

Presentations in Alphabetical Order by Student

M - Astronomy
125 Kerckhoff
2:00 - 2:20 PM

Cecilia K. Abramson

Cloud watching in the simulated
circumgalactic medium

Lars Hernquist
*Mallinckrodt Professor of
Astrophysics, Harvard
University*
Scott Lucchini
*ITC Postdoctoral Fellow in
Astrophysics, Harvard
University*
Cameron Hummels
*Research Scientist and
Director of Astrophysics
Outreach*

M - Astronomy
125 Kerckhoff
3:10 - 3:30 PM

***Athiwat N.
Ackaramongkolrotn***

Evaluating late-time nebular
spectral features for progenitor
mass in stripped-envelope
supernovae

Mansi M. Kasliwal
Professor of Astronomy
Kaustav Das
*Graduate Student in
Astrophysics*

N - Mathematics and Physics
224 Jorgensen
4:30 - 4:50 PM

Sophia M. Adams
Mellon Mays SURF Fellow

Bootstrapping methods for
matrix quantum mechanics and
quantum field theory

Xi Yin
*Professor of Physics, Harvard
University*
Joshua Sandor
*Research Scientist in
Chemistry and Chemical
Engineering, Harvard
University*
David Simmons-Duffin
*Professor of Theoretical
Physics*

F - Aeronautics, Electrical
Engineering, and Medical
Engineering
142 Keck
3:50 - 4:10 PM

Layla Adeli
*Taylor Lawrence SURF
Research Fellow*

Optimization of iontophoresis
drug delivery device for
surpassing the blood brain
barrier

George Malliaras
*Prince Philip Professor of
Technology, University of
Cambridge*
Andrew Setley
*Graduate Student in
Engineering, University of
Cambridge*
Azita Emami
*Andrew and Peggy Cherng
Professor of Electrical
Engineering and Medical
Engineering*

B - Biology
127 Baxter
2:00 - 2:20 PM

Joe K. Afful
*Hugh F. and Audy Lou Colvin
SURF Fellow*

Identifying differential
methylation of distinct T cell
intra-lineage sub-populations

Ellen Rothenberg
*Edward B. Lewis Professor of
Biology*

Poster Session
Hameetman Multipurpose
Room
4:30 - 5:45 PM

Diya Agarwal
*Howell N. Tyson, Sr.,
SURF Fellow*

Experimentation and
development of a snake
robot jamming gait

Howie Choset
*Professor of Robotics,
Carnegie Mellon University*
Andy Vu
*Graduate Student in
Mechanical Engineering,
Carnegie Mellon University*
Bhaskar Vundurthy
*Project Scientist at The
Robotics Institute, Carnegie
Mellon University*
Gunter Niemeyer
*Teaching Professor of
Mechanical and Civil
Engineering*

R - Physics
115 Gates-Thomas
2:40 - 3:00 PM

Mitchell J. Agris

Integration and testing of
components for the ATLAS High
Luminosity Upgrade to the Large
Hadron Collider

Caterina Vernieri
*Assistant Professor of Particle
Physics and Astrophysics,
Stanford University/SLAC*
Michele Papucci
*Research Professor of
Theoretical Physics*

E - Chemical Engineering
135 Gates-Thomas
3:30 - 3:50 PM

Bhakti P. Ahir Ahir
John Stauffer SURF Fellow

Enhancing Motion and Sash
Height (MASH) alarms to
increase fume hood energy
efficiency

Julia A. Kornfield
*Elizabeth W. Gilloon Professor
of Chemical Engineering*
Dennis L. Ko
*Staff Scientist in Chemical
Engineering*
Tasha Cammidge
Green Labs Coordinator
Maximilian Christman
*Manager for Sustainability
Programs*

M - Astronomy
125 Kerckhoff
4:10 - 4:30 PM

Ethan A. Alderete
Jean J. Dixon SURF Fellow

Characterizing WISEA
J064750.85-154616.4, a new
L/T transition binary system

Trent Dupuy
*Reader in Observational
Astronomy, University of
Edinburgh*
Andrew W. Howard
Professor of Astronomy

K - Mechanical Engineering
133 Guggenheim
2:40 - 3:00 PM

Jacob R. Alderete
*Caltech-University of Iceland
Exchange*

Scalable second-life battery
management system for
stationary energy storage

Runar Unnthorsson
*Professor of Industrial
Engineering, University of
Iceland*

Poster Session
Hameetman Multipurpose
Room
4:30 - 5:45 PM

Levi J. Alderete
*Caltech-University of Iceland
Exchange*

Comparative analysis of relative
earthquake relocation methods:
ReSpair and GrowClust3D.jl
applied to the Bárðarbunga
volcanic region

Elias Heimisson
*Assistant Research Professor
of Earth Science, University of
Iceland*
Ylse Anna De Vries
*Graduate Student in Earth
Sciences, University of Iceland*

D - Chemistry 153 Noyes 2:20 - 2:40 PM	<i>Sulaiman Wahdan S W. AlKadi</i> <i>Ronan Armaan Mack SURF Fellow</i>	Photophysics and photochemistry of a thioxanthone dimer	Daniel G. Nocera <i>Patterson Rockwood Professor of Energy, Harvard University</i> Matthew Drummer <i>Postdoctoral Fellow in Chemistry and Chemical Biology, Harvard University</i> Ryan G. Hadt <i>Professor of Chemistry</i>
Poster Session Hameetman Multipurpose Room 4:30 - 5:45 PM	<i>Ali S. Almosa</i> <i>John Stauffer SURF Fellow</i>	Chiral allene formation via vinylcation intermediate	Hosea Nelson <i>Professor of Chemistry</i> Yucheng Fu <i>Graduate Student in Chemistry</i>
M - Astronomy 125 Kerckhoff 1:40 - 2:00 PM	<i>Anica J. Ancheta</i> <i>Flintridge Foundation SURF Fellow</i>	Investigating the HD 984 system with the Keck Planet Imager and Characterizer	Dimitri P. Mawet <i>David Morrisroe Professor of Astronomy; Senior Research Scientist, JPL</i> Katelyn Horstman <i>Graduate Student in Astrophysics</i>
Poster Session Hameetman Multipurpose Room 4:30 - 5:45 PM	<i>Sophia-Marie N. Andrews</i> <i>Brenda and Louis J. Alpinieri SURF Fellow</i>	Design and analysis of a 3D- printed gaseous oxide/liquid nitrogen resonance igniter in a bipropellant engine	Morteza Gharib <i>Hans W. Liepmann Professor of Aeronautics and Medical Engineering</i>
R - Physics 115 Gates-Thomas 1:40 - 2:00 PM	<i>Katherine A. Avanesov</i> <i>Taylor Lawrence SURF Research Fellow</i>	Search for long-lived particles with HCAL segmentation in CMS at the Large Hadron Collider	Harvey B. Newman <i>Professor of Physics</i> Kiley E. Kennedy <i>Dicke Postdoctoral Fellow in Physics</i>
C - Chemistry 147 Noyes 3:10 - 3:30 PM	<i>Aadarsh Balaji</i> <i>John Stauffer SURF Fellow</i>	The electronic structure of Holm clusters	Garnet K. Chan <i>Bren Professor of Chemistry</i> Chenghan Li <i>Postdoctoral Scholar Research Associate in Chemistry</i>
Poster Session Hameetman Multipurpose Room 4:30 - 5:45 PM	<i>Ava K. Balanon</i> <i>John Stauffer SURF Fellow</i>	Impact of bacterial community structure on plasmid conjugation efficiency assessed through colony-forming units	Sujit Datta <i>Professor of Chemical Engineering, Bioengineering, and Biophysics</i> Pablo Bravo <i>Postdoctoral Scholar Research Associate in Chemical Engineering</i> Danielle Sclafani <i>Graduate Student in Chemical Engineering</i>
Poster Session Hameetman Multipurpose Room 4:30 - 5:45 PM	<i>Jonathan G. Barata</i> <i>Carole and Sidney Meltzner SURF Fellow</i>	A fully integrated optical alignment system for the Andor Spectrometer	George R. Rossman <i>Professor of Mineralogy</i> Helen V. Evans <i>Research Technician in Geology</i>

K - Mechanical Engineering 133 Guggenheim 3:50 - 4:10 PM	<i>Kyrillos A. Bastawros</i> <i>Nellie Bergen and Adrian Foster Tillotson SURF Fellow</i>	Computational and experimental study of irregular architected metamaterials	Chiara Daraio <i>G. Bradford Jones Professor of Mechanical Engineering and Applied Physics; Investigator, Heritage Medical Research Institute</i> Chelsea Fox <i>Graduate Student in Mechanical Engineering</i>
I - Computer Science 100 Powell-Booth 1:40 - 2:00 PM	<i>Kyle T. Berkson</i> <i>Dale and Suzanne Burger SURF Fellow</i>	Extending BayesRays for reliable spatial uncertainty in ill-posed inverse problems	Katherine L. Bouman <i>Associate Professor of Computing and Mathematical Sciences, Electrical Engineering, and Astronomy; Rosenberg Scholar; Investigator, Heritage Medical Research Institute</i> Brandon Zhao <i>Graduate Student in Computing and Mathematical Sciences</i>
Poster Session Hameetman Multipurpose Room 4:30 - 5:45 PM	<i>Rishi Bhargava</i> <i>Samuel P. and Frances Krown SURF Fellow</i>	Turning light into flow: Active matter driven microfluidic pumps	Matthew W. Thomson <i>Professor of Computational Biology; Investigator, Heritage Medical Research Institute</i> Hao Wang <i>Graduate Student in Bioengineering</i>
G - Applied Physics and Materials Science 125 Steele Lab 3:10 - 3:30 PM	<i>Sanzhar Bissenali</i>	Deterministic single atom loading into optical tweezers	Jeff Thompson <i>Associate Professor of Electrical and Computer Engineering, Princeton University</i> Michael Peper <i>Postdoctoral Research Associate in Electrical and Computer Engineering, Princeton University</i> Andrei Faraon <i>William L. Valentine Professor of Applied Physics and Electrical Engineering</i>
L - Humanities and Social Sciences/Geological and Planetary Sciences 104 Watson 4:30 - 4:50 PM	<i>Priscilla Boo</i> University of California, Los Angeles	Development of an artificial urine standard for stable calcium isotope analysis for geochemical applications	François Tissot <i>Professor of Geochemistry; Investigator, Heritage Medical Research Institute</i> Theo J. Tacail <i>Postdoctoral Scholar Research Associate in Geochemistry</i> Rebecca J. Ryan <i>Postdoctoral Scholar Research Associate in Geochemistry</i>

