Toward a Divergent Total Synthesis of the Mitomycins
Brian M. Stoltz
Victor and Elizabeth Atkins Professor of Chemistry; Investigator, Heritage Medical Research Institute
Kevin J. Gonzalez
Graduate Student in Chemistry

Audrey K. Lai
University of California, Los Angeles
Using Machine Learning to Classify Autism From Oculomotor Features
Ralph Adolphs
Bren Professor of Psychology, Neuroscience, and Biology
Na Yeon Kim
Postdoctoral Scholar Research Associate in Neuroscience

Tze King Lam
University of Cambridge, Caltech-Cambridge Exchange
On-chip Sample Interactions in LNOI
Scott K. Cushing
Assistant Professor of Chemistry
Emily Hwang
Graduate Student in Materials Science

Nuren Z. Lara
Mercer University, Amgen Scholar
Progress in the Electrochemical Carboxylation of Alkyl and Aryl Aldehydes
Karthish Manthiram
Professor of Chemical Engineering and Chemistry; William H. Hurt Scholar
Thu Ton
Graduate Student in Chemistry

Jordan A. Lay
University of Cambridge
Cross-Talk and Higher Order Computations in Nuclear Receptors
Michael B. Elowitz
Professor of Biology and Bioengineering; Investigator, Howard Hughes Medical Institute
Yodai Takei
Postdoctoral Scholar Research Associate in Biology and Biological Engineering
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<tr>
<th>Time</th>
<th>Location</th>
<th>Name</th>
<th>Affiliation</th>
<th>Topic</th>
<th>Advisor/Title</th>
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<tr>
<td>3:50 - 4:10 PM</td>
<td>E - Chemistry 153 Noyes</td>
<td>Naiara Lebron Acosta</td>
<td>University of Puerto Rico, Rio Piedras</td>
<td>Accessing Medium-sized Rings via Vinyl Carbocation Intermediates</td>
<td>Hosea Nelson Professor of Chemistry</td>
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<tr>
<td>4:30 - 4:50 PM</td>
<td>E - Chemistry 153 Noyes</td>
<td>Gina Lee</td>
<td>John Stauffer SURF Fellow</td>
<td>Using Supervised Machine Learning to Predict the Regioselectivity of C-H Oxidation Sites in Complex Molecules</td>
<td>Sarah E. Reisman Bren Professor of Chemistry</td>
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<td>Jules Schleinitz Postdoctoral Scholar Research Associate in Chemistry</td>
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<td>4:00 - 6:00 PM</td>
<td>Poster Session Hameetman Multipurpose Room</td>
<td>Mengziang Lei</td>
<td>University of California, Berkeley</td>
<td>Engineering TEV Protease to Increase Auxin Sensitivity in a Macrophage-CAR-T Two Cell Circuit</td>
<td>Michael B. Elowitz Professor of Biology and Bioengineering</td>
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<td>1:20 - 1:40 PM</td>
<td>B - Biology B125 Baxter</td>
<td>Mark J. Lewis</td>
<td>University of California, Los Angeles</td>
<td>Targeted Recombination in Active Populations of Photo-stimulated Neurons: Developing a Functional Label of Subcircuits Within an Aggression Locus</td>
<td>David J. Anderson Seymour Benzer Professor of Biology; Investigator, Howard Hughes Medical Institute Amit Vinograd Postdoctoral Scholar Fellowship Trainee in Biology and Biological Engineering Associate, Howard Hughes Medical Institute</td>
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<td>Chen Institute BrainWAVE Fellow</td>
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<td>1:40 - 2:00 PM</td>
<td>V - Physics and Mathematics 269 Downs</td>
<td>Guanxi Li</td>
<td></td>
<td>Closed Geodesics on Genus 0 Triangular Unitary Shimura Curve</td>
<td>Elena Mantovan Taussky-Todd-Lonergan Professor of Mathematics</td>
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<tr>
<td>2:00 - 2:20 PM</td>
<td>B - Biology B125 Baxter</td>
<td>Xuan Li</td>
<td>Georgetown University</td>
<td>Proteomics Examination and Structural Elucidation and Phospholipase A2 Activating Protein Mutant and Interaction With Valosine-Containing Protein (P97)</td>
<td>Tsui-Fen Chou Research Professor of Biology and Biological Engineering Katelyn M. Radford Graduate Student in Biochemistry and Molecular Biophysics Yanping Qiu Postdoctoral Scholar Research Associate in Biology and Biological Engineering</td>
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<td>VURP Fellow</td>
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<tr>
<td>2:00 - 2:20 PM</td>
<td>Q - Planetary Science and Geochemistry 113 Spalding Lab</td>
<td>Ting-Juan Liao</td>
<td>National Taiwan University</td>
<td>The Abundances of CO, H2O, and OCS in Venus’s Atmosphere From Observations and Modeling</td>
<td>Yuk Yung Professor of Planetary Science Eliot Young Principal Scientist, Southwest Research Institute</td>
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<td>BaBar SURF Fellow</td>
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<tr>
<td>3:10 - 3:30 PM</td>
<td>B - Biology B125 Baxter</td>
<td>Emily T. Lin</td>
<td>University of California, Los Angeles</td>
<td>Profiling of Synthetic Transcription Factors to Uncover Design Principles of Combinatorial Gene Regulation</td>
<td>Michael B. Elowitz Professor of Biology and Bioengineering Howard Hughes Medical Institute Evan Mun Graduate Student in Bioengineering</td>
</tr>
<tr>
<td>Time</td>
<td>Location</td>
<td>Name</td>
<td>Affiliation</td>
<td>Title</td>
<td>Collaborators</td>
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<td>1:20</td>
<td>Beckman</td>
<td><strong>Ethan N. Lin</strong></td>
<td>Janet Lai SURF Fellow</td>
<td>Regioselective Aryl Amination With Hydroxylamine</td>
<td>Frances H. Arnold, Linus Pauling Professor of Chemical Engineering,</td>
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<tr>
<td></td>
<td>Institute</td>
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<td>Bioengineering, and Biochemistry, Kathleen Sicinski, Postdoctoral Scholar</td>
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<td>Fellowship, Trainee in Chemical Engineering</td>
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<tr>
<td>2:50</td>
<td>Jorgensen</td>
<td><strong>Jonathan Lin</strong></td>
<td>Chung Ip Wing-Wah Memorial SURF Fellow</td>
<td>Utilizing General Vision Language Models for Animal Action Recognition</td>
<td>Pietro Perona, Allen E. Puckett Professor of Electrical Engineering,</td>
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<td>Markus Marks, Postdoctoral Scholar Research Associate in Electrical</td>
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<td>Engineering</td>
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<tr>
<td>1:40</td>
<td>Baxter</td>
<td><strong>Miguel O. Liu-Schiaffini</strong></td>
<td>Mellon Mays SURF Fellow</td>
<td>Tipping Point Forecasting in Non-Stationary Dynamics on Function</td>
<td>Anima Anandkumar, Bren Professor of Computing and Mathematical Sciences,</td>
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<td>Spaces</td>
<td>Zongyi Li, Graduate Student in Computing and Mathematical Sciences</td>
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<tr>
<td>2:50</td>
<td>Baxter</td>
<td><strong>Meryl Liu</strong></td>
<td>Princeton University</td>
<td>Engineering Synthetic Allostery for Phosphorylation-Based Protein</td>
<td>Michael B. Elowitz, Professor of Biology and Bioengineering, Investigator,</td>
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<td>Circuits</td>
<td>Howard Hughes Medical Institute, Dongyang Li, Postdoctoral Scholar Research</td>
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<td>Associate in Biology and Biological Engineering</td>
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<tr>
<td>2:50</td>
<td>Spalding</td>
<td><strong>Zhuo Liu</strong></td>
<td>Lanzhou University</td>
<td>Tracking Erosion and Channel Morphologies of Single-Threaded Rivers</td>
<td>Michael P. Lamb, Professor of Geology, Maria Schmeer, Graduate Student in</td>
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<td></td>
<td>Lab</td>
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<td>in Permafrost Flume Experiments</td>
<td>Geology</td>
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<tr>
