

Presentations in Alphabetical Order by Student

Oral Presentation	<i>Sebastien N. Abadi</i> <i>Jean J. Dixon SURF Fellow</i>	Scanning Tunneling Spectroscopy of Quasiparticle Interference on $\text{Cr}_{0.15}(\text{Bi}_{0.1}\text{Sb}_{0.9})_{1.85}\text{Te}_3$	Nai-Chang Yeh <i>Professor of Physics</i> Akiyoshi Park <i>Graduate Student in Physics</i>
Oral Presentation	<i>Adam H. Abbas</i> <i>Øistein and Rita A. Skjellum SURF Fellow</i>	Laser Heated MBE Growth of Rare Earth Oxides for Applications in Quantum Computing Networks	Joseph L. Falson <i>Assistant Professor of Materials Science; William H. Hurt Scholar</i>
Oral Presentation	<i>Nicholas S. Adamo</i>	Generative Feedback and Memory Replay for Few-Shot Learning	Anima Anandkumar <i>Bren Professor of Computing and Mathematical Sciences</i>
Poster Presentation	<i>Olivia L. Addington</i> <i>Carolyn Ash SURF Fellow</i>	3D Navigation System for Catheter-Based Procedures Using a Flexible Printed Circuit Board	Azita Emami <i>Andrew and Peggy Cherng Professor of Electrical Engineering and Medical Engineering</i> Saransh Sharma <i>Graduate Student in Electrical Engineering</i>
Oral Presentation	<i>Shubh Agrawal</i> <i>Rita A. and Øistein Skjellum SURF Fellow</i>	Planet Detection & Analysis and Instrument Calibration Modules for High Resolution Spectroscopy Using Integrated Field Spectrographs	Dimitri P. Mawet <i>Professor of Astronomy; Research Scientist, JPL</i> Jean-Baptiste Ruffio <i>David and Ellen Lee Postdoctoral Scholar</i> <i>Research Associate in Astronomy</i>
Poster Presentation	<i>Eric P. Amaro</i>	Visualization of Buoyancy-Driven Flow Inside a Heated Annular Vessel	Joseph E. Shepherd <i>C.L. "Kelly" Johnson Professor of Aeronautics and Mechanical Engineering</i> Conor Martin <i>Graduate Student in Aerospace</i>

Oral Presentation	<i>Emile T. Anand</i>	Solving a Water Crisis: Identifying Chemicals in Metabolomic Samples Through Dimensionality Reduction	Charles L. Steinhardt <i>Associate Professor, Dark Cosmology Centre, Niels Bohr Institute, University of Copenhagen</i> Martin Hansen <i>Associate Professor of Environmental Science, Aarhus University</i> Rob B. Phillips <i>Fred and Nancy Morris Professor of Biophysics, Biology, and Physics</i>
Oral Presentation	<i>Nishka Arora</i> <i>Homer J. Stewart SURF Fellow</i>	Contamination Model for Spacecraft Associated Surfaces	Ashish Mahabal <i>Lead Computational and Data Scientist, Caltech Center for Data-Driven Discovery</i> Nitin K. Singh <i>Postdoctoral Scholar in Chemistry</i>
Poster Presentation	<i>Juan A. Arvelo</i> <i>Kiyo and Eiko Tomiyasu SURF Scholar</i>	Mechanical Characterization of Nanoarchitected Materials	Julia R. Greer <i>Ruben F. and Donna Mettler Professor of Materials Science, Mechanics, and Medical Engineering</i> Andrew C. Friedman <i>Graduate Student in Chemical Engineering</i>
Oral Presentation	<i>Abdullah O. Ateyeh</i> <i>Samuel P. and Frances Krown SURF Fellow</i>	Financing Sources and the Trajectory of Innovation	Michael J. Ewens <i>Professor of Finance and Entrepreneurship</i>
Oral Presentation	<i>Wasundara R. Athukoralalage</i> Michigan State University	Using Pulse Phase Resolved Spectroscopy to Study Accretion of Be X-ray Binary IGR J21347+4737	Fiona A. Harrison <i>Harold A. Rosen Professor of Physics</i> Sean N. Pike <i>Graduate Student in Physics</i>
Poster Presentation	<i>Carlos D. Ayala</i>	Flare Star Candidates in the Epoch 2.1 & 1.1 Footprint	Gregg W. Hallinan <i>Professor of Astronomy</i> Dillon Dong <i>Graduate Student in Astrophysics</i>

Oral Presentation	Reid A. Banciella	Fluorescence Assay to Track Intracellular Transfer of Mitochondria in <i>Drosophila melanogaster</i>	Bruce A. Hay <i>Professor of Biology</i> Marlene L. Biller <i>Research Scientist in Biology and Biological Engineering</i>
Poster Presentation	Junzhe Bao Rice University	Simulating Titanium-based Millimeter-wave Packaging With High Kinetic Inductance	Mohammad Mirhosseini <i>Assistant Professor of Electrical Engineering and Applied Physics</i>
Oral Presentation	Alexandra G. Bardon <i>Kiyo and Eiko Tomiyasu SURF Scholar</i>	Regulation of Backpropagating Action Potentials by Input to Oblique Dendrites Modulates Coincidence Detection in Layer 5 Pyramidal Neurons	Michael Hausser <i>Professor of Neural Computation</i> Brendan Bicknell <i>Researcher in Neural Computation</i>
Oral Presentation	Zoe G. Beatty <i>Ray Owen SURF Fellow</i>	Engineering pH-insensitive Opioid Biosensors	Henry A. Lester <i>Professor of Biology</i> Anand Muthusamy <i>Graduate Student in Chemistry</i>
Oral Presentation	Charles G. Beck Columbia University <i>BaBar SURF Fellow</i>	Investigation of Sensitivities of Mu2e Experiment for Low Momentum Electrons	David G. Hitlin <i>Professor of Physics</i> Bertrand Echenard <i>Research Professor of High Energy Physics</i>
Oral Presentation	Jonathan T. Beltran University of California, Los Angeles <i>Information Science and Technology (IST) WAVE Fellow</i>	Zebra Classification Using Triplet Loss	Pietro Perona <i>Allen E. Puckett Professor of Electrical Engineering</i>
Oral Presentation	Nachiket D. Bhanushali <i>Samuel N. Vodopia and Carol J. Hasson SURF Fellow</i>	Studying the Light Output of the Barrel Timing Layer Sensors for the MIP Timing Detector	Maria Spiropulu <i>Shang-Yi Ch'en Professor of Physics</i>
Oral Presentation	Camila Blanes Instituto Tecnológico Autónomo de México	The Effects of Electoral Institutions on Party Discipline: An Analysis of Speech and Votes in Mexican Congress	Gabriel Lopez-Moctezuma <i>Assistant Professor of Political Science</i>