G - Applied Physics and Materials Science 125 Steele Lab 2:20 - 2:40 PM	Benjamin L. Boone <i>Robert K. and Alice L. Roney SURF Fellow</i>	Mitigating decoherence in superconducting qubits via a floating merged-element transmon embedded in a phononic shield	Oskar J. Painter <i>John G Braun Professor of Applied Physics and Physics</i> Matthew Davidson <i>Graduate Student in Applied Physics</i>
Poster Session Hameetman Multipurpose Room 4:30 - 5:45 PM	Beatrice K. Cai	Investigating the roles of macrophage sources in mouse digit tip regeneration and scarring	Kai Mesa <i>Assistant Professor of Molecular Biology, Princeton University</i> Emily A. Polk <i>Lab Manager, Princeton University</i> Lea A. Goentoro <i>Professor of Biology</i>
Poster Session Hameetman Multipurpose Room 4:30 - 5:45 PM	Ioana M. Caraus <i>John Stauffer SURF Fellow</i>	Structural and functional characterization of the nucleocytoplasmic transport of MAPK14	André Hoelz <i>Mary and Charles Ferkel Professor of Chemistry and Biochemistry; Investigator, Howard Hughes Medical Institute</i> Chia-Yu Chien <i>Graduate Student in Biochemistry and Molecular Biophysics</i>
Q - Physics B125 Baxter 1:40 - 2:00 PM	Constantin J. Cedillo-Vayson de Pradenne <i>Dale and Suzanne Burger SURF Fellow</i>	Categorification of Stokes coefficients for Brieskorn sphere invariants	Sergei G. Gukov <i>John D. MacArthur Professor of Theoretical Physics and Mathematics</i> Mrunmay Jagadale <i>Graduate Student in Physics</i>
Alumni Weekend: Session 1 106 Spalding Lab 2:40 - 3:00 PM	Sujay Champati <i>Mr. and Mrs. Robert C. Loschke SURF Fellow</i>	A unified phase-space framework for Measurement-Device-Independent Quantum Key Distribution	Maria Spiropulu <i>Shang-Yi Ch'en Professor of Physics</i> Raju Valivarthi <i>Research Scientist in Quantum Science and Technology</i>
M - Astronomy 125 Kerckhoff 1:00 - 1:20 PM	Aaron W. Chan <i>Alain Porter Memorial SURF Fellow</i>	Quality assessment of skydata from the OVRO-LWA radio telescope	Gregg W. Hallinan <i>Professor of Astronomy</i> Nivedita Mahesh <i>David and Ellen Lee Postdoctoral Scholar Research Associate in Astronomy</i>
Alumni Weekend: Session 1 106 Spalding Lab 2:20 - 2:40 PM	Samantha Chang <i>Dale and Suzanne Burger SURF Fellow</i>	Profiling misinformation susceptibility in the American electorate	R. Michael Alvarez <i>Flintridge Foundation Professor of Political and Computational Social Science</i> Mitchell Linegar <i>Graduate Student in Social Science</i>

Poster Session
Hameetman Multipurpose
Room
4:30 - 5:45 PM

Dora Chatterjee

Existence and stability of
traveling-wave solutions to a
generalized Korteweg-de Vries-
Burgers equation

Jared C. Bronski
*Professor of Mathematics,
University of Illinois at
Urbana-Champaign*
Vera Hur
*Professor and Chair of
Mathematics, University of
Illinois at Urbana-Champaign*
Omer Tamuz
*Professor of Economics and
Mathematics*

G - Applied Physics and
Materials Science
125 Steele Lab
4:50 - 5:10 PM

Yan Che
*Samuel P. and Frances Krown
SURF Fellow*

A LEEM study on graphene
growth

Joseph L. Falson
*Assistant Professor of
Materials Science; William H.
Hurt Scholar*
Ivan S. Bepalov
*Postdoctoral Scholar Research
Associate in Applied Physics
and Materials Science*

G - Applied Physics and
Materials Science
125 Steele Lab
1:00 - 1:20 PM

Belle L. Chen
Donald S. Clark SURF Fellow

Characterization of TiO₂ electron
transport layers for transition
metal dichalcogenide
photovoltaics

Harry A. Atwater, Jr.
*Howard Hughes Professor of
Applied Physics and Materials
Science*
Rachel Tham
*Graduate Student in Materials
Science*

J - Computer Science
128 Baxter
1:00 - 1:20 PM

Hongqiao Chen
Hannah Bradley SURF Fellow

How do multimodal language
models reason about space and
time?

Pietro Perona
*Allen E. Puckett Professor of
Electrical Engineering*
Georgia Gkioxari
*Assistant Professor of
Computing and Mathematical
Sciences and Electrical
Engineering; William H. Hurt
Scholar*
Raphaela H. Kang
*Graduate Student in
Computation and Neural
Systems*

K - Mechanical Engineering
133 Guggenheim
1:20 - 1:40 PM

Kyle Y. Chen
*Taylor Lawrence SURF
Research Fellow*

Numerical analysis of low-Mach
time-integration schemes for 3D
variable density flows

Guillaume Blanquart
*Professor of Mechanical
Engineering*
Aaron Nelson
*Graduate Student in
Mechanical Engineering*

N - Mathematics and Physics
224 Jorgensen
4:50 - 5:10 PM

Abhiram Cherukupalli
*Margaret Leong and
Michael P. Checca
SURF Fellow*

Probing correlated dark matter
signals in pulsar timing arrays
might lead to promising bounds
on substructure

Kathryn M. Zurek
*Louis E. Nohl Professor of
Theoretical Physics*
Kim V. Berghaus
*Sherman Fairchild Postdoctoral
Scholar Research Associate in
Theoretical Physics*
Vincent Lee
Postdoctoral Scholar in Physics

H - Bioengineering and
Computation and Neural
Systems
113 Spalding Lab
3:30 - 3:50 PM

Malia A. Christy

Unsteady inertial effects in
cardiovascular flows:
Experimental observations
and analysis

Michael Plesniak
*Professor and Chair of
Mechanical and Aerospace
Engineering, George
Washington University*
Kartik Bulusu
*Associate Professor of
Mechanical and Aerospace
Engineering, George
Washington University*
John O. Dabiri
*Centennial Professor of
Aeronautics and Mechanical
Engineering*

I - Computer Science
100 Powell-Booth
2:20 - 2:40 PM

Alex Chung

Patterns of the Superbowl with
robust L-pattern identification

Pablo A. Moscato
*Professor of Computer
Science, University of
Newcastle Australia*
Weijia Zhang
*Lecturer in Data Science and
Applied Statistics, University of
Newcastle Australia*
Matthew M. Gherman
*Hearst Postdoctoral Scholar
Teaching Fellow in
Mathematics*

G - Applied Physics and
Materials Science
125 Steele Lab
4:10 - 4:30 PM

Audrey S. Chyung
DaRin Butz SURF Fellow

Gradient-controlled and
templated TBA-based freeze
casting of porous prismatic SiOC
scaffolds

Katherine T. Faber
*Simon Ramo Professor of
Materials Science*
Wesley D. Patel
*Graduate Student in Chemical
Engineering*

I - Computer Science
100 Powell-Booth
4:30 - 4:50 PM

Jennifer A. Cruden

Towards formal verification of
neural networks in Lean

Anima Anandkumar
*Bren Professor of Computing
and Mathematical Sciences*
Robert Joseph George
*Graduate Student in
Computing and Mathematical
Sciences*

C - Chemistry 147 Noyes 2:00 - 2:20 PM	Katie M. Dao	Thin or monolayer 2D conducting metal-organic frameworks by exfoliation	John Anderson <i>Assistant Professor of Chemistry, University of Chicago</i> Jonas C. Peters <i>Bren Professor of Chemistry</i>
E - Chemical Engineering 135 Gates-Thomas 1:40 - 2:00 PM	Grace F. Davis <i>William N. Lacey SURF Fellow</i>	Enhancement of heat transfer in porous materials with polymer solution flows	Sujit Datta <i>Professor of Chemical Engineering, Bioengineering, and Biophysics</i> Craig Singiser <i>Graduate Student in Chemical Engineering</i>
G - Applied Physics and Materials Science 125 Steele Lab 4:30 - 4:50 PM	Jonathan Dawit	Combining magnetic susceptibility measurements with a mathematical approach to modeling inductive coils to approximate the London penetration depths of superconductors	Joseph L. Falson <i>Assistant Professor of Materials Science; William H. Hurt Scholar</i> Reiley J. Dorrian <i>Graduate Student in Applied Physics</i>
B - Biology 127 Baxter 2:40 - 3:00 PM	Derek W. Days	3D micron-resolution brain tractography via scattered light imaging	Michael M. Zeineh <i>Associate Professor of Radiology, Stanford University</i> Ellen Rothenberg <i>Edward B. Lewis Professor of Biology</i>
Q - Physics B125 Baxter 2:20 - 2:40 PM	Eddily M. De La Cruz <i>Ron Sven Rat and Bfield SURF Fellow</i>	Probing the weak interaction with early universe physics: The effects of sterile neutrinos in hot and dense environments	Chad Kishimoto <i>Associate Professor of Physics and Biophysics, University of San Diego</i> Ryan B. Patterson <i>Professor of Physics</i>
Poster Session Hameetman Multipurpose Room 4:30 - 5:45 PM	Shravani A. Deshmukh <i>Arjun Bansal ('05) and Ria Langheim SURF Fellow</i>	Knowledge transfer in ResNet and vision transformers: Investigating asymmetric data distributions and alternative training paradigms for computer vision	Pietro Perona <i>Allen E. Puckett Professor of Electrical Engineering</i> Fengqing Yu <i>Graduate Student in Computation and Neural Systems</i>
B - Biology 127 Baxter 2:20 - 2:40 PM	Aamina Dhar <i>Ray Owen SURF Fellow</i>	Quasi-periodic pattern detection in patients with brain lesions	Haris I. Sair <i>Professor of Radiology and Radiological Science, Johns Hopkins Medical Institute</i> Henry A. Lester <i>Professor of Biology</i>

C - Chemistry
147 Noyes
4:10 - 4:30 PM

Chrystal Duan
John Stauffer SURF Fellow

Mechanistic study of N₂
activation on intermetallic
surfaces

William A. Goddard III
*Charles and Mary Ferkel
Professor of Chemistry,
Materials Science, and Applied
Physics*
Sejun Kim
*Postdoctoral Scholar Research
Associate in Chemistry*

J - Computer Science
128 Baxter
2:20 - 2:40 PM

Aaron M. Dumas

Safe offline reinforcement
learning in noisy environments
with digital twin-supported
medical decision making

Rose Yu
*Associate Professor of
Computer Science and
Engineering, University of
California, San Diego*
Aysin Tumay
*Graduate Student in Computer
Science and Engineering,
University of California,
San Diego*
Eric V. Mazumdar
*Assistant Professor of
Computing and Mathematical
Sciences and Economics*

Poster Session
Hameetman Multipurpose
Room
4:30 - 5:45 PM

Elizabeth C. Ellison
W.E.F.K. SURF Fellow

Optical phase stability in
large-scale quantum networks

Maria Spiropulu
*Shang-Yi Ch'en Professor of
Physics*
Si Xie
Visitor in High Energy Physics
Andrew Cameron
Research Associate at Fermilab

Poster Session
Hameetman Multipurpose
Room
4:30 - 5:45 PM

Jawhara A. Emhemed
*Dale and Suzanne Burger
SURF Fellow*

Sparse graphical designs and
the Kolm Pollak-EDE:
Investigating the equity of
spectral geometry

Catherine Babecki
*Olga Taussky and John
Todd/von Kármán Postdoctoral
Scholar Teaching Fellow in
Mathematics*
Drew Horton
*Graduate Student in
Mathematics*

E - Chemical Engineering
135 Gates-Thomas
3:50 - 4:10 PM

Shrila Esturi

Utilizing nuclear magnetic
resonance spectroscopy and
machine learning for tree health
monitoring

Jeffrey Reimer
*Professor of Chemical and
Biomolecular Engineering,
University of California,
Berkeley*
Sophia Fricke
*PMRC Fellow in Chemistry,
University of California,
Berkeley*
Paul O. Wennberg
*R. Stanton Avery Professor of
Atmospheric Chemistry and
Environmental Science and
Engineering*