<td>2:00</td>
<td>Jorgensen</td>
<td><strong>Yu-Hsiang Lo</strong></td>
<td>National Taiwan University</td>
<td>Whole-Cell Segmentation on Multi-Channel Images Using Self-Attention</td>
<td>Yisong Yue, Professor of Computing and Mathematical Sciences, Uriah Israel,</td>
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<td>BoBar SURF Fellow</td>
<td>Mechanism</td>
<td>Postdoctoral Scholar Fellowship, Trainee in Biology and Biological</td>
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<td>Engineering</td>
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<td>1:00</td>
<td>Baxter</td>
<td><strong>Mina Mandic</strong></td>
<td>Swarthmore College</td>
<td>Understanding the Neural Circuits for Aggression: Drosophila Wing</td>
<td>David J. Anderson, Seymour Benzer Professor of Biology, Howard Hughes</td>
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<td>Chen Institute BrainWAVE Fellow</td>
<td>Threat Behavior</td>
<td>Medical Institute, Shuo Cao, Graduate Student in Biology</td>
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<tr>
<td>1:40</td>
<td>Baxter</td>
<td><strong>Jessica L. Mann</strong></td>
<td>Massachusetts Institute of Technology</td>
<td>Applying a DNA-Encoded Chemical Library to Screen for Selective</td>
<td>Mitchell Guttmann, Professor of Biology, Mackenzie Strehe, Graduate</td>
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<td>Amgen Scholar</td>
<td>Binders of HDAC Isoforms</td>
<td>Student in Biology</td>
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<td>Time</td>
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<tr>
<td>4:30 - 4:50 PM</td>
<td>103 Downs</td>
<td>Michael Manta</td>
<td>Quantum Statistical Systems With Interaction and Continuous Spectra</td>
<td>Matilde Marcolli Robert F. Christy Professor of Mathematics and Computing and Mathematical Sciences</td>
<td></td>
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<tr>
<td>3:10 - 3:30 PM</td>
<td>109 Jorgensen</td>
<td>Ishaan Mantripragada</td>
<td>Improved Deep Learning-Based Reconstruction for 2D Phase Contrast MRI</td>
<td>Shreyas S. Vasanawala Professor of Radiology; Director of MRI, Stanford Children’s Hospital Lior Pachter Bren Professor of Computational Biology and Computing and Mathematical Sciences</td>
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</tr>
<tr>
<td>1:00 - 1:20 PM</td>
<td>106 Spalding Lab</td>
<td>Gabriel-Darius Mardaru</td>
<td>Experimental Determination of the Nitrogen Isotopic Fractionation During Core Formation in Rocky Protoplanets and Planets</td>
<td>Paul D. Asimow Eleanor and John R. McMillan Professor of Geology and Geochemistry Damanveer S. Grewal Postdoctoral Scholar Research Associate in Geochemistry</td>
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<tr>
<td>1:20 - 1:40 PM</td>
<td>121 Beckman Institute</td>
<td>Hambik Margoosian</td>
<td>Advancing Autonomous Underwater Vehicles Through the Innovation of a Robotic Fish Fin Propulsor</td>
<td>Mory Gharib Hans W. Liepmann Professor of Aeronautics and Medical Engineering Meredith Hooper Graduate Student in Aerospace Jean Sebastien Spratt Graduate Student in Aerospace</td>
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<tr>
<td>2:00 - 2:20 PM</td>
<td>128 Baxter</td>
<td>Katherine A. Marquis</td>
<td>Relationships Between Nighttime Light, Economic Variables, and Covid-19 in the United States</td>
<td>Pawel W. Janas Assistant Professor of Economics</td>
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<tr>
<td>2:50 - 3:10 PM</td>
<td>121 Beckman Institute</td>
<td>Arnauld B. Martinez</td>
<td>Bayesian Active Sensing and Planning Applied to Attitude Dynamics and Spacecraft Control</td>
<td>Soon-Jo Chung Bren Professor of Control and Dynamical Systems; Senior Research Scientist, JPL Jimmy Ragan Graduate Student in Aerospace</td>
<td></td>
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<tr>
<td>1:20 - 1:40 PM</td>
<td>107 Downs</td>
<td>John G. Mattson</td>
<td>Asymptotic Growth Rate for the Number of Tilings of a Regular Dodecagon</td>
<td>Nets H. Katz International Business Machines Professor of Mathematics</td>
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<tr>
<td>2:50 - 3:10 PM</td>
<td>100 Powell-Booth</td>
<td>Ethan J. McFarlin</td>
<td>Curating a Retrospective Art Exhibit for the Caltech/JPL Data to Discovery Program</td>
<td>Hillary Mushkin Research Professor of Art and Design Santiago Lombeyda Senior Computational Scientist in the Center for Data-Driven Discovery</td>
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<td>4:00 - 6:00</td>
<td>Cameron M. McNamee</td>
<td>Dr. Jane Chen SURF Fellow</td>
<td>Distinguishing Experimental Groups of Animals Through Unsupervised Learning</td>
<td>Pietro Perona Allen E. Puckett Professor of Electrical Engineering Markus Marks Postdoctoral Scholar Research Associate in Electrical Engineering</td>
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<tr>
<td>4:00 - 6:00</td>
<td>Nadine Meister</td>
<td>Harvard University Information Science and Technology (IST) Venerable WAVE Fellow</td>
<td>Designing an Efficient Decoder for a Novel Quantum Error Correction Scheme</td>
<td>John P. Preskill Richard P. Feynman Professor of Theoretical Physics Christopher Pattison Graduate Student in Physics</td>
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<tr>
<td>1:20 - 1:40</td>
<td>Filipe Andreas Melo</td>
<td>University of California, Los Angeles Genentech WAVE Fellow</td>
<td>Development of a Deep Sea Thermophilic Model Organism for the Study of Large Scale Protein Assemblies</td>
<td>André Hoelz Mary and Charles Ferkel Professor of Chemistry and Biochemistry Joel Ehrenkranz Visiting Associate in Chemistry</td>
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<tr>
<td>4:10 - 4:30</td>
<td>Mira P. Menezes</td>
<td>Samuel P. and Frances Krown SURF Fellow</td>
<td>Kinetic Inductance Detector Analysis and Simulation</td>
<td>Sunil Golwala Professor of Physics Osmond Wen Graduate Student in Physics</td>
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<tr>
<td>4:30 - 4:50</td>
<td>Soraya H. Mercado</td>
<td>Pasadena City College BBE-Cemi WAVE Fellow</td>
<td>Characterization of ins-6 Expression Within the C. elegans Chemosensory System in Response to Ascaroside Input</td>
<td>Paul W. Sternberg Bren Professor of Biology Mark Zhang Graduate Student in Biology</td>
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<tr>
<td>4:00 - 6:00</td>
<td>Jenna C. Meyers</td>
<td>Wellesley College Southern California Edison WAVE Fellow</td>
<td>Deformation and Misorientation Barometer of Experimentally Shocked Olivine: A Micro- to Meso-Scale EBSD Study</td>
<td>Paul D. Asimow Eleanor and John R. McMillan Professor of Geology and Geochemistry Jinping Hu Staff Scientist in Geology and Geochemistry</td>
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<tr>
<td>4:00 - 6:00</td>
<td>Shanya Mishra</td>
<td>École Polytechnique</td>
<td>SQUID as an Amplifier for Sensitive Barkhausen Noise Measurements</td>
<td>Thomas F. Rosenbaum President; Professor of Physics Daniel Silevitch Research Professor of Physics</td>
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<tr>
<td>1:00 - 1:20</td>
<td>Frida M. Moreno</td>
<td>John Stauffer SURF Fellow</td>
<td>Molecular Mechanism of Nucleocytoplasmic Transport of p38α and cGAS</td>
<td>André Hoelz Mary and Charles Ferkel Professor of Chemistry and Biochemistry Chia-Yu Chien Graduate Student in Biochemistry and Molecular Biophysics</td>
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<tr>
<td>1:20 - 1:40</td>
<td>Kenzie M. Mounir</td>
<td>Washington University in St. Louis WAVE Fellow</td>
<td>Building a Spectral Library of Serpentinitization With a Focus on Fe-rich Brucite</td>
<td>Bethany L. Ehlmann Professor of Planetary Science Rebecca Greenberger Lab Manager and Research Scientist in Planetary Science</td>
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</table>
**Poster Session**