Oral Presentation	<i>Daria C. Bonds</i> California State University, San Marcos <i>Southern California Edison WAVE Fellow</i>	Azimuthal Dependence of the Circumgalactic Medium in the FIRE Simulations	Philip F. Hopkins <i>Professor of Theoretical Astrophysics</i>
Oral Presentation	<i>Milo Brown</i> Diablo Valley College <i>Joseph Rhodes, Jr., WAVE Fellow</i>	X-Ray Bright vs Faint Active Galactic Nuclei (AGN): Using the Structure Function to Compare AGN Variability	Matthew J. Graham <i>Research Professor of Astronomy</i>
Oral Presentation	<i>Matticus S. Brown</i> <i>Samuel P. and Frances Krown SURF Fellow</i>	Determining the Effects of a Methionine Surrogate on Viral Production for Bio- Orthogonal Non-Canonical Amino-Acid Tagging (BONCAT)	Victoria J. Orphan <i>James Irvine Professor of Environmental Science and Geobiology</i> Alon Philosofof <i>Postdoctoral Scholar Research Associate in Biology and Biological Engineering</i>
Oral Presentation <i>joint presentation with Steven Yee</i>	<i>Antonio M. Caceres</i>	Developing Assignments for CS 022: "Data Structures and Parallelism"	Adam Blank <i>Teaching Assistant Professor of Computing and Mathematical Sciences</i>
Poster Presentation	<i>JC Daniel Calso</i> University of California, Los Angeles	Exploring Photoactivated Formulations for the Treatment of Degenerative Myopia	Robert H. Grubbs <i>Victor and Elizabeth Atkins Professor of Chemistry; Nobel Laureate</i> Christopher B. Marotta <i>Research Scientist in Chemistry and Chemical Engineering</i>
Oral Presentation	<i>Luis F. Camargo-Carlos</i> <i>Taylor W. Lawrence SURF Fellow</i>	Linear Waves on Extremal Kerr-Newman Spacetime	Yannis Angelopoulos <i>Sherman Fairchild Instructor in Mathematics</i>
Oral Presentation	<i>Virginia M. Canestraight</i> <i>John Stauffer SURF Fellow</i>	Electro-Cycled Photoredox Catalysis for Benzyl Chloride Functionalization: A Mechanistic Investigation	Jonas C. Peters <i>Bren Professor of Chemistry</i> Michael Zott <i>Graduate Student in Chemistry</i>

Oral Presentation	<i>Ann H. Caplin</i> <i>Mr. and Mrs. Robert C. Loschke SURF Fellow</i>	An Update on Detection of BFB in Cancer Cells Using Human Genomic Data	Vineet Bafna <i>Professor of Computer Science and Engineering, University of California, San Diego</i> David A. Van Valen <i>Assistant Professor of Biology and Biological Engineering; Investigator, Heritage Medical Research Institute</i>
Oral Presentation	<i>Jacqueline V. Castellanos</i> <i>Santa Monica College VURP Fellow</i>	Validating iso-ML, a Machine Learning Approach for Predicting Gene Isoforms From 10X scRNA-seq	Lior S. Pachter <i>Bren Professor of Computational Biology and Computing and Mathematical Sciences</i>
Oral Presentation	<i>Hugo Chacon</i> <i>Pasadena City College Information Science and Technology (IST) Venerable WAVE Fellow</i>	Locating Leaks in Water Distribution Networks Using a Computational Sensor Selection (Cosense) Strategy	Katherine L. Bouman <i>Assistant Professor of Computing and Mathematical Sciences, Electrical Engineering, and Astronomy; Rosenberg Scholar</i> Yisong Yue <i>Professor of Computing and Mathematical Sciences</i>
Poster Presentation	<i>Anjini Chandra</i> <i>Brenda and Louis J. Alpinieri SURF Fellow</i>	Modeling Burst-Wave Lithotripsy Treatment for Kidney Stones	Tim E. Colonius <i>Frank and Ora Lee Marble Professor of Mechanical Engineering</i> Shunxiang Cao <i>Postdoctoral Scholar Research Associate in Mechanical and Civil Engineering</i>
Oral Presentation	<i>Anjini Chandra</i> <i>Brenda and Louis J. Alpinieri SURF Fellow</i>	Modeling Burst-Wave Lithotripsy Treatment for Kidney Stones	Tim E. Colonius <i>Frank and Ora Lee Marble Professor of Mechanical Engineering</i> Shunxiang Cao <i>Postdoctoral Scholar Research Associate in Mechanical and Civil Engineering</i>