D - Chemistry 153 Noyes 2:00 - 2:20 PM	Emma B. Fan <i>Thomas C. Hays SURF Fellow</i>	Less is more: Data-driven quality evaluation of electron diffraction for intelligent unit cell identification	Hosea Nelson <i>Professor of Chemistry</i> Dmitry Eremin <i>Staff Scientist in Chemistry</i>
G - Applied Physics and Materials Science 125 Steele Lab 3:30 - 3:50 PM	Richard H. Feng	Design and implementation of a tunable piezoelectric pressure system for layered 2D materials	Stevan Nadj-Perge <i>Professor of Applied Physics and Materials Science</i>
F - Aeronautics, Electrical Engineering, and Medical Engineering 142 Keck 4:10 - 4:30 PM	Thomas E. Fenton	Quantized acceleration using Allo: Systolic tile implementation	Mircea R. Stan <i>Virginia Microelectronics Consortium (VMEC) Professor of Electrical and Computer Engineering, University of Virginia</i> Yimin Gao <i>Graduate Student in Electrical and Computer Engineering, University of Virginia</i> Glen A. George <i>Teaching Professor of Electrical Engineering</i>
C - Chemistry 147 Noyes 1:20 - 1:40 PM	Camilla Fezzi <i>John Stauffer SURF Fellow</i>	Engineering native N-terminal access to a membrane enzyme: Dual strategies for structural isolation of HyMraY	William M. Clemons, Jr. <i>Arthur and Marian Hanisch Memorial Professor of Biochemistry</i> Beebee Yusrah Kaudeer <i>Graduate Student in Chemistry</i>
Poster Session Hameetman Multipurpose Room 4:30 - 5:45 PM	Nerissa A. Finnen	The effect of non-instantaneous switching on time-modulated array performance	Hua Wang <i>Full Professor of Electronics, ETH Zurich</i> Basem Ali <i>Full Professor of Information Technology and Electrical Engineering, ETH Zurich</i> Ali Hajimiri <i>Bren Professor of Electrical Engineering and Medical Engineering</i>
I - Computer Science 100 Powell-Booth 1:00 - 1:20 PM	Stuart C. Florescu	Hardware-efficient generative quantum Eigensolver for ground state energy estimation	Alan Aspuru-Guzik <i>Professor of Chemistry and Computer Science, University of Toronto</i> Austin Cheng <i>Graduate Student in Chemistry, University of Toronto</i> R. Michael Alvarez <i>Flintridge Foundation Professor of Political and Computational Social Science</i>

Q - Physics
B125 Baxter
1:20 - 1:40 PM

Ania Freymond
Victor Neher SURF Fellow

Shadow celestial OPEs in 4D
asymptotically flat holography

Elizabeth Himwich
*John Archibald Wheeler
Postdoctoral Fellow in Physics,
Princeton University*
David Simmons-Duffin
*Professor of Theoretical
Physics*

H - Bioengineering and
Computation and Neural
Systems
113 Spalding Lab
2:00 - 2:20 PM

Tanvi L. Ganapathy

Biophysical study on the kinetics
of cooperative DNA hybridization
in winner-take-all pairwise
annihilation reactions

Lulu Qian
Professor of Bioengineering
Matthew Plazola
*Graduate Student in
Bioengineering*

C - Chemistry
147 Noyes
3:30 - 3:50 PM

Haleigh J. Gardner

Stereospecific synthesis of
vicinally brominated
polycyclooctene (PCOE) and
downstream chemistries

E. Bryan Coughlin
*Professor of Polymer Science
and Engineering, University of
Massachusetts Amherst*
Gregory C. Fu
*Norman Chandler Professor of
Chemistry*

Poster Session
Hameetman Multipurpose
Room
4:30 - 5:45 PM

Sophia E. Gershaft
The Associates SURF Fellow

Design and implementation of a
drop on demand (DoD) system
for automated drop casting of a
radiolytic precursor target

Nick R. Hutzler
Assistant Professor of Physics
Phelan Yu
Graduate Student in Physics

G - Applied Physics and
Materials Science
125 Steele Lab
2:00 - 2:20 PM

Mark A. Gherghetta

Developing and optimizing an
acousto-optic deflector (AOD)
system for trapped-ion quantum
logic operations

Crystal Noel
*Assistant Professor of
Electrical and Computer
Engineering, Duke University*
Jerry Chen
*Graduate Student in Electrical
and Computer Engineering,
Duke University*
Manuel A. Endres
Professor of Physics

I - Computer Science
100 Powell-Booth
1:20 - 1:40 PM

Joseph W. Glambrone
*James H. Milovich
SURF Fellow*

Supporting teaching assistants in
theoretical Computer Science
courses

Adam Blank
*Teaching Professor of
Computing and Mathematical
Sciences*
Claire Ralph
*Lecturer in Computing and
Mathematical Sciences*
Matthew M. Gherman
*Hearst Postdoctoral Scholar
Teaching Fellow in
Mathematics*

L - Humanities and Social
Sciences/Geological and
Planetary Sciences
104 Watson
4:10 - 4:30 PM

Stephen W. Goehring

Using Raman and optical
spectroscopy to isolate the
spectroscopic signatures of the
rare earth elements

George R. Rossman
Professor of Mineralogy

O - Mathematics 109 Jorgensen 2:00 - 2:20 PM	<i>Samuel P. Goodman</i> <i>Nilo A. and Phylis F. Niccolai SURF Fellow</i>	Unitary Eichler basis theorems	Elena Mantovan <i>Taussky-Todd-Lonergan Professor of Mathematics</i>
Alumni Weekend: Session 1 106 Spalding Lab 1:20 - 1:40 PM	<i>Elisa S. Grillo</i> <i>John Stauffer SURF Fellow</i>	Designing synthetic microbial communities for sustainable nitrogen delivery in the rhizosphere	Gözde S. Demirer <i>Clare Booth Luce Assistant Professor of Chemical Engineering</i> Chiara Berruto <i>Graduate Student in Biology</i> Eugene Li <i>Graduate Student in Chemical Engineering</i>
Poster Session Hameetman Multipurpose Room 4:30 - 5:45 PM	<i>Aryan Gupta</i> <i>Princeton University VURP Fellow</i>	Brown dwarfs in eclipse: A nested sampling approach to inferring internal temperature via broadband photometry	Andrew W. Howard <i>Professor of Astronomy</i> Steven Giacalone <i>NSF Postdoctoral Scholar Fellowship Trainee in Astronomy</i>
Poster Session Hameetman Multipurpose Room 4:30 - 5:45 PM	<i>Nikash Gupta</i>	Spectral gap and mixing times in the repeated averages process on graphs	Lingfu Zhang <i>Assistant Professor of Mathematics</i>
F - Aeronautics, Electrical Engineering, and Medical Engineering 142 Keck 3:10 - 3:30 PM	<i>Shan R. Gupta</i> <i>Robert T. Herzog SURF Fellow</i>	Physics-based inverse design for electromagnetic structures	Ali Hajimiri <i>Bren Professor of Electrical Engineering and Medical Engineering</i> Jatin Mathur <i>Graduate Student in Electrical Engineering</i>
O - Mathematics 109 Jorgensen 2:40 - 3:00 PM	<i>Henry Gustafson</i> <i>Carl F. Braun SURF Fellow</i>	Algebraic models of Merge and phases for tensor networks	Matilde Marcolli <i>Robert F. Christy Professor of Mathematics and Computing and Mathematical Sciences</i>
I - Computer Science 100 Powell-Booth 2:40 - 3:00 PM	<i>Kieran A. Hale</i>	Multivariate continued fraction regression with target derivatives	Pablo A. Moscato <i>Professor of Computer Science, University of Newcastle Australia</i> Andreas Heinecke <i>Senior Lecturer in Mathematics, University of Newcastle Australia</i> Adam W. Wierman <i>Carl F Braun Professor of Computing and Mathematical Sciences</i>
Poster Session Hameetman Multipurpose Room 4:30 - 5:45 PM	<i>Muhammed Halil</i>	Mueller polarimetry of experimental interstellar dust analogs	Paul M. Bellan <i>Professor of Applied Physics</i> Andre Nicolov <i>Graduate Student in Applied Physics</i>

Q - Physics
B125 Baxter
3:10 - 3:30 PM

Hypatia C. Hamkins
*Samuel P. and Frances Krown
SURF Fellow*

Determining the extent to which
the subgroup of computable
elements in the Galois group of
the algebraic closure of the
rationals is elementary

Russell Miller
*Professor of Mathematics,
Queens College/CUNY*
Matthew M. Gherman
*Hearst Postdoctoral Scholar
Teaching Fellow in
Mathematics*

Poster Session
Hameetman Multipurpose
Room
4:30 - 5:45 PM

Daood I. Hashmi
*Samuel and Berta Spalter
SURF Fellow*

Probing substituent influence on
reactivity and selectivity in
Pd-catalyzed Michael
spirocyclization

Brian M. Stoltz
*Victor and Elizabeth Atkins
Professor of Chemistry;
Investigator, Heritage Medical
Research Institute*
Christian Strong
Graduate Student in Chemistry

L - Humanities and Social
Sciences/Geological and
Planetary Sciences
104 Watson
4:50 - 5:10 PM

Polaris C. Hayes
Marcella Bonsall SURF Fellow

Tracking the movement of the
dust clump in the debris disc of
Beta Pictoris

Konstantin Batygin
Professor of Planetary Science
Yinuo Han
*Postdoctoral Scholar Research
Associate in Planetary Science*

I - Computer Science
100 Powell-Booth
2:00 - 2:20 PM

Eric M. He

Understanding the
computational limits of
bipartite graph alignment

Daniel Cullina
*Assistant Professor of
Electrical Engineering,
Pennsylvania State University*
Adam C. Wierman
*Carl F Braun Professor of
Computing and Mathematical
Sciences*

L - Humanities and Social
Sciences/Geological and
Planetary Sciences
104 Watson
3:50 - 4:10 PM

Natalia M. Hernandez
*Carl F. Braun SURF Fellow/
Caltech-University of Iceland
Exchange*

Modeling sill deflation and fault
slip during caldera collapse at
Bárðarbunga, Iceland

Elias Heimisson
*Assistant Research Professor
of Earth Science, University of
Iceland*
Gabriele Benedetti
*Graduate Student in Biology,
University of Iceland*

G - Applied Physics and
Materials Science
125 Steele Lab
3:50 - 4:10 PM

Hana Hisamune
*Citadel Global Fixed Income
SURF Fellow*

Photoinduced Ag doping for
stabilizing mixed-halide
perovskites

Barry Rand
*Assistant Professor of
Electrical Engineering,
Princeton University*
Julia C. Brubach
*Graduate Student in Electrical
Engineering, Princeton
University*
Harry A. Atwater, Jr.
*Howard Hughes Professor of
Applied Physics and Materials
Science*

L - Humanities and Social Sciences/Geological and Planetary Sciences 104 Watson 3:30 - 3:50 PM	<i>Elinor J. Holland</i> <i>Rossum Family SURF Fellow</i>	Examining the effect of heterotrophic bacteria and viral lysis on the size and flux of diatom marine snow particles in the biological carbon pump	Victoria J. Orphan <i>James Irvine Professor of Environmental Science and Geobiology</i> Jeremy E. Schreier <i>Postdoctoral Scholar Research Associate in Geobiology</i>
Poster Session Hameetman Multipurpose Room 4:30 - 5:45 PM	<i>Hanfei Hou</i> Peking University	Rainbow on a chip: High-performance visible and short near-infrared laser sources based on germano-silicate ultra-low-loss photonic integrated circuits	Kerry J. Vahala <i>Ted and Ginger Jenkins Professor of Information Science and Technology and Professor of Applied Physics</i> Haojing Chen <i>Postdoctoral Scholar Research Associate in Applied Physics and Materials Science</i>
E - Chemical Engineering 135 Gates-Thomas 4:10 - 4:30 PM	<i>Noor E. Ibrahim</i> <i>John Stauffer SURF Fellow</i>	Ultrasonic control of ion channel functions via a sonogenetic redox switch	Mikhail G. Shapiro <i>Max Delbrück Professor of Chemical Engineering and Medical Engineering; Investigator, Howard Hughes Medical Institute</i> Hengyu Li <i>Graduate Student in Chemistry</i>
I - Computer Science 100 Powell-Booth 3:10 - 3:30 PM	<i>Chigozirim N. Ifeji</i> <i>Mellon Mays SURF Fellow</i>	Towards a digital twin: Applying ML methodologies to complete solar event data	Hillary Mushkin <i>Research Professor of Art and Design</i> Ashish Mahabal <i>Deputy Director, Caltech Center for Data-Driven Discovery</i>
O - Mathematics 109 Jorgensen 1:40 - 2:00 PM	<i>Jun Ikeda</i> <i>Dale and Suzanne Burger SURF Fellow</i>	Generalized tube algebras for locally presented quasi-local algebras	Corey Jones <i>Assistant Professor of Mathematics, North Carolina State University</i> Matilde Marcolli <i>Robert F. Christy Professor of Mathematics and Computing and Mathematical Systems</i>
H - Bioengineering and Computation and Neural Systems 113 Spalding Lab 2:40 - 3:00 PM	<i>Ritali Jain</i> <i>Arthur R. Adams SURF Fellow</i>	On the computational power of nucleation kinetics	Erik Winfree <i>Professor of Computer Science, Computation and Neural Systems, and Bioengineering</i> Cameron Chalk <i>Postdoctoral Scholar Research Associate in Biology and Biological Engineering</i> Yancheng Du <i>Postdoctoral Scholar Research Associate in Biology and Biological Engineering</i>