**Shivam S. Mundhra**
The University of Chicago
Optimization of Non-Linear Optical Waveguide Parameters to Generate Single-Mode and Spectrally Uncorrelated Photon Pairs
Alireza Marandi
Assistant Professor of Electrical Engineering and Applied Physics
James A. Williams
Graduate Student in Electrical Engineering

**Jack K. Myles**
Formal Compositional Design of an Automobile System Using Pacti and Contracts
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

**Gustav Naucler**
Lund University
Generalization Properties of Deep Learning Models Trained With Regularizer Mirror Descent Using Different Regularizer Functions
Babak Hassibi
Mose and Lillian S. Bohn Professor of Electrical Engineering and Computing and Mathematical Sciences

**Kendra T. Nguyen**
Pomona College
Carl F. Braun WAVE Fellow
Determining the Composition of Earth-Sized Planets in the TOI-406 System
Heather A. Knutson
Professor of Planetary Science
Mike Greklek-McKeon
Graduate Student in Planetary Science

**Ali R. Niazi**
Nellie Bergen and Adrian Foster Tillotson SURF Fellow
Machine Learning-Based Approach to Comparing Gene Variant Detection Methods
Ashish Mahabal
Lead Computational and Data Scientist, Caltech Center for Data-Driven Discovery
Lisa Guan
Planetary Protection Engineer, JPL

**Cecilia E. Ochoa**
Georgetown University
Carl F. Braun WAVE Fellow
Searching for EM Counterparts to Binary Black Hole Mergers in AGN Using LIGO O4
Matthew J. Graham
Research Professor of Astronomy

**Carlos D. Olivas**
Developing Point-Source Carbon Capture
Melany L. Hunt
Dotty and Dick Hayman Professor of Mechanical Engineering
Ricardo A. Hernandez
Graduate Student in Mechanical Engineering

**Jamal J. Omuson**
Carleton College
VURP Fellow
Identifying and Classifying Misinformation About Cryptocurrencies on Twitter
R. Michael Alvarez
Professor of Political and Computational Social Science