Poster Presentation	<i>Katherine Chang</i> <i>Guo/Zhao Family</i> <i>SURF Fellow</i>	Using Remote Webcam-Based Eye-Tracking to Test Theories of Salience and Rational Inattention in Economic Decisions	Colin F. Camerer <i>Robert Kirby Professor of Behavioral Economics</i> Xiaomin Li <i>Postdoctoral Scholar</i> <i>Research Associate in Behavioral Economics and Neuroscience</i>
Oral Presentation	<i>Diego I. Chavez</i> <i>The Aerospace Corporation</i> <i>SURF Fellow</i>	Decision Theoretic Uncertainty Quantification for Machine Learning	Houman Owhadi <i>Professor of Applied and Computational Mathematics and Control and Dynamical Systems</i> Peyman Tavallali <i>Member of the Technical Staff, JPL</i>
Oral Presentation	<i>Rahul I. Chawlani</i> <i>Kiyo and Eiko Tomiyasu</i> <i>SURF Scholar</i>	Analysis of Super Peraluminous Granite Rocks From the Proterozoic-Archean Transition Using Whole Rock Analysis and Mineral Separation	Claire Bucholz <i>Assistant Professor of Geology</i>
Oral Presentation	<i>Haoxuan Chen</i> <i>Class of '36 SURF Fellow</i>	Learning High-dimensional Non-gaussian Graphical Models via Neighborhood Selection Methods	Youssef M. Marzouk <i>Boeing Assistant Professor of Aeronautics and Astronautics,</i> <i>Massachusetts Institute of Technology</i> Ricardo Baptista <i>Graduate Student in Computational Engineering,</i> <i>Massachusetts Institute of Technology</i> Andrew M. Stuart <i>Bren Professor of Computing and Mathematical Sciences</i>
Oral Presentation	<i>Stephanie Y. Chen</i>	Analysis of Di-Higgs to Two Bottom Quarks and Two Photons With Machine Learning Techniques for the High Luminosity LHC	Harvey B. Newman <i>Marvin L. Goldberger Professor of Physics</i> Nan Lu <i>Postdoctoral Scholar</i> <i>Research Associate in Physics</i>

Oral Presentation	<i>Yishu (Pearl) Chen</i>	Algebraic Structures of Homeomorphism and Diffeomorphism Groups of Manifolds	Lei Chen <i>Noether Instructor in Mathematics</i>
Oral Presentation	<i>Alice Y. Cheng</i>	Enhancing Ionized Gas Cloud Simulations With Machine Learning	Thomas Greve <i>Associate Professor, Cosmic Dawn Center, DTU Space</i> David H. Reitze <i>Research Professor of Physics</i>
Oral Presentation	<i>Bryson H. Choy</i> University of Southern California	CytoSPRITE: A Split-Pool Barcoding Technique to Capture Cytoplasmic RNA-RNA Interactions Involved in Co-Translational Regulation and Protein Synthesis	Mitchell Guttman <i>Professor of Biology</i> Jamie R. Wangen <i>Postdoctoral Scholar Research Associate in Biology and Biological Engineering</i>
Oral Presentation	<i>Colin E. Chun</i> <i>Marcella Bonsall SURF Fellow</i>	Generation of Meta-Features for Regression	Pablo A. Moscato <i>Professor of Computer Science, University of Newcastle Australia</i> S. George Djorgovski <i>Professor of Astronomy and Data Science</i>
Oral Presentation	<i>Norman H. Chung</i> <i>Howell N. Tyson, Sr., SURF Fellow</i>	Actuated Particle Jamming as a Potential Foundation for Smart, Structured Fabrics	Chiara Daraio <i>G. Bradford Jones Professor of Mechanical Engineering and Applied Physics; Investigator, Heritage Medical Research Institute</i> Tracy Lu <i>Graduate Student in Mechanical Engineering</i>
Oral Presentation	<i>Thomas H. Clark</i> <i>David L. Glackin Memorial SURF Fellow</i>	Why Do Galaxies Die?	Charles L. Steinhardt <i>Associate Professor, Dark Cosmology Centre, Niels Bohr Institute, University of Copenhagen</i> Vadim Rusakov <i>PhD Fellow, Cosmic Dawn Center, Niels Bohr Institute, University of Copenhagen</i> David Hsieh <i>Professor of Physics</i>

Poster Presentation	Lily E. Coffin <i>Dr. George R. Rossman SURF Fellow</i>	Investigation of Unknown Emission in Comet NEOWISE Spectra Using Comparative Spatial Profiles	Geoffrey A. Blake <i>Professor of Cosmochemistry and Planetary Sciences and Professor of Chemistry</i> Maria Camarca <i>Graduate Student in Planetary Science</i>
Oral Presentation	Adnan Contractor	Neural Style Transfer for Improved Synthetic PC-MRI Image Quality	Shreyas S. Vasanawala <i>Professor of Radiology; Director of MRI, Stanford Children's Hospital</i> Matthew J. Middione <i>Research Scientist in Radiology, Stanford University</i> Yisong Yue <i>Professor of Computing and Mathematical Sciences</i>
Oral Presentation	Stephanie Cortez <i>John Stauffer SURF Fellow</i>	Double Reductive Coupling Approach to Cylindrocyclophanes A and F	Sarah E. Reisman <i>Bren Professor of Chemistry</i> Sara E. Dibrell <i>Graduate Student in Chemistry</i>
Oral Presentation	Matthew J. Cox <i>John Stauffer SURF Fellow</i>	Changes in Electron Spin-Lattice Relaxation Rates in Nitroxyl Radicals as a Result of Spin-Phonon Coupling	Ryan G. Hadt <i>Assistant Professor of Chemistry</i> Alec Follmer <i>Postdoctoral Scholar in Chemistry</i>
Oral Presentation	Miles V. Cua <i>Carl F. Braun SURF Fellow</i>	Harmonic Maps and the Null Support Function	Peter Smillie <i>Harry Bateman Instructor in Mathematics</i>
Oral Presentation	Suchitra S. Dara	Investigating a Putative, Sexually Antagonistic Role of an Essential piRNA Pathway Component in <i>Drosophila melanogaster</i>	Alexei Aravin <i>Professor of Biology</i> Peiwei Chen <i>Graduate Student in Biology</i>