K - Mechanical Engineering 133 Guggenheim 4:10 - 4:30 PM	Ana S. Jaramillo <i>Carol Casey SURF Fellow</i>	Sensor-integrated head design for robust perception in humanoid robots	Aaron D. Ames <i>Bren Professor of Mechanical and Civil Engineering, Control and Dynamical Systems, and Aerospace</i> Sergio A. Esteban <i>Graduate Student in Mechanical Engineering</i> Adrian Boedtker Ghansah <i>Graduate Student in Control and Dynamical Systems</i>
G - Applied Physics and Materials Science 125 Steele Lab 1:20 - 1:40 PM	Nathan Jay <i>Kiyo and Eiko Tomiyasu SURF Scholar</i>	Simulations of Shor's algorithm with reduced density matrices	Marco Bernardi <i>Professor of Applied Physics, Physics, and Materials Science</i>
I - Computer Science 100 Powell-Booth 3:50 - 4:10 PM	Gavin N. John	Using an expected volume heuristic to guide adaptive sampling of molecular dynamics simulations of proteins	Gregory Bowman <i>Louis Heyman University Professor of Bioengineering, University of Pennsylvania</i> Mitchell Guttman <i>Professor of Biology</i>
K - Mechanical Engineering 133 Guggenheim 1:00 - 1:20 PM	Krishna Kamalakannan <i>Samuel N. Vodopia and Carol J. Hasson SURF Fellow</i>	Numerical simulations and data generation for learning closure models	Kaushik Bhattacharya <i>Howell N. Tyson, Sr., Professor of Mechanics and Materials Science</i> Lianghao Cao <i>Postdoctoral Scholar Research Associate in Computing and Mathematical Sciences</i> Harkirat Singh <i>Postdoctoral Scholar Research Associate in Mechanical and Civil Engineering</i>
Q - Physics B125 Baxter 1:00 - 1:20 PM	Nora K. Kane	Designing a digital twin for Brookhaven National Laboratory's Rapid Cycling Synchrotron as part of the Electron-Ion Collider project	Vahid Ranjbar <i>System Manager, Brookhaven National Laboratory</i> David G. Hitlin <i>Professor of Physics</i>
A - Biology 125 Baxter 1:00 - 1:20 PM	Zara H. Kanold-Tso <i>Dr. Paul C. Bartlett SURF Fellow</i>	Serotonin dynamics in the VMHvl Esr1 during social interactions	David J. Anderson <i>Seymour Benzer Professor of Biology; Investigator, Howard Hughes Medical Institute</i> Amit Vinograd <i>Postdoctoral Scholar Fellowship Trainee in Biology and Biological Engineering; Associate, Howard Hughes Medical Institute</i> Takumi Itakura <i>Postdoctoral Scholar Fellowship Trainee in Biology and Biological Engineering</i>

J - Computer Science 128 Baxter 4:10 - 4:30 PM	Gautham Kappaganthula <i>Citadel Global Fixed Income SURF Fellow</i>	Learning affine maps for an amortized noise-agnostic filter	Andrew M. Stuart <i>Bren Professor of Computing and Mathematical Sciences</i> Bohan Chen <i>Postdoctoral Scholar Research Associate in Computing and Mathematical Sciences</i>
C - Chemistry 147 Noyes 3:50 - 4:10 PM	Isabella G. Kedikian <i>Sung-Hsien Chen Shih SURF Fellow</i>	Investigating the role of angiotensinogen (AGT) in oxidative stress and inflammation in retinal pigment epithelium (RPE) cells with high-risk CFH (Y402H)	Deborah Ferrington <i>Chief Scientific Officer, Doheny Eye Institute; Professor, University of California, Los Angeles</i> Peng Shang <i>Research Scientist, Doheny Eye Institute</i> Johnson Hoang <i>Research Technician, Doheny Eye Institute</i> Dennis A. Dougherty <i>George Grant Hoag Professor of Chemistry</i>
P - Physics B122 Gates Annex 1:20 - 1:40 PM	Stavros Klaoudatos	On-shell constraints and the emergence of supersymmetry	Nima Arkani-Hamed <i>Gopal Prasad Professor of Physics, Princeton/IAS</i> Maria Spiropulu <i>Shang-Yi Ch'en Professor of Physics</i>
Poster Session Hameetman Multipurpose Room 4:30 - 5:45 PM	Umran S. Koca <i>Larson Scholar</i>	Investigating improvements to sensitivity of next generation gravitational wave detectors with internal squeezing	Lee P. McCuller <i>Assistant Professor of Physics</i> Sander Vermeulen <i>Postdoctoral Scholar Research Associate in Physics</i>
D - Chemistry 153 Noyes 3:30 - 3:50 PM	Nora K. Kristufek	Understanding and quantifying pseudocapacitance through measurements of entropy	Nicholas P. Stadie <i>Assistant Professor of Chemistry, University of Montana</i> Brent T. Fultz <i>Barbara and Stanley R. Rawn, Jr., Professor of Materials Science and Applied Physics</i>
M - Astronomy 125 Kerckhoff 2:40 - 3:00 PM	Diya T. Kumar	Disruption of resonant-chain planetary systems	Fei Dai <i>Assistant Professor of Astronomy, University of Hawaii at Manoa</i> Lynne Hillenbrand <i>Professor of Astronomy</i>

Alumni Weekend: Session 1 106 Spalding Lab 1:00 - 1:20 PM	<i>Shrujana S. Kunnam</i>	Mapping the human speech cortex with a multi-scale foundation model	Edward Chang <i>Neurosurgeon, University of California, San Francisco</i> Shailee Jain <i>Postdoctoral Researcher in Neurosurgery, University of California, San Francisco</i> Ueli Rutishauser <i>Faculty Associate in Biology and Biological Engineering</i>
E - Chemical Engineering 135 Gates-Thomas 4:30 - 4:50 PM	<i>Sudarshanagopal Kunnavakkam</i> <i>Arthur A. Noyes SURF Fellow</i>	Building cell radios for deep-tissue wireless detection of biochemical factors	Mikhail G. Shapiro <i>Max Delbrück Professor of Chemical Engineering and Medical Engineering; Investigator, Howard Hughes Medical Institute</i> William Benman <i>Postdoctoral Scholar Research Associate in Chemical Engineering</i>
H - Bioengineering and Computation and Neural Systems 113 Spalding Lab 4:10 - 4:30 PM	<i>Jamie H. Kwon</i>	Transcriptomic analysis of organ transplant donor for the Tabula Sapiens Atlas	Stephen R. Quake <i>Professor of Bioengineering, Stanford University</i>
O - Mathematics 109 Jorgensen 3:10 - 3:30 PM	<i>Colin H. La</i>	Cutoff window for the Gibbs sampler process	Lingfu Zhang <i>Assistant Professor of Mathematics</i>
Poster Session Hameetman Multipurpose Room 4:30 - 5:45 PM	<i>Henry B. Lane</i> <i>Arthur R. Adams SURF Fellow</i>	Verifiably correct datasets in first-order logic for large language model reasoners	Matthew W. Thomson <i>Professor of Computational Biology; Investigator, Heritage Medical Research Institute</i> Tony Yue Yu <i>Professor of Mathematics</i>
P - Physics B122 Gates Annex 3:10 - 3:30 PM	<i>Al-Dan Le</i>	GR modeling in the search for dark companions in "isolated" pulsar timing anomalies	Susan V. Gardner <i>Arts & Sciences Endowed Professor of Physics, University of Kentucky</i>
Alumni Weekend: Session 2 106 Spalding Lab 4:30 - 4:50 PM	<i>Ryan J. Leal</i> <i>Citadel Global Fixed Income SURF Fellow</i>	Treasury buybacks to improve liquidity of securities markets	Darrell Duffie <i>Adams Distinguished Professor of Management and Professor of Finance, Stanford University</i> Jaksa Cvitanic <i>Richard N. Merkin Professor of Mathematical Finance</i>
N - Mathematics and Physics 224 Jorgensen 2:40 - 3:00 PM	<i>Justin D. Lee</i> <i>Northern California Associates SURF Fellow</i>	On the absolute prismatic cohomology of number rings	Matthias Flach <i>Professor of Mathematics</i>

F - Aeronautics, Electrical Engineering, and Medical Engineering 142 Keck 2:20 - 2:40 PM	Taekyung Lee <i>Frederick W. Drury, Jr., SURF Fellow</i>	Decentralized collaborative learning for fault estimation in multi-spacecraft systems	Soon-Jo Chung <i>Bren Professor of Control and Dynamical Systems; Senior Research Scientist, JPL</i> Sativik Kumar <i>Graduate Student in Aerospace</i> Vrushabh Zinage <i>Postdoctoral Scholar Research Associate in Computing and Mathematical Sciences</i>
N - Mathematics and Physics 224 Jorgensen 1:20 - 1:40 PM	Guanxi Li <i>Karen Roberts and Jim Sagawa SURF Fellow</i>	Fulton's intersection theory of Matroid	Paolo Aluffi <i>Visiting Professor in Mathematics</i>
P - Physics B122 Gates Annex 2:20 - 2:40 PM	Yingxiao Liao	Laser diode floating zone (LDFZ) growth and characterization of ultrahigh-purity crystals for skyrmion qubits	Xuemei Cheng <i>Assistant Professor of Physics, Bryn Mawr College</i> Stevan Nadj-Perge <i>Professor of Applied Physics and Materials Science</i>
L - Humanities and Social Sciences/Geological and Planetary Sciences 104 Watson 1:40 - 2:00 PM	Yuxin Liao <i>Guo/Zhao Family SURF Fellow</i>	Random utility with aggregated alternatives	Kota Saito <i>Professor of Economics</i>
M - Astronomy 125 Kerckhoff 1:20 - 1:40 PM	Yanfen Lin <i>Dale and Suzanne Burger SURF Fellow</i>	Modeling and Simulation of Antennas for Absolute Flux Measurements in Early Cosmology	Gregg W. Hallinan <i>Professor of Astronomy</i> Nivedita Mahesh <i>David and Ellen Lee Postdoctoral Scholar Research Associate in Astronomy</i>
E - Chemical Engineering 135 Gates-Thomas 2:40 - 3:00 PM	Alexis N. Lindenfelser <i>David S. Koons SURF Fellow</i>	PdCu catalyst engineering for electrochemical transformation of 1-butene to 2-butanone	Karthish Manthiram <i>Professor of Chemical Engineering and Chemistry; William H. Hurt Scholar</i> Chenyu Jiang <i>Graduate Student in Chemistry</i>
H - Bioengineering and Computation and Neural Systems 113 Spalding Lab 2:20 - 2:40 PM	Anthony K. Lindo <i>Samuel P. and Frances Krown SURF Fellow</i>	Lower time complexity of DNA winner take all neural network combining shared fuel amplification and pairwise annihilation	Lulu Qian <i>Professor of Bioengineering</i> Matthew Plazola <i>Graduate Student in Bioengineering</i>
A - Biology 125 Baxter 2:20 - 2:40 PM	Kara Z. Lo <i>Taylor Lawrence SURF Research Fellow</i>	Investigating the role of <i>Esrrb</i> in nephron development using zebrafish models	Marianne Bronner <i>Edward B. Lewis Professor of Biology</i> Tianli Qin <i>Postdoctoral Scholar Research Associate in Biology and Biological Engineering</i>