**Jamal J. Omuson**
Carleton College
VURP Fellow
Identifying and Classifying Misinformation About Cryptocurrencies on Twitter
R. Michael Alvarez
Professor of Political and Computational Social Science
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<tr>
<th>Location</th>
<th>Time</th>
<th>Poster Title</th>
<th>Speaker Name</th>
<th>Affiliation</th>
<th>Institution</th>
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<tbody>
<tr>
<td>F - Chemical Engineering and Chemistry</td>
<td>2:00 - 2:20 PM</td>
<td><strong>Alexander Y. Ortiz Rivera</strong>&lt;br&gt;University of Puerto Rico, Cayey&lt;br&gt;Resnick Sustainability Institute (RSI) WAVE Fellow</td>
<td>Alkynalated Carbondots as a New Vial for Gene Delivery of Cy3-DNA Into Nicotiana benthamiana Mediated via CuAAC Click Chemistry</td>
<td>Gözde S. Demirer&lt;br&gt;Clare Booth Luce Assistant Professor of Chemical Engineering Jesus Galeana Graduate Student in Chemistry</td>
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<tr>
<td>N - Electrical Engineering, Medical Engineering, and Applied Physics</td>
<td>4:10 - 4:30 PM</td>
<td><strong>Ricky A. Parada</strong>&lt;br&gt;Stanford University</td>
<td>Design of a Qubit Module for High Fidelity State Transfer From Quantum Transducers</td>
<td>Oskar J. Painter&lt;br&gt;John G Braun Professor of Applied Physics and Physics Piero Chiappina Graduate Student in Physics</td>
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<tr>
<td>T - Physics</td>
<td>3:50 - 4:10 PM</td>
<td><strong>John E. Parker</strong>&lt;br&gt;W.H. Halpenny SURF Fellow</td>
<td>Analysis of Quantum Parity Detector Signal and Noise Sources for Phonon Detection</td>
<td>Sunil Golwala&lt;br&gt;Professor of Physics Karthik Ramanathan&lt;br&gt;Troesch Postdoctoral Scholar Research Associate in Physics Matthew J. Graham&lt;br&gt;Research Professor of Astronomy Ashish Mahabal&lt;br&gt;Lead Computational and Data Scientist, Caltech Center for Data-Driven Discovery</td>
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<tr>
<td>S - Astrophysics</td>
<td>2:00 - 2:20 PM</td>
<td><strong>Autumn G. Pearce</strong>&lt;br&gt;Yale University</td>
<td>Exploring the Future of Quantum Machine Learning in Astronomy</td>
<td>Lynne Hillenbrand&lt;br&gt;Professor of Astronomy Adolfo Carvalho&lt;br&gt;Graduate Student in Astrophysics</td>
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</tr>
<tr>
<td>S - Astrophysics</td>
<td>1:40 - 2:00 PM</td>
<td><strong>Facundo A. Perez Paolino</strong>&lt;br&gt;Colgate University</td>
<td>Investigating the Starspot Paradigm of T Tauri Stars in the Taurus-Auriga Star Forming Region</td>
<td>Mikhail G. Shapiro&lt;br&gt;Max Delbrück Professor of Chemical Engineering: Investigator, Howard Hughes Medical Institute Nivin Nasri&lt;br&gt;Postdoctoral Scholar Fellowship Trainee in Chemical Engineering</td>
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<tr>
<td>M - Mechanical Engineering</td>
<td>2:20 - 2:40 PM</td>
<td><strong>Giannka G. Picache</strong>&lt;br&gt;Stanford University&lt;br&gt;Southern California Edison WAVE Fellow</td>
<td>Drag Reduction and Stability Analysis of Biohybrid Robotic Jellyfish Mounts</td>
<td>John O. Dabiri&lt;br&gt;Centennial Professor of Aeronautics and Mechanical Engineering Kelsi M. Rutledge&lt;br&gt;Postdoctoral Scholar Research Associate in Aerospace</td>
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<td>Time</td>
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<td>3:50 - 4:10 PM</td>
<td>S - Astrophysics</td>
<td>142 Keck</td>
<td>Visnaya R. Pillai, University of Hong Kong</td>
<td>Late-time Chandra and eROSITA Observations of X-ray Selected Tidal Disruption Events</td>
<td>Shrinivas R. Kulkarni, George Ellery Hale Professor of Astronomy and Planetary Science, Yuhan Yao, Postdoctoral Scholar Research Associate in Astronomy</td>
</tr>
<tr>
<td>3:50 - 4:10 PM</td>
<td>Poster Session</td>
<td>Hameetman Multipurpose Room</td>
<td>Juni Y. Polansky, Arthur R. Adams SURF Fellow</td>
<td>Characterization of Autism Spectrum Disorder Genes in Zebrash</td>
<td>David Prober, Professor of Biology, Jin Xu, Postdoctoral Scholar Research Associate in Biology and Biological Engineering</td>
</tr>
<tr>
<td>1:00 - 1:20 PM</td>
<td>S - Astrophysics</td>
<td>142 Keck</td>
<td>Evan R. Portnoi, Hannah Bradley SURF Fellow</td>
<td>Looking for Dwarf Carbon Stars Using Low-Resolution Spectra From Gaia DR3 XP Spectra</td>
<td>Kareem J. El-Badry, Assistant Professor of Astronomy</td>
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<tr>
<td>2:20 - 2:40 PM</td>
<td>N - Electrical Engineering, Medical Engineering, and Applied Physics</td>
<td>B119 Baxter</td>
<td>Olivers Pranis, Captain Pradeep B. Sukliker Memorial SURF Fellow</td>
<td>Development of a Coherent Optical Receiver for Fiber Optic Communication Applications</td>
<td>Ali A. Hajimiri, Bhen Professor of Electrical Engineering and Medical Engineering, Samir Nooshabadi, Graduate Student in Electrical Engineering</td>
</tr>
<tr>
<td>1:40 - 2:00 PM</td>
<td>K - Computer Science and Applied and Computational Mathematics</td>
<td>100 Powell-Booth</td>
<td>Xiang Qin, Peking University</td>
<td>Blowup Analysis for the Weak Convection Hou-Li Model</td>
<td>Thomas Y. Hou, Charles Lee Powell Professor of Applied and Computational Mathematics, Yixuan Wang, Graduate Student in Applied and Computational Mathematics</td>
</tr>
<tr>
<td>3:50 - 4:10 PM</td>
<td>R - Neuroscience, Economics, and Political Science</td>
<td>128 Baxter</td>
<td>Sarita Raghunath, University of California, San Diego Amgen Scholar</td>
<td>Probing Neural Correlates of Performance-based Arbitration During Goal-Directed and Habitual Control</td>
<td>John P. O'Doherty, Fletcher Jones Professor of Decision Neuroscience, Vincent Man, Postdoctoral Scholar Research Associate in Neuroscience</td>
</tr>
<tr>
<td>2:50 - 3:10 PM</td>
<td>E - Chemistry</td>
<td>153 Noyes</td>
<td>Eric C. Ramos, College of the Sequoias Resnick Sustainability Institute (RSI) WAVE Fellow</td>
<td>Stabilization of High Oxidation State Complexes for Nickel-Catalyzed Aryl Fluoride Cross-Coupling</td>
<td>Theodor Agapie, Professor of Chemistry, Meaghan Bruening, Graduate Student in Chemistry, Matt R. Espinosa, Postdoctoral Scholar Research Associate in Chemistry</td>
</tr>
<tr>
<td>3:10 - 3:30 PM</td>
<td>T - Physics</td>
<td>103 Downs</td>
<td>Vibhu Ravindran, University of California, Berkeley</td>
<td>Realizing Dualities as Sequential Quantum Circuits</td>
<td>Xie Chen, Professor of Theoretical Physics, Robijn Vanhove, BAEF Postdoctoral Scholar Fellowship Trainee in Theoretical Physics</td>
</tr>
<tr>
<td>Department</td>
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<tr>
<td>P - Geology</td>
<td>106 Spalding Lab</td>
<td>3:30 - 3:50 PM</td>
<td>Martha R. Richmond</td>
<td>University of Cambridge</td>
<td>Testing the Efficacy of Isotopic Clumping Data When Applied to Temperature Dependent Sex in Modern Day Reptiles</td>
</tr>
<tr>
<td>I - Computer Science</td>
<td>109 Jorgensen</td>
<td>3:30 - 3:50 PM</td>
<td>Nilo E. Rivera</td>
<td></td>
<td>Implementing Property-Based Testing in NetworkX</td>
</tr>
<tr>
<td>E - Chemistry</td>
<td>153 Noyes</td>
<td>3:10 - 3:30 PM</td>
<td>Yamilet M. Rivera Cintrón</td>
<td>University of Puerto Rico, Mayagüez Liquid Sunlight Alliance (LISA) WAVE Fellow</td>
<td>PdPtOx Thin Film Catalyst Synthesis for Olefin Epoxidation</td>
</tr>
<tr>
<td>A - Biology</td>
<td>119 Kerckhoff</td>
<td>3:10 - 3:30 PM</td>
<td>Camila Romero</td>
<td>West Virginia University Chen Institute BrainWAVE Fellow</td>
<td>Evolutionary Comparison of Neuromodulatory Systems in Rove Beetle Species</td>
</tr>
<tr>
<td>S - Astrophysics</td>
<td>142 Keck</td>
<td>2:50 - 3:10 PM</td>
<td>Olivia R. Rourke</td>
<td>California Polytechnic State University, San Luis Obispo Carl F. Braun WAVE Fellow</td>
<td>Time-domain Observations at Millimeter Wavelengths Using SPRITE</td>
</tr>
<tr>
<td>M - Mechanical Engineering</td>
<td>135 Gates-Thomas</td>
<td>1:00 - 1:20 PM</td>
<td>Igor Sadalski</td>
<td>Imperial College London</td>
<td>Deep Generative Modeling for Safe Control Using Conditional Variational Autoencoders</td>
</tr>
<tr>
<td>V - Physics and Mathematics</td>
<td>269 Downs</td>
<td>2:50 - 3:10 PM</td>
<td>Omar A. Salas</td>
<td>University of Texas at El Paso Facebook WAVE Fellow</td>
<td>Assembly and Characterization of Neural Probe Systems for Dense Electrophysiological Recordings</td>
</tr>
<tr>
<td>Poster Session</td>
<td>Hameetman Multipurpose Room</td>
<td>4:00 - 6:00 PM</td>
<td>Adhithya Prakash Saravanan</td>
<td>University of Cambridge</td>
<td>Discovering Social Bias in Text-to-Image Models Through Likelihood Estimation</td>
</tr>
</tbody>
</table>
H - Aerospace  
121 Beckman Institute  
2:00 - 2:20 PM