Oral Presentation	<i>Rajeev Datta</i>	Developing Optimal U-Net Variant to Reconstruct Undersampled Magnetic Resonance Imaging (MRI) Images to Improve Image Quality	Shreyas S. Vasanawala <i>Professor of Radiology; Director of MRI, Stanford Children's Hospital</i> Yan Wu <i>Research Scientist in Radiology, Stanford University</i> Doris Y. Tsao <i>Professor of Biology; Investigator, Howard Hughes Medical Institute</i>
Oral Presentation	<i>Audrey J. DeVault</i> <i>Dr. Janice D. Pata SURF Fellow</i>	Blind X-ray Pulsation Searches in Millisecond Pulsars	Fiona A. Harrison <i>Harold A. Rosen Professor of Physics</i> Amruta Jaodand <i>Postdoctoral Scholar Research Associate in Physics</i>
Oral Presentation	<i>Andrei C. Diaconu</i>	Why Do All Galaxies Evolve the Same Way?	Charles L. Steinhardt <i>Associate Professor, Dark Cosmology Centre, Niels Bohr Institute, University of Copenhagen</i> David J. Stevenson <i>Marvin L. Goldberger Professor of Planetary Science</i>
Oral Presentation	<i>Tighe F. Didden</i> <i>John Stauffer SURF Fellow</i>	Synthesis of Water-Soluble Chain-Transfer Polymerization Agent for Enhanced Circulation of Exogenous Gas Vesicles	Robert H. Grubbs <i>Victor and Elizabeth Atkins Professor of Chemistry; Nobel Laureate</i> Jeong Hoon Ko <i>Visitor in Chemistry</i>
Oral Presentation	<i>Rachel Q. Ding</i>	Graph Neural Networks for Cell Tracking	David A. Van Valen <i>Assistant Professor of Biology and Biological Engineering; Investigator, Heritage Medical Research Institute</i>
Oral Presentation	<i>Gabrielle M. Dituri</i> <i>David L. Goodstein SURF Fellow</i>	Exploring the Discovery Reach of the CMS Muon System in Detecting Long-Lived Particles	Maria Spiropulu <i>Shang-Yi Ch'en Professor of Physics</i>

Poster Presentation	<i>Patrick J. Donohoe</i> <i>Kiyo and Eiko Tomiyasu</i> <i>SURF Scholar</i>	Simulating the Impact of Rockfall Erosion on Mars Topography	Michael P. Lamb <i>Professor of Geology</i> Ben Cardenas <i>Postdoctoral Scholar</i> <i>Fellowship Trainee in</i> <i>Geology</i>
Oral Presentation	<i>Yun E. Du</i> <i>John Stauffer SURF Fellow</i>	Convergent Approach Towards the Synthesis of Ineleganolide	Brian M. Stoltz <i>Professor of Chemistry;</i> <i>Investigator, Heritage</i> <i>Medical Research Institute</i> Tyler J. Fulton <i>Graduate Student in</i> <i>Chemistry</i>
Oral Presentation	<i>Isabella M. Dula Razzolini</i> <i>Holo Family SURF Fellow</i>	Implementation of an Aerosol Activation Scheme	Tapio Schneider <i>Theodore Y. Wu Professor of</i> <i>Environmental Science</i> <i>and Engineering; Senior</i> <i>Research Scientist, JPL</i> Anna Jaruga <i>Postdoctoral Scholar, JPL</i>
Oral Presentation	<i>Ismail M. Elmengad</i> <i>Saul and Joan Cogen</i> <i>Memorial SURF Fellow</i>	Measuring the Time Resolution of the TOFHIR Chip for CMS Phase-2 Upgrade	Maria Spiropulu <i>Shang-Yi Ch'en Professor of</i> <i>Physics</i>
Oral Presentation	<i>Aaron O. Feldman</i> <i>Mr. and Mrs. Robert C.</i> <i>Loschke SURF Fellow</i>	Using Bayesian Inference to Quantify Uncertainty in Glacier Ice Friction and Velocities	Houman Owhadi <i>Professor of Applied and</i> <i>Computational Mathematics</i> <i>and Control and Dynamical</i> <i>Systems</i> Peyman Tavallali <i>Member of the Technical</i> <i>Staff, JPL</i>
Oral Presentation	<i>Eve J. Fine</i> <i>Rossum Family</i> <i>SURF Fellow</i>	A Family of pH-Tolerant Genetically Encoded Biosensors for Rapidly Acting Antidepressants (RAADs)	Henry A. Lester <i>Professor of Biology</i> Kallol Bera <i>Postdoctoral Scholar</i> <i>Research Associate in</i> <i>Biology and Biological</i> <i>Engineering</i>
Oral Presentation	<i>Tyler E. Fox</i> <i>John Stauffer SURF Fellow</i>	Synthesis of Electrolytes for Rechargeable Mg and Ca Ion Batteries	Theodor Agapie <i>Professor of Chemistry</i> Meaghan Bruening <i>Graduate Student in</i> <i>Chemistry</i>

Oral Presentation	Tea D. Freedman-Susskind <i>Carl F. Braun SURF Fellow</i>	Determining Atmospheric Formation of C5 and C6 ROOR Compounds	Paul O. Wennberg <i>R. Stanton Avery Professor of Atmospheric Chemistry and Environmental Science and Engineering</i> Sara Murphy <i>Graduate Student in Environmental Science and Engineering</i>
Oral Presentation	Diana C. Frias Franco	Smart Fabrics With Active-Fiber and Interlocking-Particle Controlled Stiffness	Chiara Daraio <i>G. Bradford Jones Professor of Mechanical Engineering and Applied Physics; Investigator, Heritage Medical Research Institute</i> Tracy Lu <i>Graduate Student in Mechanical Engineering</i>
Oral Presentation	Sahana Gangadharan	Computational and Experimental Framework for Understanding Dauer Development in Nematodes	Paul W. Sternberg <i>Bren Professor of Biology</i> Vivek Venkatachalam <i>Assistant Professor of Physics, Northeastern University</i>
Oral Presentation	Lucy Y. Gao	3D Mesh Sculpting From 2D User Input	Santiago V. Lombeyda <i>Senior Computational Scientist in the Center for Data-Driven Discovery</i> S. George Djorgovski <i>Professor of Astronomy and Data Science</i>
Oral Presentation	Pranjal Garg All India Institute of Medical Sciences, Rishikesh	Dye Filling in Head Neurons and Characterization of Head Neuroanatomy in New Nematode Species	Paul W. Sternberg <i>Bren Professor of Biology</i> James C. Tan <i>Postdoctoral Scholar Research Associate in Biology and Biological Engineering</i>
Oral Presentation	Jesse George-Akpenyi Massachusetts Institute of Technology <i>Information Science and Technology (IST) WAVE Fellow</i>	Developing Metrics and Identifying Key Parameters for Prosthetic Foot Design	Aaron D. Ames <i>Bren Professor of Mechanical and Civil Engineering and Control and Dynamical Systems</i>