O - Mathematics 109 Jorgensen 3:50 - 4:10 PM	<i>Vivian Loh</i> <i>Samuel P. and Frances Krown SURF Fellow</i>	The negligible ideals of some symmetric groups, and its application to the Krull dimension of the integral negligible quotient of any finite group	Matthew M. Gherman <i>Hearst Postdoctoral Scholar Teaching Fellow in Mathematics</i>
J - Computer Science 128 Baxter 2:40 - 3:00 PM	<i>Justin Luo</i> <i>Carl F. Braun SURF Fellow</i>	Task-aware mesh decomposition for Sim2Real robotics learning	Hao Su <i>Associate Professor of Computer Science, University of California, San Diego</i> Gunter Niemeyer <i>Teaching Professor of Mechanical and Civil Engineering</i>
A - Biology 125 Baxter 1:40 - 2:00 PM	<i>Indeever Madireddy</i> <i>Arthur R. Adams SURF Fellow</i>	Development of mosaic nanoparticle vaccine candidates to protect against diverse sarbecovirus strains	Pamela J. Bjorkman <i>David Baltimore Professor of Biology and Biological Engineering; Merken Institute Professor</i> Alexander Cohen <i>Postdoctoral Scholar Research Associate in Biology and Biological Engineering</i>
Poster Session Hameetman Multipurpose Room 4:30 - 5:45 PM	<i>Raaghav Malik</i>	Dissecting zebrafish hunting behavior using deep reinforcement learning-trained recurrent neural networks	Kanaka Rajan <i>Associate Professor of Neurobiology, Harvard University</i> Markus Meister <i>Anne P. and Benjamin F. Biaggini Professor of Biological Sciences</i>
E - Chemical Engineering 135 Gates-Thomas 2:20 - 2:40 PM	<i>Maryan Malkosh</i> <i>Dr. and Mrs. Daniel C. Harris SURF Fellow</i>	Developing systems for multi-modal measurements of microbial activity	Sujit Datta <i>Professor of Chemical Engineering, Bioengineering, and Biophysics</i> Pablo Bravo <i>Postdoctoral Scholar Research Associate in Chemical Engineering</i>
Poster Session Hameetman Multipurpose Room 4:30 - 5:45 PM	<i>Neev Mangal</i> <i>Warren and Katharine Schlinger SURF Fellow</i>	Development of an inducible acoustic biosensor for protease activity using Plum Pox Virus protease and engineered gas vesicles	Mikhail G. Shapiro <i>Max Delbrück Professor of Chemical Engineering and Medical Engineering; Investigator, Howard Hughes Medical Institute</i> Jee Won Yang <i>Graduate Student in Chemical Engineering</i>

L - Humanities and Social Sciences/Geological and Planetary Sciences 104 Watson 1:20 - 1:40 PM	Aleksandar Marinkovic <i>Marcella Bonsall SURF Fellow</i>	Neural mechanisms of context-guided goal pursuit in humans	John P. O'Doherty <i>Fletcher Jones Professor of Decision Neuroscience</i> Sneha Aenugu <i>Graduate Student in Social Science</i>
Alumni Weekend: Session 2 106 Spalding Lab 3:30 - 3:50 PM	Priscila Marquez <i>Harry B. Gray SURF Fellow</i>	Ester accretion products from $\text{RO}_2 + \text{RO}_2$ chemistry of methyl vinyl ketone	Sarah E. Reisman <i>Bren Professor of Chemistry</i> Kristen E. Gardner <i>Postdoctoral Scholar Fellowship Trainee in Chemistry</i>
O - Mathematics 109 Jorgensen 1:20 - 1:40 PM	John G. Mattson <i>Carl F. Braun SURF Fellow</i>	Multivariable matrix monotone functions	Otte Heinaevaara <i>Scott Russell Johnson Postdoctoral Scholar Teaching Fellow in Mathematics</i>
N - Mathematics and Physics 224 Jorgensen 3:10 - 3:30 PM	Maverick S. McKown <i>John and Barbara Gee SURF Fellow</i>	Modeling and shielding of mobile electron beam for increased asphalt durability	Maria Spiropulu <i>Shang-Yi Ch'en Professor of Physics</i> Adi Bornheim <i>Research Scientist in High Energy Physics</i> Christopher J. Edwards <i>Project Engineer, Fermilab</i>
Alumni Weekend: Session 2 106 Spalding Lab 4:50 - 5:10 PM	Jude E. McLean <i>Carl F. Braun SURF Fellow</i>	From black hole seeds to Little Red Dots: Validating progenitors of active galactic nuclei	Philip F. Hopkins <i>Ira S. Bowen Professor of Theoretical Astrophysics</i> Daichi Tsuna <i>Sherman Fairchild Postdoctoral Scholar Research Associate in Theoretical Physics</i>
B - Biology 127 Baxter 3:30 - 3:50 PM	Rohan Mehta <i>Rossum Family SURF Fellow</i>	Modeling oscillating and rotating locomotion of active nematic droplets	Matthew W. Thomson <i>Professor of Computational Biology; Investigator, Heritage Medical Research Institute</i> Fan Yang <i>Postdoctoral Scholar Research Associate in Biology and Biological Engineering</i>

I - Computer Science 100 Powell-Booth 3:30 - 3:50 PM	<i>Anya B. Mischel</i> <i>Candace Rypisi SURF Fellow</i>	Data visualization for an exploratory sun emissions dashboard	Hillary Mushkin <i>Research Professor of Art and Design</i> Ashish Mahabal <i>Deputy Director, Caltech Center for Data-Driven Discovery</i> Allan Labrador <i>Staff Scientist in the Space Radiation Lab</i> Santiago V. Lombeyda <i>Senior Computational Scientist in the Center for Data-Driven Discovery</i>
P - Physics B122 Gates Annex 3:50 - 4:10 PM	<i>Sophie A. Mobley</i>	Estimating magnetic braking in individual millisecond pulsars to describe local galactic acceleration	Susan V. Gardner <i>Arts & Sciences Endowed Professor of Physics, University of Kentucky</i> Nick R. Hutzler <i>Assistant Professor of Physics</i>
O - Mathematics 109 Jorgensen 3:30 - 3:50 PM	<i>Piash Mondol</i>	Upper bounds on the optimal pebbling number of graphs with high minimum degree	Matthew M. Gherman <i>Heerst Postdoctoral Scholar Teaching Fellow in Mathematics</i>
N - Mathematics and Physics 224 Jorgensen 1:40 - 2:00 PM	<i>Samuel J. Moss</i>	Hodge-refined Whitehead torsion for algebraic deformations	Aravind Asok <i>Professor of Mathematics, University of Southern California</i> Tom B. Graber <i>Professor of Mathematics</i>
F - Aeronautics, Electrical Engineering, and Medical Engineering 142 Keck 1:40 - 2:00 PM	<i>James D. Muren</i> <i>Larson Scholar</i>	Multi-modal mobility morphobot redesign for fully autonomous payload delivery	Reza M. Nemovi <i>Research Engineering Assistant and Lab Coordinator in Aerospace</i> Joshua A. Gurovich <i>Lab Manager and Research Engineering Associate in Aerospace</i>
P - Physics B122 Gates Annex 1:40 - 2:00 PM	<i>Giulia Murgia</i> <i>David L. Goodstein SURF Fellow</i>	Mapping emission features of the interstellar medium with SPHEREx	James J. Bock <i>Marvin L. Goldberger Professor of Physics; Senior Research Scientist, JPL</i> Ari J. Cukierman <i>Postdoctoral Scholar Research Associate in Physics</i>
D - Chemistry 153 Noyes 2:40 - 3:00 PM	<i>Linus Z. Murphy</i> University of California, Los Angeles	Circular dichroism action spectroscopy for precise enantiomeric excess measurement	Mitchio Okumura <i>Professor of Chemical Physics</i> Leah Stevenson <i>Graduate Student in Chemistry</i>

N - Mathematics and Physics 224 Jorgensen 3:30 - 3:50 PM	<i>Damian R. Musk</i>	Quantum chaos and black holes in $N = 2$ SYK and D1-D5-P	Joseph D. Lykken <i>Deputy Director of Research, Fermilab</i> Kyriakos Papadodimas <i>Researcher in Theoretical Physics, CERN</i> Maria Spiropulu <i>Shang-Yi Ch'en Professor of Physics</i>
D - Chemistry 153 Noyes 4:30 - 4:50 PM	<i>Bao T. Nguyen</i> <i>John Stauffer SURF Fellow</i>	Probing SmI_2 -mediated inner sphere electron transfer to Mo^{IV} imido complexes in an electrocatalytic nitrogen reduction system	Jonas C. Peters <i>Bren Professor of Chemistry</i> Hoimin Jung <i>Postdoctoral Scholar Research Associate in Chemistry</i>
I - Computer Science 100 Powell-Booth 4:10 - 4:30 PM	<i>Duy H. Nguyen</i> <i>Larson Scholar</i>	Functional flow matching for self-supervised representation learning on time series data	Anima Anandkumar <i>Bren Professor of Computing and Mathematical Sciences</i> Jiayun Wang <i>Postdoctoral Scholar Research Associate in Computing and Mathematical Sciences</i> Jiachen Yao <i>Graduate Student in Computing and Mathematical Sciences</i>
A - Biology 125 Baxter 2:40 - 3:00 PM	<i>Mandoline H. Nguyen</i> <i>Loyola Marymount University Amgen Scholar</i>	Characterizing sacral-derived progenitors of the developing enteric nervous system	Marianne Bronner <i>Edward B. Lewis Professor of Biology</i> Jessica Jacobs-Li <i>Graduate Student in Biology</i>
Alumni Weekend: Session 1 106 Spalding Lab 2:00 - 2:20 PM	<i>Thanhthanh V. Nguyen</i> <i>José J. Garcia SURF Fellow</i>	Calibrating land models using FLUXNET observation data: Investigating the variation of vegetation parameters with environmental conditions	Tapio Schneider <i>Theodore Y. Wu Professor of Environmental Science and Engineering</i> Julia C. Sloan <i>Software Engineer in the Global Environmental Center</i>
N - Mathematics and Physics 224 Jorgensen 4:10 - 4:30 PM	<i>Tuyen T. Nguyen</i>	Improving Higgs boson decay classification into tau leptons via fine tuning of the particle transformer	Maria Spiropulu <i>Shang-Yi Ch'en Professor of Physics</i> Jennifer Ngadiuba <i>Researcher in Particle Physics</i> Raghav Kansal <i>Researcher, CERN</i>
P - Physics B122 Gates Annex 2:00 - 2:20 PM	<i>Saina Nikmehr</i>	Improving boresight pointing of the BICEP/Keck telescopes with CMB data	James J. Bock <i>Marvin L. Goldberger Professor of Physics; Senior Research Scientist, JPL</i> Kenny Lau <i>Postdoctoral Scholar Research Associate in Physics</i>

C - Chemistry
147 Noyes
2:40 - 3:00 PM

Alana C. Nisperos
Dr. George R. Rossman
SURF Fellow

Modeling the chemistry of the
RNO 90 and AS 209
protoplanetary disks:
A computational approach
revealing radial profiles using
CO and H₂O spectroscopic data

Geoffrey A. Blake
Professor of Cosmochemistry
and Planetary Sciences and
Professor of Chemistry
Emma Dahl
Postdoctoral Scholar Research
Associate in Planetary Science

Poster Session
Hameetman Multipurpose
Room
4:30 - 5:45 PM

Ama A. Obeng

Investigating thermophoresis
and self-thermophoresis of
aerosols in microgravity for
improved climate modeling

Jeffrey L. Moran
Professor of Mechanical
Engineering, George Mason
University
Jacob Velazquez
Research Assistant in
Mechanical Engineering,
George Mason University
John O. Dabiri
Centennial Professor of
Aeronautics and Mechanical
Engineering