**Jacob W. Schuster**  
*John and Barbara Gee SURF Fellow*  
Bio-inspired Underwater Propulsion: Advancements in Fin Mechanisms  
Mory Gharib  
*Hans W. Liepmann Professor of Aeronautics and Medical Engineering*

N - Electrical Engineering, Medical Engineering, and Applied Physics  
B119 Baxter  
1:20 - 1:40 PM

**Alex Seder**  
*University of California, Los Angeles Amgen Scholar*  
Assessment of Electrochemical Sensors Sensitivity for Integration in Chronic Wound Management Device  
Wei Gao  
*Assistant Professor of Medical Engineering; Investigator, Heritage Medical Research Institute; Ronald and JoAnne Willens Scholar*

Poster Session  
Hameetman Multipurpose Room  
4:00 - 6:00 PM

**Elena Selmi**  
*University of Oxford*  
Characterizing Hazardous Near Earth Asteroids With Thermal Infrared Data From NEOWISE and Reporting Previously Missed Detections to the Minor Planet Center  
Joseph Masiero  
*Solar System Scientist at IPAC*

V - Physics and Mathematics  
269 Downs  
3:10 - 3:30 PM

**Samuel D. Senzon**  
*Dr. Judith Goodstein SURF Fellow*  
Preparation for NEMS-MS With Ultra-Thin Si Resonators  
Michael L. Roukes  
*Frank J. Roshek Professor of Physics, Applied Physics, and Bioengineering*

Poster Session  
Hameetman Multipurpose Room  
4:00 - 6:00 PM

**Kristina A. Sevier**  
*Carl F. Braun SURF Fellow*  
Assembly Test Stand for Construction of Barrel Timing Layer (BTL) in CMS at CERN  
Maria Spiropulu  
*Shang-Yi Ch'en Professor of Physics*

U - Physics and Mathematics  
107 Downs  
2:00 - 2:20 PM

**Joseph R. Sheeran**  
*Taylor W. Lawrence SURF Fellow*  
Analysis of Di-Higgs Decaying to Two Bottom Quarks and Two Photons Using Proton-Proton Collision Data in CMS at the Large Hadron Collider  
Harvey B. Newman  
*Professor of Physics*

U - Physics and Mathematics  
107 Downs  
2:50 - 3:10 PM

**Ruohan Shen**  
*Tsinghua University*  
Understanding XP Codes From Quantum Lego  
Irene Dutta  
*Research Associate at Fermilab*

R - Neuroscience, Economics, and Political Science  
128 Baxter  
1:40 - 2:00 PM

**Siddhartha R. Shendrikar**  
Exploring Climate Misinformation in Twitter's Musk-Era  
R. Michael Alvarez  
*Professor of Political and Computational Social Science*
C - Biology
B133 Baxter
2:00 - 2:20 PM

Sydney A. Singal
University of California, Los Angeles
Carl F. Braun WAVE Fellow

Optimization of the SMI41 Antibody-Expressing rAAV Vector to Mediate Long-Term Contraception
Bruce A. Hay
Professor of Biology

Poster Session
Hameetman Multipurpose Room
4:00 - 6:00 PM

Anant Singh
Rajdhani College, University of Delhi

Measuring Fast Radio Burst (FRB) Scintillations Using CHIME Catalog1 Data
E. Sterl Phinney
Professor of Theoretical Astrophysics
Dongzi Li
Sherman Fairchild Postdoctoral Scholar Research Associate in Astronomy

H - Aerospace
121 Beckman Institute
3:30 - 3:50 PM

Emilia J. Sjogren
KTH Royal Institute of Technology

Terrain Aware Adaptive Control
Soon-Jo Chung
Bren Professor of Control and Dynamical Systems; Senior Research Scientist, JPL