Oral Presentation	<i>Mahideremariyam N. Gessesse</i>	Cardiac and Single Neuron Responses to Inter-Ictal Epileptiform Discharges in the Human Brain	Ueli Rutishauser <i>Professor of Neuroscience, Cedars-Sinai Medical Center</i> Clayton P. Mosher <i>Postdoctoral Scientist in Neurosurgery, Cedars-Sinai Medical Center</i>
Oral Presentation	<i>Adishree S. Ghatore</i>	Understanding Effects of Deep Brain Electrical Stimulation on Individual Neurons in the Human Brain During Memory Tasks	Ueli Rutishauser <i>Professor of Neuroscience, Cedars-Sinai Medical Center</i> Clayton P. Mosher <i>Postdoctoral Scientist in Neurosurgery, Cedars-Sinai Medical Center</i>
Oral Presentation	<i>Nina G. Gilkyson</i> Mount Holyoke College <i>Carl F. Braun WAVE Fellow</i>	Structural and Vibrational Investigation of Romerite Under Icy Satellite Conditions	Jennifer M. Jackson <i>William E. Leonhard Professor of Mineral Physics</i> Olivia Pardo <i>Graduate Student in Geophysics</i>
Poster Presentation	<i>Vale Glasser</i> Harvey Mudd College <i>VURP Fellow</i>	Practical Limits on the Density of Neurochemical Sensors	Jessica L. Arlett <i>Staff Scientist in Condensed Matter Physics</i>
Oral Presentation	<i>Alan Goldfarb</i> University of Southern California <i>VURP Fellow</i>	The Berkovich Projective Line as a Coarse-Graining of Non-Archimedean Space	Sarthak Parikh <i>Postdoctoral Scholar Teaching Fellow in Mathematics</i>
Oral Presentation	<i>Shir Goldfinger</i> <i>Kiyo and Eiko Tomiyasu SURF Scholar</i>	Simulation of Single- and Multi-Ingredient Food Designs for Three-Dimensional Food Printing	Hod Lipson <i>Professor of Mechanical Engineering and Data Science, Columbia University</i> Jonathan Blutinger <i>Graduate Student in Mechanical Engineering, Columbia University</i> Melany L. Hunt <i>Dotty and Dick Hayman Professor of Mechanical Engineering</i>
Oral Presentation	<i>Elia P. Gorokhovskiy</i> <i>Carl F. Braun SURF Fellow</i>	A Quantitative Neumann's Lemma and Investigation of Group Growth	Omer Tamuz <i>Professor of Economics and Mathematics</i>

Oral Presentation	<i>Aikaterini Gorou</i> <i>Thomas Lauritsen</i> <i>SURF Fellow</i>	Reaction Pathways for the Synthesis of Laser-Coolable Molecules	Nick R. Hutzler <i>Assistant Professor of Physics</i> Phelan Yu <i>Graduate Student in Physics</i>
Poster Presentation	<i>Akshay R. Gowrishankar</i>	Election Forensics and Anomaly Detection in the 2020 Georgia Election Cycle	R. Michael Alvarez <i>Professor of Political and Computational Social Science</i>
Oral Presentation	<i>Hannah E. Grauer</i> <i>Carl F. Braun SURF Fellow</i>	Extended DGNSS-Vision Integration for Relative Spacecraft Navigation	Soon-Jo Chung <i>Bren Professor of Aerospace and Control and Dynamical Systems;</i> <i>Research Scientist, JPL</i> Alexei Harvard <i>Researcher in Aerospace</i>
Oral Presentation	<i>Anastasiya Grebin</i> <i>Dr. and Mrs. James M. Kendall SURF Fellow</i>	Introducing miRNA Control Elements Into Gene Therapy Constructs	Viviana Gradinaru <i>Professor of Neuroscience and Biological Engineering</i> Acacia Hori <i>Graduate Student in Bioengineering</i>
Oral Presentation	<i>Tomas P. Grossmark</i> <i>Donald S. Clark</i> <i>SURF Fellow</i>	Effect of Acid Rain Conditions on Aluminosilicates	Katherine T. Faber <i>Simon Ramo Professor of Materials Science</i> Celia S. Chari <i>Graduate Student in Materials Science</i>
Oral Presentation	<i>Joshua T. Grosso</i> <i>Soli Deo Gloria</i> <i>SURF Fellow</i>	Coq Formalization of Alpha-Equivalence and Type Systems	Mike Vanier <i>Teaching Professor of Computing and Mathematical Sciences</i>
Oral Presentation	<i>Wenyan Guan</i> <i>Arthur Rock SURF Fellow</i>	Designing Grating Couplers for Coupling to Hybrid Photonic Crystal Resonators	Andrei Faraon <i>Professor of Applied Physics and Electrical Engineering</i> Chun Ju Wu <i>Graduate Student in Physics</i>