B - Biology
127 Baxter
1:40 - 2:00 PM

Andrew N. Oldag
Marcella Bonsall SURF Fellow

Investigating the mechanisms of
Arabidopsis thaliana root
hydrotropism in the context of
osmotic stress

Trevor M. Nolan
Assistant Professor of Biology
and Biological Engineering
Irene Liao
Postdoctoral Scholar Research
Associate in Biology and
Biological Engineering

C - Chemistry
147 Noyes
1:40 - 2:00 PM

Grace H. Otos

Structural analysis of AgIH as a
comparative model for DPAGT1

William M. Clemons, Jr.
Arthur and Marian Hanisch
Memorial Professor of
Biochemistry
Jacob Kirsh
Postdoctoral Scholar Research
Associate in Chemistry

L - Humanities and Social
Sciences/Geological and
Planetary Sciences
104 Watson
2:00 - 2:20 PM

Kiran K. Pabla
Dr. Judith Goodstein
SURF Fellow

Data-driven prediction of land
use change using multi-modal
machine learning

Hannah Druckenmiller
Assistant Professor of
Economics; William H. Hurt
Scholar

Poster Session
Hameetman Multipurpose
Room
4:30 - 5:45 PM

Sanvi Pal

Generating synthetic neural
data via conditional diffusion for
broader applicability of
brain-computer interfaces

Nishal Shah
Assistant Professor of
Electrical and Computer
Engineering, Rice University
Siyuan Tao
Graduate Student in
Bioengineering, Rice University
Joel W. Burdick
Richard L. and Dorothy M.
Hayman Professor of
Mechanical Engineering and
Bioengineering; Research
Scientist, JPL

Poster Session Hameetman Multipurpose Room 4:30 - 5:45 PM	Joel Kai Chen Pang <i>John Stauffer SURF Fellow</i>	Characterizing redox dependent structural changes of RuBisCO	Karthish Manthiram <i>Professor of Chemical Engineering and Chemistry; William H. Hurt Scholar</i> Luis Burgos <i>Graduate Student in Chemical Engineering</i>
Q - Physics B125 Baxter 2:00 - 2:20 PM	Shrishti Pankaj Kulkarni <i>Robert L. Blinkenberg SURF Fellow</i>	Lambda-Gray Molasses cooling on the Cesium-133 D ₁ transition line for enhanced loading of atoms in optical tweezer arrays	Manuel A. Endres <i>Professor of Physics</i> Kon Leung <i>AWS Quantum Senior Postdoctoral Scholar Research Associate in Physics</i> Hannah Manetsch <i>Graduate Student in Applied Physics</i>
Q - Physics B125 Baxter 3:50 - 4:10 PM	Veronica M. Parakhin <i>Class of '36 SURF Fellow</i>	Impact of oscillating magnetic fields on skyrmion configurations	Gil Refael <i>Taylor W. Lawrence Professor of Theoretical Physics</i> Nina Del Ser <i>DFG Postdoctoral Scholar Fellowship Trainee in Theoretical Physics</i>
E - Chemical Engineering 135 Gates-Thomas 3:10 - 3:30 PM	Aarohi R. Patel <i>John Stauffer SURF Fellow</i>	Measuring energy usage in research labs towards reducing Caltech's energy consumption	Julia A. Kornfield <i>Elizabeth W. Gilloon Professor of Chemical Engineering</i> Dennis L. Ko <i>Staff Scientist in Chemical Engineering</i> Tasha Cammidge <i>Green Labs Coordinator</i> Maximilian Christman <i>Manager for Sustainability Programs</i>
M - Astronomy 125 Kerckhoff 3:30 - 3:50 PM	Nikhita Penugonda <i>Harold and Mary Zirin SURF Fellow</i>	The fast and the furious: Explosion properties of faint stripped-envelope supernovae from the Zwicky Transient Facility	Mansi M. Kasliwal <i>Professor of Astronomy</i> Kaustav Das <i>Graduate Student in Astrophysics</i>
P - Physics B122 Gates Annex 2:40 - 3:00 PM	Dylan Perez <i>Timothy Ryan SURF Fellow</i>	Constraining the axion-proton coupling with AGN	Gian F. Giudice <i>Theoretical Physicist, CERN</i> Sokratis Trifinopoulos <i>Theoretical Physicist, CERN</i> Elias R. Most <i>Assistant Professor of Theoretical Astrophysics</i>

H - Bioengineering and Computation and Neural Systems 113 Spalding Lab 3:50 - 4:10 PM	<i>Kyra T. Phaychanpheng</i> <i>James J. Morgan SURF Fellow</i>	Wake dynamics and propulsive efficiency of natural and biohybrid robotic jellyfish	John O. Dabiri <i>Centennial Professor of Aeronautics and Mechanical Engineering</i> Simon Anuszczyk <i>Graduate Student in Aerospace</i>
L - Humanities and Social Sciences/Geological and Planetary Sciences 104 Watson 2:20 - 2:40 PM	<i>Anna I. Piland</i> <i>Kiyo and Eiko Tomiyasu SURF Scholar</i>	Genomic and morphological insights into novel spirochete morphotypes occurring with sulfur-cycling microbial sediment rafts	Jared R. Leadbetter <i>Professor of Environmental Microbiology</i>
B - Biology 127 Baxter 3:10 - 3:30 PM	<i>Manasvi Pinnaka</i>	Investigating the effects of sex variations on trophectoderm function and embryo fitness using stem cell-based models	Magdalena D. Zernicka-Goetz <i>Bren Professor of Biology and Biological Engineering</i> Sergi Junyent <i>Postdoctoral Scholar Research Associate in Biology and Biological Engineering</i>
Alumni Weekend: Session 2 106 Spalding Lab 3:10 - 3:30 PM	<i>Virginia H. Pistilli</i>	Rhizosphere engineering of a sucrose-driven metabolic niche to direct plant carbon into microbial storage	José Dinneny <i>Professor of Biology, Stanford University</i> Christopher Dundas <i>Assistant Professor of Plant Biology, Stanford University</i> Jared R. Leadbetter <i>Professor of Environmental Microbiology</i>
G - Applied Physics and Materials Science 125 Steele Lab 1:40 - 2:00 PM	<i>Alexander P. Plekhanov</i> <i>Stephen Adelman Memorial SURF Fellow</i>	Practical spaceplates for ultra-compact optical systems	Andrei Faraon <i>William L. Valentine Professor of Applied Physics and Electrical Engineering</i> Phillippe M. Pearson <i>Graduate Student in Applied Physics</i>
A - Biology 125 Baxter 3:50 - 4:10 PM	<i>Architesh B. Prasad</i>	Analytical approaches for multi-modal proteomics for eye disease	Vinit Mahajan <i>Professor of Ophthalmology, Stanford University</i> Michael A. Vici <i>Teaching Professor of Chemical Engineering</i>
M - Astronomy 125 Kerckhoff 3:50 - 4:10 PM	<i>Oleksandra Pyshna</i> <i>Flintridge Foundation SURF Fellow</i>	YSN-Class (Young SuperNova Classifier)	Mansi M. Kasliwal <i>Professor of Astronomy</i> Ashish Mahabal <i>Deputy Director, Caltech Center for Data-Driven Discovery</i> Wynn Jacobson-Galan <i>Hubble Postdoctoral Scholar Research Associate in Astronomy</i>

F - Aeronautics, Electrical Engineering, and Medical Engineering 142 Keck 1:20 - 1:40 PM	Catherine Qu <i>Fred and Jean Felberg SURF Fellow</i>	Design and fabrication of an EDF-powered drone for emulating flight control systems of self-landing cryogenic rockets	Morteza Gharib <i>Hans W. Liepmann Professor of Aeronautics and Medical Engineering</i> Jack N. Caldwell <i>Graduate Student in Aerospace</i>
Poster Session Hameetman Multipurpose Room 4:30 - 5:45 PM	Guanni Qu University of California, Davis	Stress-testing distributional reinforcement learning: Calibrated risk control and out-of-distribution robustness in Atari under a 1M-step budget	Sergei G. Gukov <i>John D. MacArthur Professor of Theoretical Physics and Mathematics</i> Muhammad A. Shehper <i>Research Scientist in Mathematics</i>
N - Mathematics and Physics 224 Jorgensen 1:00 - 1:20 PM	Akshar D. Ramkumar	Reducibility and hardness of random quantum stabilizer codes	Vinod Vaikuntanathan <i>Ford Foundation Professor of Engineering, Massachusetts Institute of Technology</i> Hsin-Yuan (Robert) Huang <i>Assistant Professor of Physics</i>
R - Physics 115 Gates-Thomas 2:00 - 2:20 PM	Medha S. Ravi <i>Carl F. Braun SURF Fellow</i>	Photon pointing at a muon collider using 3D ECAL segmentation and machine learning	Harvey B. Newman <i>Professor of Physics</i> Kiley E. Kennedy <i>Dicke Postdoctoral Fellow in Physics</i>
N - Mathematics and Physics 224 Jorgensen 2:00 - 2:20 PM	Tisya C. Rawat	The Gaussian curvature of superminimal immersions in the round 4-sphere	Riccardo Caniato <i>Olga Taussky and John Todd Postdoctoral Scholar Teaching Fellow in Mathematics</i>
N - Mathematics and Physics 224 Jorgensen 2:20 - 2:40 PM	Eduardo H. Rodrigues do Nascimento	Irrationality proofs by arithmetic holonomy bounds	Vesselin A. Dimitrov <i>Professor of Mathematics</i>
E - Chemical Engineering 135 Gates-Thomas 2:00 - 2:20 PM	Lila I. Rodriguez-Aceves <i>Edward W. Hughes SURF Fellow</i>	Visualizing and understanding spatial microbial dynamics of free-living vs. symbiotic nitrogen-fixing bacteria in a novel cryolite soil proxy system	Sujit Datta <i>Professor of Chemical Engineering, Bioengineering, and Biophysics</i> Pablo Bravo <i>Postdoctoral Scholar Research Associate in Chemical Engineering</i>
Q - Physics B125 Baxter 2:40 - 3:00 PM	Hannah J. Rose	Analysis of optical timescales based on ultrastable cryogenic silicon resonators referenced by a strontium lattice clock	Jun Ye <i>Professor of Physics, University of Colorado Boulder</i> Dahyeon Lee <i>Postdoctoral Scholar in Physics, University of Colorado Boulder</i> Nelson Darkwah Oppong <i>Assistant Professor of Physics</i>

D - Chemistry 153 Noyes 3:10 - 3:30 PM	Carolyn Ruan <i>Philip Laipis in Memory of Professor Jerome Vinograd SURF Fellow</i>	Developing stopping criteria for C-H oxidation regioselectivity prediction	Sarah E. Reisman <i>Bren Professor of Chemistry</i> Anjali Gurajapu <i>Graduate Student in Chemistry</i>
F - Aeronautics, Electrical Engineering, and Medical Engineering 142 Keck 3:30 - 3:50 PM	Brendan J. Rudberg	Integrated distributed Bragg reflector for next-generation chip-scale beam-steering lasers	Mo Li <i>Professor of Electrical and Computer Engineering and Physics, University of Washington</i> Qixuan Lin <i>Graduate Student in Electrical and Computer Engineering, University of Washington</i> Lihong Wang <i>Bren Professor of Medical Engineering and Electrical Engineering</i>
E - Chemical Engineering 135 Gates-Thomas 1:20 - 1:40 PM	Amelia Saffron <i>Professor Fredrick H. Shair SURF Fellow</i>	Validation of cryolite as a proxy porous media for bacterial models	Sujit Datta <i>Professor of Chemical Engineering, Bioengineering, and Biophysics</i> Pablo Bravo <i>Postdoctoral Scholar Research Associate in Chemical Engineering</i>
M - Astronomy 125 Kerckhoff 2:20 - 2:40 PM	Maria J. Sanchez Rincon	Turbulence! A multi-scale investigation into the dynamics of the circumgalactic medium around UGC 7342	Mandy Chen <i>Brinson Postdoctoral Scholar Fellowship Trainee in Astronomy/Carnegie Observatories</i> Charles C. Steidel <i>Lee A. DuBridge Professor of Astronomy</i>
O - Mathematics 109 Jorgensen 1:00 - 1:20 PM	Toby J. Saunders-A'Court <i>The Associates SURF Fellow</i>	Distributional exploration bonuses	Sergei G. Gukov <i>John D. MacArthur Professor of Theoretical Physics and Mathematics</i> Muhammad A. Shehper <i>Research Scientist in Mathematics</i>
L - Humanities and Social Sciences/Geological and Planetary Sciences 104 Watson 3:10 - 3:30 PM	Luis Y. Serrano Laguna <i>Karen and James Cutts SURF Fellow</i>	Remote monitoring of inland water systems and their flux and gas transfer velocities in real-time	Woodward W. Fischer <i>Jean-Lou Chameau Professor of Geobiology</i> John S. Magyar <i>Research Scientist in Geology</i> Bryn Stewart <i>Foster and Coco Stanback Postdoctoral Scholar Research Associate in Environmental Science and Engineering</i> Simon Andren <i>Graduate Student in Geochemistry</i>