Poster Session
Hameetman Multipurpose Room
4:00 - 6:00 PM

Svarun Soda
California State University, Northridge

Testing of Mechanical Optical Fiber Switches for Use by the High-Resolution Infrared Spectrograph for Exoplanet Characterization (HISPEC) Instrument
Dimitri P. Mawet
David Morrisroe Professor of Astronomy; Senior Research Scientist, JPL
Nemanja Jovanovic
Optics and Systems Group Lead in Astronomy

G - Aerospace
133 Guggenheim
2:20 - 2:40 PM

Saraswati Soedarmadji
Edward C. Stone Voyager SURF Fellow

GPS-Guided Thermal Image Annotation via Orthorectified RGB Aerial Imagery
Soon-Jo Chung
Bren Professor of Control and Dynamical Systems; Senior Research Scientist, JPL
Connor T. Lee
Graduate Student in Aerospace

Poster Session
Hameetman Multipurpose Room
4:00 - 6:00 PM

Anish Somani
University of California, Berkeley Amgen Scholar

Understanding the Roles of Intrinsically Disordered Regions in Chimeric Oncogenic Transcription Factor Pax3-FoxO1
Shasha Chong
Assistant Professor of Chemistry
Barun Maity
Postdoctoral Scholar Research Associate in Chemistry

J - Computer Science and Control and Dynamical Systems
224 Jorgensen
3:10 - 3:30 PM

Peiyang Song
University of California, Santa Barbara

Neural Theorem Proving in Lean 4
Anima Anandkumar
Bren Professor of Computing and Mathematical Sciences
Kaiyu Yang
Postdoctoral Scholar Research Associate in Computing and Mathematical Sciences

E - Chemistry
153 Noyes
1:40 - 2:00 PM

Philip Spyrou
Bowdoin College Amgen Scholar

Structural Characterization of Human Nuclear Pore Membrane Protein GP210
André Hoelz
Mary and Charles Ferkel Professor of Chemistry and Biochemistry
Sema Ejder
Postdoctoral Scholar Research Associate in Chemistry
H - Aerospace
121 Beckman Institute
3:10 - 3:30 PM

F - Aerospace
Felix Steinberger Eriksson
KTH Royal Institute of Technology
Monte Carlo Tree Search on a Graphics Processing Unit in the Context of Online Robotic Decision Making
Soon-Jo Chung
Bren Professor of Control and Dynamical Systems; Senior Research Scientist, JPL
Ben Riviere
Graduate Student in Aerospace
John P. Lathrop
Graduate Student in Control and Dynamical Systems

N - Electrical Engineering, Medical Engineering, and Applied Physics
B119 Baxter
1:40 - 2:00 PM

N - Electrical Engineering, Medical Engineering, and Applied Physics
Ashwitha P. Surabhi
DaRin Butz SURF Fellow
Machine Learning Model to Predict Patient Fatigue Using Data From Wearable Sensors
Wei Gao
Assistant Professor of Medical Engineering; Investigator, Heritage Medical Research Institute; Ronald and JoAnne Willens Scholar
Changhao Xu
Graduate Student in Medical Engineering

L - Applied Physics and Materials Science
B180 Beckman Behavioral Biology
2:20 - 2:40 PM

L - Applied Physics and Materials Science
Matthieu F. Sutcliffe
University of Cambridge
Caltech-Cambridge Exchange
Improving Methods to Enhance Porous Ceramic Conductivity With Carbon Nanotubes
Katherine T. Faber
Simon Ramo Professor of Materials Science
Kevin Yu
Graduate Student in Materials Science

V - Physics and Mathematics
269 Downs
3:30 - 3:50 PM

V - Physics and Mathematics
Kai L. Svenson
Marcella Bonsall SURF Fellow
Light Yield Analysis of LYSO Scintillation Crystals for the Barrel Timing Layer at the Compact Muon Solenoid
Maria Spiropulu
Shang-Yi Ch‘en Professor of Physics
Anthony LaTorre
David and Ellen Lee Postdoctoral Scholar Research Associate in Physics

Poster Session
Hameetman Multipurpose Room
4:00 - 6:00 PM

Poster Session
Aaban A. Syed
Joseph L. Koo and Helen C. Koo SURF Fellow
Understanding Mechanical and Acoustical Factors in Sonogenetics
Mikhail G. Shapiro
Max Delbrück Professor of Chemical Engineering; Investigator, Howard Hughes Medical Institute
Hao Shen
Graduate Student in Chemistry

F - Chemical Engineering and Chemistry
115 Beckman Institute
3:10 - 3:30 PM

F - Chemical Engineering and Chemistry
Tigist D. Terefe
David S. Koons SURF Fellow
Ultrasound-Based Imaging of Kinase Activity Using Engineered Gas Vesicles: Specificity Testing for Protein Kinase A (PKA) and Enhanced Kinetic Properties
Mikhail G. Shapiro
Max Delbrück Professor of Chemical Engineering; Investigator, Howard Hughes Medical Institute
Jee Won Yang
Graduate Student in Chemical Engineering

F - Chemical Engineering and Chemistry
Yu Chen Terry Tai
Chinese International School
VURP Fellow
Development of Magneto-Optical Instrument and SHG Intensity Calculations for Different SHG Processes
David Hsieh
Professor of Physics
Mingyao Guo
Graduate Student in Physics

V - Physics and Mathematics
269 Downs
1:20 - 1:40 PM

V - Physics and Mathematics
Yu Chen Terry Tai
Chinese International School
VURP Fellow
Development of Magneto-Optical Instrument and SHG Intensity Calculations for Different SHG Processes
David Hsieh
Professor of Physics
Mingyao Guo
Graduate Student in Physics

V - Physics and Mathematics
269 Downs
3:30 - 3:50 PM

V - Physics and Mathematics
Yu Chen Terry Tai
Chinese International School
VURP Fellow
Development of Magneto-Optical Instrument and SHG Intensity Calculations for Different SHG Processes
David Hsieh
Professor of Physics
Mingyao Guo
Graduate Student in Physics
Apoorva Thanvantri  
*Carol Carmichael SURF Fellow*

Improving the Representation of Precipitation Particles in ClIMA's Earth System Model

Tapio Schneider  
*Theodore Y. Wu Professor of Environmental Science and Engineering; Senior Research Scientist, JPL*

Anna Jaruga  
*Postdoctoral Scholar, JPL*

Agla Thorarinsdottir  
*University of Iceland*

Caltech-University of Iceland Exchange

Signatures of Nonviolent Nonlocality From Scattered Waves on a Schwarzschild Black Hole