Oral Presentation	<i>Rishi Gundakaram</i> <i>Carl F. Braun SURF Fellow</i>	Development of a Meta-Feature Generation Algorithm for Univariate Regression	Pablo A. Moscato <i>Professor of Computer Science, University of Newcastle Australia</i> S. George Djorgovski <i>Professor of Astronomy and Data Science</i>
Oral Presentation	<i>Bilge Gungoren</i> <i>Frederick W. Drury, Jr., SURF Fellow</i>	Using Cell-Free DNA to Noninvasively Analyze Tumor-Infiltrating Lymphocytes	Aadel A. Chaudhuri <i>Assistant Professor of Radiation Oncology, Genetics, and Computer Science, Washington University School of Medicine in St. Louis</i> David A. Van Valen <i>Assistant Professor of Biology and Biological Engineering; Investigator, Heritage Medical Research Institute</i>
Oral Presentation	<i>Brandon Guo</i>	Score-Based Stochastic Differential Equations for Zero-Shot Adversarial Robustness	Anima Anandkumar <i>Bren Professor of Computing and Mathematical Sciences</i>
Oral Presentation	<i>Tanmay Gupta</i> <i>The Associates SURF Fellow</i>	Developing and Testing Lumped Element Kinetic Inductance Detectors for the LMT and TIM	Charles M. Bradford <i>Research Scientist, JPL; Visiting Associate in Physics</i> Reinier Janssen <i>NASA Postdoctoral Fellow, JPL</i>
Oral Presentation	<i>Utkarsh Gupta</i> Indian Institute of Technology, Delhi	Analysis of Composite Columns: Granular Material In-Fill Inside a Confining Annulus	José E. Andrade <i>George W. Housner Professor of Civil and Mechanical Engineering</i> Siavash Monfared <i>Postdoctoral Scholar Research Associate in Mechanical and Civil Engineering</i>
Oral Presentation	<i>Xander J. Hall</i> <i>Ernest R. Roberts SURF Fellow</i>	Using Machine Learning to Classify Transients From Palomar Gattini-IR Telescope	Mansi M. Kasliwal <i>Professor of Astronomy</i> Dmitry Duev <i>Research Scientist in Astronomy</i>

Oral Presentation	<i>Tiba H. Hamza</i> <i>Peter A. Lindstrom, Jr., SURF Fellow</i>	Structure of the Karyopherin Alpha Nucleoporin 53 Complex	André Hoelz <i>Professor of Chemistry</i> Chia-Yu Chien <i>Graduate Student in Biochemistry and Molecular Biophysics</i>
Poster Presentation	<i>Sarah Hashash</i> <i>Bryant Family SURF Fellow</i>	Detecting and Deterring Harmful Online Speech Directed at American Election Officials	R. Michael Alvarez <i>Professor of Political and Computational Social Science</i>
Oral Presentation	<i>Kimia Hassibi</i> <i>Karen and James Cutts SURF Fellow</i>	Constraining HCN Production via HCN ₂ at Titan for Applications to Prebiotic Chemistry	Yuk L. Yung <i>Professor of Planetary Science; Senior Research Scientist, JPL</i> Danica Adams <i>Graduate Student in Planetary Science</i>
Oral Presentation	<i>Marguerite Hewitt</i> <i>Samuel P. and Frances Krown SURF Fellow</i>	Discovering Drugs That Act as Specific Inhibitors of DNA2	Judith L. Campbell <i>Professor of Chemistry and Biology</i>
Oral Presentation	<i>Sujai O. Hiremath</i>	Impact of Rebroadcasters on Online Display Advertising Auctions	Matthew S. Shum <i>J. Stanley Johnson Professor of Economics</i>
Oral Presentation	<i>Martin S. Holmes</i> <i>Samuel P. and Frances Krown SURF Fellow</i>	<i>E. coli</i> Genome Minimization via REXER-GENESIS Re-coding	Kaihang Wang <i>Assistant Professor of Biology and Biological Engineering</i>
Oral Presentation	<i>Halle D. Holzbauer</i>	Construction of Novel Genelet Circuits for GFP Production	Richard M. Murray <i>Thomas E. and Doris Everhart Professor of Control and Dynamical Systems and Bioengineering</i>
Oral Presentation	<i>Alexandria Hong</i> <i>Ronan Armaan Mack SURF Fellow</i>	A Versatile SHOP-type Nickel Catalyst Platform for Copolymerization of Ethylene and Polar Monomers	Theodor Agapie <i>Professor of Chemistry</i> Shuoyan Xiong <i>Graduate Student in Chemistry</i>

Oral Presentation	Beryl A. Hovis-Afflerbach <i>Arthur R. Adams SURF Fellow</i>	High Mass Stars Stripped in Binaries Missing at Low Metallicity: Tests of Stellar Astrophysics and Gravitational Wave Progenitors	Ylva L. Goetberg <i>Nashman Postdoctoral Fellow, Carnegie Observatories</i> James W. Fuller <i>Assistant Professor of Theoretical Astrophysics</i>
Oral Presentation	Hannah F. Hu <i>Samuel N. Vodopia and Carol J. Hasson SURF Fellow</i>	Large-scale Genomic Rearrangements in <i>E. coli</i> Using Programmable, RNA-guided Transposons	Samuel H. Sternberg <i>Assistant Professor of Biochemistry and Molecular Biophysics, Columbia University</i> Kaihang Wang <i>Assistant Professor of Biology and Biological Engineering</i>
Poster Presentation	Xinyue Hu <i>Victor Neher SURF Fellow</i>	Characterizing Enteric Neural Elements With Hybridization Chain Reaction to Understand <i>de novo</i> Neurogenesis	Marianne Bronner <i>Distinguished Professor of Biology</i>
Oral Presentation	Teresa Huang	Using Computer Vision to Classify Stars and Galaxies	Andreas L. Faisst <i>Staff Scientist in IPAC</i> Ranga Ram Chary <i>Staff Scientist in IPAC</i>
Oral Presentation	Wesley Huang <i>Carl F. Braun SURF Fellow</i>	Nascent RNA Sequencing Reveals a Role for Malat1 in Co-transcriptional Splicing	Mitchell Guttman <i>Professor of Biology</i> Prashant Bhat <i>Graduate Student in Biology</i>
Oral Presentation	Isabella U. Hurvitz <i>John Stauffer SURF Fellow</i>	Engineering Robust and Tunable Synthetic Oscillations of CAR Expression in T-Lymphocytes: Towards Enabling Functional Therapeutic Longevity in CAR-T Cells	Mikhail G. Shapiro <i>Professor of Chemical Engineering; Investigator, Howard Hughes Medical Institute</i> Shirin Shivaiei <i>Graduate Student in Bioengineering</i>
Oral Presentation	Derek T. Ing	Finding Millisecond Optical Transients and Variable Sources in Zwicky Transient Facility Data Using Unsupervised Anomaly Detection Techniques	Mansi M. Kasliwal <i>Professor of Astronomy</i> Igor Andreoni <i>Postdoctoral Scholar in Astronomy</i>