R - Physics 115 Gates-Thomas 3:50 - 4:10 PM	<i>Karen I. Shekyan</i> <i>W.H. Halpenny SURF Fellow</i>	Automating the measurement of high rate entanglement at INQNET	Maria Spiropulu <i>Shang-Yi Ch'en Professor of Physics</i> Raju Valivarthi <i>Research Scientist in Quantum Science and Technology</i>
Poster Session Hameetman Multipurpose Room 4:30 - 5:45 PM	<i>Ailsa X. Shen</i> <i>Dale and Suzanne Burger SURF Fellow</i>	Sparse autoencoder neural operators: Model recovery in function spaces	Anima Anandkumar <i>Bren Professor of Computing and Mathematical Sciences</i> Bahareh Tolooshams <i>Postdoctoral Scholar Research Associate in Computing and Mathematical Sciences</i>
R - Physics 115 Gates-Thomas 3:10 - 3:30 PM	<i>Ahaan Shetty</i> <i>Mellon Mays SURF Fellow</i>	Phase space formulation of quantum optics for measurement-device- independent quantum key distribution	Maria Spiropulu <i>Shang-Yi Ch'en Professor of Physics</i> Raju Valivarthi <i>Research Scientist in Quantum Science and Technology</i>
K - Mechanical Engineering 133 Guggenheim 3:30 - 3:50 PM	<i>Kensuke Shimojo</i> <i>Carl F. Braun SURF Fellow</i>	New experimental platform for investigating soliton and wave dynamics in 1D and 2D Polycatenated Architected Materials (PAMs)	Chiara Daraio <i>G. Bradford Jones Professor of Mechanical Engineering and Applied Physics; Investigator, Heritage Medical Research Institute</i> Xiaoxiao Xiong <i>Graduate Student in Physics</i>
R - Physics 115 Gates-Thomas 3:30 - 3:50 PM	<i>Shreyas Singh</i> <i>David L. Glackin Memorial SURF Fellow</i>	Dispersion compensation for entanglement distribution in quantum networks	Maria Spiropulu <i>Shang-Yi Ch'en Professor of Physics</i> Raju Valivarthi <i>Research Scientist in Quantum Science and Technology</i> Prathwiraj Umesh <i>Visiting Graduate Student in Physics</i>
R - Physics 115 Gates-Thomas 1:00 - 1:20 PM	<i>Pritvik Sinhadc</i> <i>Robert L. Blinkenberg SURF Fellow</i>	Energy scale of sphalerons	Harvey B. Newman <i>Professor of Physics</i>
K - Mechanical Engineering 133 Guggenheim 2:20 - 2:40 PM	<i>Logan A. Smith-Perkins</i> <i>Carol Carmichael SURF Fellow</i>	Improving the modeling of cement carbonation and carbon uptake	Melany L. Hunt <i>Dotty and Dick Hayman Professor of Mechanical Engineering</i> Ricardo A. Hernandez <i>Graduate Student in Mechanical Engineering</i>
F - Aeronautics, Electrical Engineering, and Medical Engineering 142 Keck 1:00 - 1:20 PM	<i>Lucas A. Smith</i> <i>Dr. Chandler C. Ross SURF Fellow</i>	Designing cryogenic liquid fuel flow and high pressure nitrogen gas pressure control valves for use in rocketry throttling applications	Morteza Gharib <i>Hans W. Liepmann Professor of Aeronautics and Medical Engineering</i>

C - Chemistry 147 Noyes 2:20 - 2:40 PM	Alan Song <i>Jack and Edith Roberts SURF Fellow</i>	Terahertz time-domain investigation of molecular quantum bits	Geoffrey A. Blake <i>Professor of Cosmochemistry and Planetary Sciences and Professor of Chemistry</i> Jax Dallas <i>Graduate Student in Chemistry</i>
P - Physics B122 Gates Annex 3:30 - 3:50 PM	Sage H. Stanton	Analyzing pulsar anomalies for compact binary searches	Susan V. Gardner <i>Arts & Sciences Endowed Professor of Physics, University of Kentucky</i> Nick R. Hutzler <i>Assistant Professor of Physics</i>
Alumni Weekend: Session 2 106 Spalding Lab 4:10 - 4:30 PM	Elin A. Stenmark	Laboratory characterization of Snowball Earth-analog cryoconites	Robin Wordsworth <i>Gordon McKay Professor of Environmental Science and Engineering, Harvard University</i> Charlotte Minsky <i>Graduate Student in Environmental Science and Engineering, Harvard University</i> Heather A. Knutson <i>Professor of Planetary Science</i>
Q - Physics B125 Baxter 4:10 - 4:30 PM	John M. Sullivan <i>Samuel P. and Frances Krown SURF Fellow</i>	Pion form factor from a three- point function in lattice quantum chromodynamics	Frank Lee <i>Associate Professor of Physics, George Washington University</i> Mark B. Wise <i>John A. McCone Professor of High Energy Physics</i>
B - Biology 127 Baxter 1:20 - 1:40 PM	Amina Tajammal	The neuro-immune axis in the dural meninges and its role in migraine	Diane Mathis <i>Morton Grove-Rasmussen Chair in Immunohematology, Harvard University</i> Miguel Marin Rodero <i>Graduate Student in Immunology, Harvard University</i> William M. Clemons, Jr. <i>Arthur and Marian Hanisch Memorial Professor of Biochemistry</i>
Poster Session Hameetman Multipurpose Room 4:30 - 5:45 PM	Katherine W. Tam <i>Eric T. Fung and Julie A. Buckley SURF Fellow</i>	Dissecting root thermomemory: Heat stress priming and elongation dynamics in <i>Arabidopsis</i> through automated phenotyping	Trevor M. Nolan <i>Assistant Professor of Biology and Biological Engineering</i> Xiaohui Li <i>Postdoctoral Scholar Research Associate in Biology and Biological Engineering</i>

J - Computer Science 128 Baxter 3:50 - 4:10 PM	<i>Yingyin Tan</i>	Adaptive modeling and exogenous support for neuromotor-impaired musculoskeletal models	Yanan Sui <i>Associate Professor of Computer Science, Tsinghua University</i> Gunter Niemeyer <i>Teaching Professor of Mechanical and Civil Engineering</i>
Alumni Weekend: Session 2 106 Spalding Lab 3:50 - 4:10 PM	<i>Adelynn S. Tang</i> <i>SURF Board SURF Fellow</i>	Integrated entangled photon pair source on thin-film lithium niobate	Alireza Marandi <i>Professor of Electrical Engineering and Applied Physics</i> Rithvik Ramesh <i>Graduate Student in Electrical Engineering</i> Thomas Zacharias <i>Graduate Student in Electrical Engineering</i>
R - Physics 115 Gates-Thomas 1:20 - 1:40 PM	<i>Alyna X. Tang</i> <i>Robert L. Blinkenberg SURF Fellow</i>	Developing photon reconstruction algorithm for the muon collider	Harvey B. Newman <i>Professor of Physics</i> Kiley E. Kennedy <i>Dicke Postdoctoral Fellow in Physics</i>
Poster Session Hameetman Multipurpose Room 4:30 - 5:45 PM	<i>Miigwan D. Tanner-Wostrel</i> <i>Toshi Kubota Aeronautics SURF Fellow</i>	Cold gas thruster design, analysis, manufacturing, and testing for roll control of a self landing rocket	Morteza Gharib <i>Hans W. Liepmann Professor of Aeronautics and Medical Engineering</i> Jack N. Caldwell <i>Graduate Student in Aerospace</i>
K - Mechanical Engineering 133 Guggenheim 1:40 - 2:00 PM	<i>Lindsay N. Taylor</i> <i>Lynn A. Booth and Kent Kresa SURF Fellow</i>	Extending frequency-based spatiotemporal reduction techniques to periodic systems	Tim E. Colonius <i>Frank and Ora Lee Marble Professor of Mechanical Engineering and Medical Engineering</i> Caroline Cardinale <i>Graduate Student in Mechanical Engineering</i>
J - Computer Science 128 Baxter 2:00 - 2:20 PM	<i>Ritvik S. Teegavarapu</i>	Gibbs conditioning principles for Markovian discrete-time interacting particle systems on regular graphs	Kavita Ramanan <i>Professor of Applied Mathematics, Brown University</i> Sarath Yasodharan <i>Assistant Professor of Industrial Engineering and Operations Research, Brown University</i> I-Hsun Chen <i>Graduate Student in Applied Mathematics, Brown University</i> Franca Hoffmann <i>Assistant Professor of Computing and Mathematical Sciences</i>

A - Biology 125 Baxter 1:20 - 1:40 PM	Emma L. Titus <i>Heather and Paul Haaga SURF Fellow</i>	Developing a spike S2 domain- based pan-coronavirus vaccine	Pamela J. Bjorkman <i>David Baltimore Professor of Biology and Biological Engineering; Merken Institute Professor</i> Chengcheng Fan <i>Postdoctoral Scholar Research Associate in Biology and Biological Engineering</i>
O - Mathematics 109 Jorgensen 2:20 - 2:40 PM	Grace H. To <i>Joanna Wall Muir SURF Fellow</i>	Analyzing the asymptotic behavior of the integrality gap for the Goemans-Linial SDP relaxation of the Uniform Sparsest Cut	Seung-Yeon Ryoo <i>Olga Tausky and John Todd Postdoctoral Scholar Teaching Fellow in Mathematics</i>
Poster Session Hameetman Multipurpose Room 4:30 - 5:45 PM	Madison Elle C. Tongco <i>Mary Vodopia SURF Fellow</i>	Polymer synthesis in <i>Comamonas testosteroni</i> KF-1 under nitrogen depletion	Ludmilla Aristilde <i>Associate Professor of Civil and Environmental Engineering, Northwestern University</i> Xinyu Chen <i>Graduate Student in Civil and Environmental Engineering, Northwestern University</i> Jared R. Leadbetter <i>Professor of Environmental Microbiology</i>
H - Bioengineering and Computation and Neural Systems 113 Spalding Lab 1:40 - 2:00 PM	Emily Tu <i>John Stauffer SURF Fellow</i>	Episomal DNA isolation for oncogenic virus detection and viral vector discovery	Rustem F. Ismagilov <i>Ethel Wilson Bowles and Robert Bowles Professor of Chemistry and Chemical Engineering; Merkin Institute Professor</i> Natalie Wu-Woods <i>Graduate Student in Bioengineering</i> Christopher Neimeth <i>Graduate Student in Bioengineering</i>
C - Chemistry 147 Noyes 1:00 - 1:20 PM	Grace R. Tuhabonye <i>Ernest H. Swift SURF Fellow</i>	Decompression of the bacteriophage MS2's genome utilizing cell-free systems	William M. Clemons, Jr. <i>Arthur and Marian Hanisch Memorial Professor of Biochemistry</i> Yan Zhang <i>Postdoctoral Scholar Research Associate in Chemistry and Chemical Engineering</i>
P - Physics B122 Gates Annex 4:10 - 4:30 PM	Avinash Vadali <i>Bill Davis SURF Fellow</i>	Beyond-Landau phase transitions in D4 non-Abelian topological order	Jason F. Alicea <i>William K. Davis Professor of Theoretical Physics</i> Pablo Sala <i>Sherman Fairchild Postdoctoral Scholar Research Associate in Theoretical Physics</i>