Yanbei Chen  
*Professor of Physics*

Alika K. Ting  
*Yale University*

Amgen Scholar

Developing Optogenetic Control Over Gene Expression in *Pseudomonas aeruginosa* Biofilms to Understand the Role of the Extracellular Matrix in Biofilm Formation

Dianne K. Newman  
*Gordon M. Binder/Amgen Professor of Biology and Geobiology*

Georgia Squyres  
*Postdoctoral Scholar Fellowship Trainee in Biology and Biological Engineering*

Malcolm G. Tisdale  
*Robert I. and Winifred E. Gardner SURF Fellow*

The Fractal Hand: A Novel Synergistic Nonanthropomorphic Gripper for Minimally Planned Grasps

Joel W. Burdick  
*Richard L. and Dorothy M. Hayman Professor of Mechanical Engineering and Bioengineering; Research Scientist, JPL*

Andres C. Torres  
*California State Polytechnic University, Pomona Information Science and Technology (IST) Venerable WAVE Fellow*

Orbit Design for Formation-Flying Missions

Soon-Jo Chung  
*Bren Professor of Control and Dynamical Systems; Senior Research Scientist, JPL*

Matthew W. Torres  
*Ray Owen SURF Fellow*

Understanding the Role of the Dorsal Motor Nucleus of the Vagus Nerve in Gastric Emptying in a Mouse Model of α-Synuclein Aggregation

Sarkis K. Mazmanian  
*Luis B. and Nelly Soux Professor of Microbiology*

Eunice P. Tsang  
*University of California, Berkeley VURP Fellow*

The Vertical Evolution of Marine Particulate Organic Matter

Alex L. Sessions  
*Nico and Marilyn van Wingen Professor of Geobiology*

Shaelyn N. Silverman  
*Graduate Student in Geobiology*

Natalie K. Tsubamoto  
*University of California, Los Angeles Amgen Scholar*

Split TurboID-based Proximity Labeling for Identification of Proteins at Mitochondria-Lysosomal Contact Sites

David C. Chan  
*Harold and Violet Alvarez Professor of Biology*

Zheng Yang  
*Graduate Student in Bioengineering*
Avinash Vadali
Ernest R. Roberts SURF Fellow
Composite Subsystem Symmetries and Decoration of Sub-Dimensional Excitations

Xie Chen
Professor of Theoretical Physics
Arpit Dua
IQuiM Postdoctoral Scholar
Research Associate in Theoretical Physics

Phillip A. Vakoula
Universite de Montpellier
Calcium Isotopes in Urine as a Tracer of Bone Health

François Tissot
Assistant Professor of Geochemistry; Investigator, Heritage Medical Research Institute
Rosa Grigoryan
Postdoctoral Scholar Research Associate in Geochemistry

Heaven R. Varner
Georgia State University
Amgen Scholar
Deciphering Reanimation From General Anesthesia Using Drosophila

Elizabeth J. Hong
Professor of Neuroscience; Chen Scholar
Pratyush Kandimalla
Graduate Student in Neurobiology

Priscilla X. Vazquez
Frederick W. Drury, Jr., SURF Fellow
Controlled 2.5D Laboratory Experiments to Investigate Preferential Flow of Meltwater in Snow Analog

Xiaojing (Ruby) Fu
Assistant Professor of Mechanical and Civil Engineering
Nathan Jones
Graduate Student in Mechanical Engineering

Sydney C. Vernon
Arthur R. Adams SURF Fellow
Accelerating Convergence of Climate Parameter Estimation With a Momentum Approach

Tapio Schneider
Theodore Y. Wu Professor of Environmental Science and Engineering; Senior Research Scientist, JPL
Oliver Dunbar
Research Scientist in Environmental Science and Engineering

Sarah A. Vierling
Amherst College
Establishing the Chronology and Story of an Old Engelmann Oak

Alex L. Sessions
Nico and Marilyn van Wingen Professor of Geobiology

Austin K. Wang
Candace Rypisi SURF Fellow
An MCMC and Diffusion Based Algorithm for Inverse Problem Solving

Anima Anandkumar
Bren Professor of Computing and Mathematical Sciences
Hongkai Zheng
Graduate Student in Computing and Mathematical Sciences

Jessica Wang
Princeton University
VURP Fellow
Towards an Enantioselective Total Synthesis of Pedrolide

Sarah E. Reisman
Bren Professor of Chemistry
Cedric Lozano
Graduate Student in Chemistry
V - Physics and Mathematics
269 Downs
4:30 - 4:50 PM
Sherry Wang
Northwestern University
Carl F. Braun WAVE Fellow
Search for Nonresonant Pair
Production of Highly Energetic
Higgs Bosons Decaying to Bottom
Quarks
Maria Spiropulu
Shang-Yi Ch’en Professor of
Physics

K - Computer Science and Applied
and Computational Mathematics
100 Powell-Booth
2:00 - 2:20 PM
Xiuyuan Wang
Peking University
Investigating Potential Finite-Time
Blowup in Models for 3D Euler
Singularity Using Fixed-Point
Method
Thomas Y. Hou
Charles Lee Powell Professor of
Applied and Computational
Mathematics
Yixuan Wang
Graduate Student in Applied and
Computational Mathematics

C - Biology
B133 Baxter
2:20 - 2:40 PM
Meg E. Wilkinson
A Recurrent Neural Network Model
for Sequence Learning Built Upon
Endotaxis
Markus Meister
Anne P. and Benjamin F. Biaggini
Professor of Biological Sciences

G - Aerospace
133 Guggenheim
3:50 - 4:10 PM
Audrey F. Wong
DaRin Butz SURF Fellow
Design and Physical Prototyping of
a Reconfigurable Surface Structure
Sergio Pellegrino
Joyce and Kent Kresa Professor of
Aerospace and Civil Engineering;
Senior Research Scientist, JPL

K - Computer Science and Applied
and Computational Mathematics
100 Powell-Booth
3:30 - 3:50 PM
June L. Woodward
Verifying Web Browser Security
With Cachet, a JIT Compiler DSL for
Expressive Static Assertions
Deian Stefan
Associate Professor of Computer
Science and Engineering,
University of California,
San Diego
Richard M. Murray
Thomas E. and Doris Everhart
Professor of Control and
Dynamical Systems and
Bioengineering

G - Aerospace
133 Guggenheim
1:40 - 2:00 PM
Brittany M. Wright
Mark Reinecke SURF Fellow
Hardware Design and Software
Integration for the Autonomous
Flying Ambulance
Soon-Jo Chung
Bren Professor of Control and
Dynamical Systems; Senior
Research Scientist, JPL