Oral Presentation	<i>Daniel M. Israel</i> <i>Dr. Paul C. Bartlett</i> <i>SURF Fellow</i>	Brain Parcellation With Causal Feature Learning	Frederick D. Eberhardt <i>Professor of Philosophy</i>
Oral Presentation	<i>Neil C. Janwani</i>	Design of a Soft Robotic Ankle-Exoskeleton Using a Novel Actuation Technique	Aaron D. Ames <i>Bren Professor of</i> <i>Mechanical and Civil</i> <i>Engineering and Control</i> <i>and Dynamical Systems</i> Maegan Tucker <i>Graduate Student in</i> <i>Mechanical Engineering</i>
Oral Presentation	<i>Rashi R. Jeeda</i> <i>Carol Carmichael</i> <i>SURF Fellow</i>	Analyzing the Effects of Community Diversity on Microbial Strain Transmission in <i>ex vivo</i> Human Gut Communities	David Relman <i>Thomas C. and Joan M.</i> <i>Merigan Professor of</i> <i>Microbiology and</i> <i>Immunology, Stanford</i> <i>University</i>
Oral Presentation	<i>Jenny Ji</i> <i>John Stauffer SURF Fellow</i>	Modulating Factors of Household Transmission of SARS-CoV-2 in a Community- Based Study	Rustem F. Ismagilov <i>Ethel Wilson Bowles and</i> <i>Robert Bowles Professor of</i> <i>Chemistry and Chemical</i> <i>Engineering</i> Alexander Winnett <i>Graduate Student in</i> <i>Biology</i>
Oral Presentation	<i>Abigail Y. Jiang</i> <i>The Associates</i> <i>SURF Fellow</i>	Advancing Molecular Beam Epitaxy of Oxide Materials	Joseph L. Falson <i>Assistant Professor of</i> <i>Materials Science;</i> <i>William H. Hurt Scholar</i>
Oral Presentation	<i>David Jin</i> <i>Hugh F. and Audy Lou</i> <i>Colvin SURF Fellow</i>	Neural Operator on Fluid Control Problems	Anima Anandkumar <i>Bren Professor of</i> <i>Computing and</i> <i>Mathematical Sciences</i>
Oral Presentation	<i>Sabrina A. Jones</i> University of Arkansas <i>Amgen Scholar</i>	Analysis of Local Field Potentials During Zebra Finch Song Production After Viral Induced HVC Neuronal Circuit Degradation	Carlos Lois <i>Research Professor of</i> <i>Biology</i>
Oral Presentation	<i>Ely B. Jrade</i>	Estimating the Computational Complexity of Uryson Width	Fedor Manin <i>Assistant Professor of</i> <i>Mathematics, University of</i> <i>California, Santa Barbara</i> Peter Smillie <i>Harry Bateman Instructor</i> <i>in Mathematics</i>

Oral Presentation	James M. Jusuf <i>Shirley and Carl Larson SURF Fellow</i>	Modeling Combinatorial Transcription Regulation in Metazoans	Michael B. Elowitz <i>Professor of Biology and Bioengineering; Investigator, Howard Hughes Medical Institute</i> Bo Gu <i>Postdoctoral Scholar Fellowship Trainee in Biology and Biological Engineering</i>
Oral Presentation	Mandar N. Juvekar University of Rochester	On the Carbery Rectangle Problem	Nets H. Katz <i>International Business Machines Professor of Mathematics</i>
Oral Presentation	Elin S. Kang <i>Janet Lai SURF Fellow</i>	Triggering Mechanochemistry With Acoustic Cavitation	Mikhail G. Shapiro <i>Professor of Chemical Engineering; Investigator, Howard Hughes Medical Institute</i> Yuxing Yao <i>Postdoctoral Scholar Research Associate in Chemical Engineering</i>
Poster Presentation	Manav Kant	Learning Meaningful Representations of Cellular Dynamics With Deep Convolutional Autoencoders	David A. Van Valen <i>Assistant Professor of Biology and Biological Engineering; Investigator, Heritage Medical Research Institute</i>
Oral Presentation	Rohit Kantipudi <i>Professor Fredrick H. Shair SURF Fellow</i>	Towards an Intra-Tumoral Gas Vesicle Cavitation and Checkpoint Inhibitor Payload Therapy Achieved via Bacterial Delivery	Mikhail G. Shapiro <i>Professor of Chemical Engineering; Investigator, Howard Hughes Medical Institute</i>
Oral Presentation	Ish Kaul Princeton University	Analyzing the Higgs to WW Mass Regression Using Particle Net	Maria Spiropulu <i>Shang-Yi Ch'en Professor of Physics</i>
Oral Presentation	Chan Gi Kim <i>Sidney and Nancy Petersen SURF Fellow</i>	Controlling the Morphology of Swell-in Architected Tungsten Structures	Julia R. Greer <i>Ruben F. and Donna Mettler Professor of Materials Science, Mechanics, and Medical Engineering</i> Max Saccone <i>Graduate Student in Chemical Engineering</i>