M - Astronomy 125 Kerckhoff 4:50 - 5:10 PM	<i>Mariana Vale Taveira</i> <i>Saul and Joan Cogen Memorial SURF Fellow</i>	Anomaly detection in astrophysical time series using recurrence plots	Matthew J. Graham <i>Research Professor of Astronomy</i> Kira Nolan <i>PostBAC Research Fellow in Astronomy</i>
Q - Physics B125 Baxter 3:30 - 3:50 PM	<i>Amith Varambally</i> <i>The Associates SURF Fellow</i>	Time-dependent Schrödinger equation simulations of Floquet- driven exciton dynamics in monolayer WS ₂ as a platform for carrier-envelope phase- controlled light-matter interaction	David Hsieh <i>Donald A. Glaser Professor of Physics</i> Mingyao Guo <i>Graduate Student in Physics</i>
J - Computer Science 128 Baxter 1:40 - 2:00 PM	<i>Annika S. Viswesh</i>	Knowledge graph-informed predictions of multigene transcriptional profiles	Pradeep Ravikumar <i>Professor of Machine Learning, Carnegie Mellon University</i> Chandler Squires <i>Postdoctoral Research Associate in Machine Learning, Carnegie Mellon University</i> Frederick D. Eberhardt <i>Professor of Philosophy</i>
M - Astronomy 125 Kerckhoff 4:30 - 4:50 PM	<i>Veronika C. Voss</i> <i>Bob and Carole Chapman Minority SURF Fellow</i>	Efforts toward precise stellar characterization for Keck Planet Finder spectrographs	Andrew W. Howard <i>Professor of Astronomy</i> Luke Handley <i>Graduate Student in Astrophysics</i>
Alumni Weekend: Session 1 106 Spalding Lab 1:40 - 2:00 PM	<i>Keyu Wan</i> <i>DaRin Butz SURF Fellow</i>	Multimodal modeling and prediction of neuromuscular fatigue for intelligent control during functional electrical stimulation of a murine hindlimb	Shriya Srinivasan <i>Professor of Bioengineering, Harvard University</i> Patrick Pariseau <i>Graduate Student in Bioengineering, Harvard University</i> John O. Dabiri <i>Centennial Professor of Aeronautics and Mechanical Engineering</i>
J - Computer Science 128 Baxter 3:10 - 3:30 PM	<i>Ellie J. Wang</i>	Implementing finite element modeling in the MS-Human-700 musculoskeletal model	Yanan Sui <i>Associate Professor of Computer Science, Tsinghua University</i> Joel W. Burdick <i>Richard L. and Dorothy M. Hayman Professor of Mechanical Engineering and Bioengineering; Research Scientist, JPL</i>

J - Computer Science 128 Baxter 3:30 - 3:50 PM	<i>Erica Wang</i> <i>Mellon Mays SURF Fellow</i>	Modular motion tokenization for high-dimensional motor control: A case study on MS-Human-700	Yanan Sui <i>Associate Professor of Computer Science, Tsinghua University</i> Adam C. Wierman <i>Carl F Braun Professor of Computing and Mathematical Sciences</i>
J - Computer Science 128 Baxter 1:20 - 1:40 PM	<i>Olivia Y. Wang</i> <i>The Associates SURF Fellow</i>	Rigorous investigation of human baselines towards more comprehensive VQA benchmarks and robust VLMs	Pietro Perona <i>Allen E. Puckett Professor of Electrical Engineering</i> Katelyn Haly <i>Graduate Student in Neurobiology</i> Raphaela H. Kang <i>Graduate Student in Computation and Neural Systems</i>
L - Humanities and Social Sciences/Geological and Planetary Sciences 104 Watson 2:40 - 3:00 PM	<i>Wendy Wang</i> <i>Holo Family SURF Fellow</i>	Cultivation and analysis of aquatic anaerobic oxalotrophic methanogenic microbial communities	Jared R. Leadbetter <i>Professor of Environmental Microbiology</i> Yuk L. Yung <i>Professor of Planetary Science; Senior Research Scientist, JPL</i>
G - Applied Physics and Materials Science 125 Steele Lab 2:40 - 3:00 PM	<i>Daniel Q. Wareham</i> <i>Anne and Ray Destabelle SURF Fellow</i>	Nanofabrication of metal-vacuum-metal tunnel junctions via angle deposition	Axel Scherer <i>Bernard A. Neches Professor of Electrical Engineering, Applied Physics, and Physics; Merkin Institute Professor</i> Geraldine Silva Galindo <i>Graduate Student in Medical Engineering</i>
K - Mechanical Engineering 133 Guggenheim 3:10 - 3:30 PM	<i>Katelyn S. Waugh</i> <i>Robert J. McEliece and David Rutledge SURF Fellow</i>	Exploring the role of scoured flax fiber concentrations on the printability and structural behavior of 3D-printed <i>Chlorella vulgaris</i> -HEC biocomposites	Chiara Daraio <i>G. Bradford Jones Professor of Mechanical Engineering and Applied Physics; Investigator, Heritage Medical Research Institute</i> Israel Kellersztein <i>Postdoctoral Scholar Research Associate in Mechanical and Civil Engineering</i>

D - Chemistry
153 Noyes
3:50 - 4:10 PM

David V. Welt

Characterization of high-pressure high-temperature synthetic nanodiamond precursors

Jonathan S. Owen
Associate Professor of Chemistry, Columbia University
Daybis Tencio
Graduate Student in Chemistry, Columbia University
Augustin Braun
Postdoctoral Research Scientist in Chemistry, Columbia University
Johnson Dalmieda
Graduate Student in Chemistry, Columbia University
Theodor Agapie
John Stauffer Professor of Chemistry

B - Biology
127 Baxter
3:50 - 4:10 PM

Noelle Y. Wilkinson
Carolyn Ash SURF Fellow

Building a brain cellular microscopy data portal for accelerating AI-driven segmentation and analysis in neurodegenerative diseases

David A. Van Valen
Assistant Professor of Biology and Biological Engineering; Investigator, Heritage Medical Research Institute; HHMI Freeman Hrabowski Scholar
Joud Mari
Graduate Student in Computation and Neural Systems

L - Humanities and Social Sciences/Geological and Planetary Sciences
104 Watson
1:00 - 1:20 PM

Elizabeth J. Won
Mr. and Mrs. Robert C. Loschke SURF Fellow

Framing artificial intelligence in law through science fiction

Jennifer A. Jahner
Professor of English

A - Biology
125 Baxter
3:10 - 3:30 PM

Jaidyn M. Woods
Carl F. Braun SURF Fellow

Developing an approach to assess early misfolding events in Huntington's Disease

Judith Frydman
Professor of Genetics, Stanford University
Korbin Kleczko
Graduate Student in Biology, Stanford University
Ivana Bukvin
Postdoctoral Scholar in Biology, Stanford University
Rebecca M. Voorhees
Professor of Biology and Biological Engineering; HHMI Freeman Hrabowski Scholar

N - Mathematics and Physics 224 Jorgensen 3:50 - 4:10 PM	Jiahui Xie	Investigating and improving Z-boson mass resolution for Higgs decay to dimuon searches	Maria Spiropulu <i>Shang-Yi Ch'en Professor of Physics</i> Si Xie <i>Visitor in High Energy Physics</i> Cristian Peña <i>Associate Scientist, CERN</i> Christina Wang <i>Lederman Fellow in Physics, Fermilab</i>
Poster Session Hameetman Multipurpose Room 4:30 - 5:45 PM	Samuel W. Xie <i>Dale and Suzanne Burger SURF Fellow</i>	Uncovering prospective planning and subgoal representation in human neurons	John P. O'Doherty <i>Fletcher Jones Professor of Decision Neuroscience</i> Cooper Grossman <i>Postdoctoral Scholar Research Associate in Neuroscience</i>
R - Physics 115 Gates-Thomas 2:20 - 2:40 PM	Zilan Xiong	Investigating methods for constraining cosmological parameters in the Pantheon+ analysis	Charles L. Steinhardt <i>Assistant Professor of Physics, University of Missouri</i> Philip F. Hopkins <i>Ira S. Bowen Professor of Theoretical Astrophysics</i>
D - Chemistry 153 Noyes 4:10 - 4:30 PM	Alex S. Xu <i>Janet Lai SURF Fellow</i>	Elucidating the mechanism of nitrogenase model compound- catalyzed carbon-sulfur bond cleavage	Jonas C. Peters <i>Bren Professor of Chemistry</i> John Ovian <i>Postdoctoral Scholar Fellowship Trainee in Chemistry</i>
F - Aeronautics, Electrical Engineering, and Medical Engineering 142 Keck 2:00 - 2:20 PM	Emily Y. Xu <i>DaRin Butz SURF Fellow</i>	Adaptive throttle control for autonomous race cars using meta-learning	Soon-Jo Chung <i>Bren Professor of Control and Dynamical Systems; Senior Research Scientist, JPL</i> Thomas A. Berrueta <i>Postdoctoral Scholar Research Associate in Computing and Mathematical Sciences</i>
A - Biology 125 Baxter 3:30 - 3:50 PM	Maya C. Yie <i>Carl F. Braun SURF Fellow</i>	Simultaneous mapping of multiway interactions: Understanding the mechanisms of enhancer-promoter interactions through SPRITE data	Mitchell Guttman <i>Professor of Biology</i> Isabel N. Goronzy <i>MD/PhD Student</i> Allen W. Chen <i>Graduate Student in Biochemistry and Molecular Biophysics</i>
H - Bioengineering and Computation and Neural Systems 113 Spalding Lab 3:10 - 3:30 PM	Clara Yu	Interpretable deep learning for functional fine-mapping of chromatin QTLs in Alzheimer's Disease	David Knowles <i>Associate Professor of Computer Science, Columbia University/NY Genome Center</i> Shinsuke Shimojo <i>Gertrude Baltimore Professor of Experimental Psychology</i>

F - Aeronautics, Electrical
Engineering, and Medical
Engineering
142 Keck
2:40 - 3:00 PM

Daopeng Yuan
Shandong University
VURP Fellow

Single-shot passive ultrafast
all-optical replicated Kerr
imaging (SPUARK)

Lihong Wang
*Bren Professor of Medical
Engineering and Electrical
Engineering*
Junfu Zheng
*Graduate Student in Electrical
Engineering*

A - Biology
125 Baxter
2:00 - 2:20 PM

Evan Z. Zhang
Dr. Paraskeva N. Danailov
SURF Fellow

Design of synthetic caspase-
based circuits for programmable
cancer therapy

Michael B. Elowitz
Roscoe Gilkey Dickinson
Professor of Biology and
Bioengineering; Investigator,
Howard Hughes Medical
Institute
Andrew Lu
Graduate Student in Biology
Lukas Moeller
Graduate Student in
Bioengineering

K - Mechanical Engineering
133 Guggenheim
2:00 - 2:20 PM

Weihan Zhang
Frank W. Wood SURF Fellow

Inverse scattering solution for
kidney stone detection

Tim E. Colonius
Frank and Ora Lee Marble
Professor of Mechanical
Engineering and Medical
Engineering
Chris Zhang
Graduate Student in
Mechanical Engineering

Poster Session
Hameetman Multipurpose
Room
4:30 - 5:45 PM

Zhehao Zhang
John Stauffer SURF Fellow

Towards building a "toolbox" for
the synthesis of
bicyclo[3.2.1]octanes

Sarah E. Reisman
Bren Professor of Chemistry
Kala Youngblood
Graduate Student in Chemistry