C - Biology
B133 Baxter
2:50 - 3:10 PM
Zihang Xiao
University of California,
Santa Barbara
Uncovering the Mechanisms of
Drosophila Odor Formation:
A Study of Early Life Olfactory
Sense Modification Process With a
 Chronic Natural Odor
Elizabeth J. Hong
Professor of Neuroscience; Chen
Scholar

P - Geology
106 Spalding Lab
3:10 - 3:30 PM
Olivia L. Xu
Development of Secondary
Channel Networks Correction on
Wetlands Hydrodynamics System
Modeling
Michael P. Lamb
Professor of Geology
Dongchen Wang
Postdoctoral Scholar Research
Associate in Geology
R - Neuroscience, Economics, and Political Science
128 Baxter
4:10 - 4:30 PM
Lynn Yang
Estimation of Computational Models of the Impact of Attention on Simple Choice Using Julia
Antonio Rangel
Bing Professor of Neuroscience, Behavioral Biology, and Economics
Zeynep Enkavi
Visitor in Biology and Biological Engineering

U - Physics and Mathematics
107 Downs
3:50 - 4:10 PM
Tai-Hsuan Yang
National Taiwan University
BaBar SURF Fellow
Expressing Quantum Ground States Efficiently With Classical Neural Networks
John P. Preskill
Richard P. Feynman Professor of Theoretical Physics
Mehdi Soleimanifar
AWS Quantum Postdoctoral Scholar Research Associate in Theoretical Physics

Poster Session
Hameetman Multipurpose Room
4:00 - 6:00 PM
Madison Q. Yee
University of California, Los Angeles
Amgen Scholar
Investigating the Roles of the Ventromedial Hypothalamus and the Medial Preoptic Area in Aggressive and Sexual Behaviors
David J. Anderson
Seymour Benzer Professor of Biology; Investigator, Howard Hughes Medical Institute
Jineun Kim
Postdoctoral Scholar Fellowship Trainee in Biology and Biological Engineering

A - Biology
119 Kerckhoff
3:50 - 4:10 PM
Jessica L. Yin
Øistein and Rita A. Skjellum SURF Fellow
Trail Following and Olfaction in the Myrmecophile Sceptobius lativentris
Joseph Parker
Assistant Professor of Biology and Biological Engineering; Chen Scholar
Hayley Smihula
Graduate Student in Neurobiology

S - Astrophysics
142 Keck
3:10 - 3:30 PM
Tuojin Yin
Pasadena City College
WAVE Fellow
Modeling the Evolution of Long-lived Binary Neutron Star Merger Remnant
Elias R. Most
Assistant Professor of Theoretical Astrophysics

T - Physics
103 Downs
2:00 - 2:20 PM
Miranda K. Zak
University of Michigan
WAVE Fellow
Using Multi-Wavelength Datasets as a Growth Rate Indicator for Supermassive Black Holes
Fiona A. Harrison
Harold A. Rosen Professor of Physics

S - Astrophysics
142 Keck
4:10 - 4:30 PM
Ruocheng Zhai
Tsinghua University
VURP Fellow
Analyzing ZTF’s Two-year Microlensing Candidates
Shrinivas R. Kulkarni
George Ellery Hale Professor of Astronomy and Planetary Science

S - Astrophysics
142 Keck
3:30 - 3:50 PM
Edward Zhang
Soli Deo Gloria SURF Fellow
Dusty Galaxies as Seen by SPHEREx
Andreas L. Faisst
Staff Scientist in IPAC

L - Applied Physics and Materials Science
B180 Beckman Behavioral Biology
4:10 - 4:30 PM
Hongyi Zhang
Tsinghua University
Development of a Chemically Recyclable, 3D Printable Silicone Material
Julia R. Greer
Ruben F. and Donna Mettler Professor of Materials Science, Mechanics, and Medical Engineering
Seneca J. Velling
Graduate Student in Materials Science
Wentao Zhang  
John Stauffer SURF Fellow  
Biochemical Reconstitution of Nuclear Pore Complex Cytoplasmic Filaments Using Thermophilic Eukaryotic Model Organisms  
André Hoelz  
Mary and Charles Ferkel Professor of Chemistry and Biochemistry  
George W. Mobbs  
Senior Postdoctoral Scholar Research Associate in Chemistry

Haimeng Zhao  
Tsinghua University  
Sample Complexity of Learning Physical Processes  
John P. Preskill  
Richard P. Feynman Professor of Theoretical Physics  
Matthias C. Caro  
PRIME Postdoctoral Scholar Fellowship Trainee in Theoretical Astrophysics

Zhangqi (Jackie) Zheng  
Cornell University  
KNI SURF-the-WAVE Prize Fellow  
Characterizing the Fabrication Parameters of Holographic Lithography for Scalable Production of Architected Materials  
Julia R. Greer  
Ruben F. and Donna Mettler Professor of Materials Science, Mechanics, and Medical Engineering  
Kevin Nakahara  
Graduate Student in Mechanical Engineering

Zhiyi Zheng  
Cornell University  
Accessing the Temperature-Dependent Vibrational Dynamics of Pb Using Inelastic Neutron Scattering  
Brent T. Fultz  
Barbara and Stanley R. Rown, Jr., Professor of Materials Science and Applied Physics  
Camille M. Bernal-Choban  
Graduate Student in Materials Science

Zhonghe Zheng  
Marcella Bonsall SURF Fellow  
Autonomous Flying Ambulance: Hardware Integration and Testing  
Soon-Jo Chung  
Bren Professor of Control and Dynamical Systems; Senior Research Scientist, JPL  
Matthew Anderson  
Staff Scientist in Computing and Mathematical Sciences

Danil Zhitov  
University of Cambridge  
Caltech-Cambridge Exchange  
Experimental Feasibility of Photon Blockade With Weakly Nonlinear Kinetic Inductance Resonator  
Mohammad Mirhosseini  
Assistant Professor of Electrical Engineering and Applied Physics  
Chaitali Joshi  
AWS Quantum Postdoctoral Scholar Research Associate in Electrical Engineering

Michael S. Zitser  
California State University, Los Angeles  
BBE-CEMI WAVE Fellow  
Characterization of Sphingopyxis alaskensis  
Jared R. Leadbetter  
Professor of Environmental Microbiology  
Lydia M. Varesio  
Postdoctoral Scholar Research Associate in Geobiology
Chelsea Zou  
Binghamton University  
Sensory Deception: Unveiling Audio-Visual Illusions Within Blind Spots

Shinsuke Shimojo  
Gertrude Baltimore Professor of Experimental Psychology

Ailene Chan  
Graduate Student in Computation and Neural Systems