Oral Presentation	<i>Jiwoo Kim</i> <i>John Stauffer SURF Fellow</i>	Understanding Mechanism of N-terminal Methionine Excision in Bacteria	Shu-ou Shan <i>Altair Professor of Chemistry</i> Chien-I Yang <i>Graduate Student in Chemistry</i>
Oral Presentation	<i>Joseph H. Kim</i> <i>Simons Foundation Autism Research Initiative (SFARI) SURF Fellow</i>	Identifying Brain Rhythms During Innate Behaviors in the Laboratory Mouse	David J. Anderson <i>Seymour Benzer Professor of Biology; Investigator, Howard Hughes Medical Institute</i> Stefanos Stagkourakis <i>Postdoctoral Scholar Fellowship Trainee in Biology and Biological Engineering</i>
Oral Presentation	<i>Alexandra P. Klipfel</i> <i>Marcella Bonsall SURF Fellow</i>	Granular Dynamics in Microgravity: Transition From Stick-Slip to Fluid Behavior	Karen Daniels <i>Professor of Physics, North Carolina State University</i> Joseph L. Kirschvink <i>Nico and Marilyn Van Wingen Professor of Geobiology</i>
Oral Presentation	<i>Esme G. Knabe</i> <i>Edward C. and Alice Stone SURF Fellow</i>	Thermal Studies on the BTL Readout Module for the CMS Phase II MIP Timing Detector	Maria Spiropulu <i>Shang-Yi Ch'en Professor of Physics</i>
Poster Presentation	<i>Athena Kolli</i> <i>Toni and Bob Perpall SURF Fellow</i>	Modeling and Testing of an Electrically Heated Hotspot	Joseph E. Shepherd <i>C.L. "Kelly" Johnson Professor of Aeronautics and Mechanical Engineering</i> Donner Schoeffler <i>Graduate Student in Aerospace</i>

Oral Presentation	<i>Rupa Kurinchi-Vendhan</i>	Exploring the Spatial Super-Resolution Models for National Wind and Solar Data	Steven H. Low <i>Frank J. Gilloon Professor of Computing and Mathematical Sciences and Electrical Engineering</i> Lucien D. Werner <i>Graduate Student in Computing and Mathematical Sciences</i> Björn Lütgens <i>Graduate Student in Aeronautics and Astronautics, Massachusetts Institute of Technology</i> Ritwik Gupta <i>Graduate Student in Electrical Engineering and Computer Science, University of California, Berkeley</i>
Oral Presentation	<i>Shalini Kurinchi-Vendhan</i>	Collapse of Fuzzy Dark Matter in Simulations	Andrew J. Benson <i>Scientist, Carnegie Observatories</i> Xiaolong Du <i>Postdoctoral Associate, Carnegie Observatories</i> Philip F. Hopkins <i>Professor of Theoretical Astrophysics</i>
Poster Presentation	<i>Charlotte S. LaFayette</i> <i>Arthur E. Lamel Memorial SURF Fellow</i>	Factorial Ideals on Hurwitz Quaternions	Anna M. Szumowicz <i>Harry Bateman Instructor of Mathematics</i>
Oral Presentation	<i>Pik Hoi Lam</i> <i>Richard H. Cox SURF Fellow</i>	Reaction Optimization and Limitations of Pyridine Cyclizations With Glutaryl Chloride	Sarah E. Reisman <i>Bren Professor of Chemistry</i> Jeff K. Kerkovius <i>Graduate Student in Chemistry</i>
Oral Presentation	<i>Anna P. Lapteva</i>	Electromagnetic Actuation System (EMAS): Haptic Guidance for Enhancing Motor Sequence Learning	Shinsuke Shimojo <i>Gertrude Baltimore Professor of Experimental Psychology</i> Daw-An Wu <i>Senior Research Scientist in Social Neuroscience</i>
Oral Presentation	<i>Iris T. Lee</i>	Quantifying Regeneration in <i>Drosophila</i> Tibia	Lea A. Goentoro <i>Professor of Biology</i>

Poster Presentation	Jina Lee <i>Taylor W. Lawrence</i> <i>SURF Fellow</i>	Synthesis, Analysis, and Preliminary Computational Modeling of Novel Si-Cu-Ca Icosahedral Quasicrystal Formation	Paul D. Asimow <i>Eleanor and John R. McMillan Professor of Geology and Geochemistry</i> Jinping Hu <i>Staff Scientist in Geology and Geochemistry</i>
Oral Presentation	Depei Li	Optimizing Memetic Algorithm for Symbolic Regression	Pablo A. Moscato <i>Professor of Computer Science, University of Newcastle Australia</i> S. George Djorgovski <i>Professor of Astronomy and Data Science</i>
Poster Presentation	Sophie H. Li <i>Robert L. Blinkenberg</i> <i>SURF Fellow</i>	Doubling Cavity for Atom Interferometry With Momentum Squeezed States for Gravitational Sensing	Mark Kasevich <i>Professor of Physics and Applied Physics, Stanford University</i> Maria Spiropulu <i>Shang-Yi Ch'en Professor of Physics</i>
Oral Presentation	Damon Lin	Digitalizing Twentieth Century Parisian Death Records to Build a Searchable Database	Jean-Laurent Rosenthal <i>Rea A. and Lela G. Axline Professor of Business Economics</i>
Oral Presentation	Elaine Lin <i>Dr. Paraskeva N. Danailov</i> <i>SURF Fellow</i>	Developing Biosensors for Rapidly Acting Antidepressants (RAADs) in Various Organelles	Henry A. Lester <i>Professor of Biology</i> Kallol Bera <i>Postdoctoral Scholar Research Associate in Biology and Biological Engineering</i>
Oral Presentation	Hsuan-Hung (Shawn) Lin Wesleyan University	Elucidation of Interactions Between Ribosome-Nascent Chain Complex With Translocon Using Translational Pausing of XBP1u mRNA	Shu-ou Shan <i>Altair Professor of Chemistry</i> HaoHsuan Hsieh <i>Graduate Student in Chemistry</i>
Oral Presentation	Joy Liu	Towards Integration of ERT With Virtual Worlds	Santiago V. Lombeyda <i>Senior Computational Scientist in the Center for Data-Driven Discovery</i> S. George Djorgovski <i>Professor of Astronomy and Data Science</i>

Oral Presentation	<i>Xiaoqi Long</i> <i>Arthur R. Adams</i> <i>SURF Fellow</i>	Detecting Animal Breeding Violations Through Satellite Imagery	Daniel E. Ho <i>William Benjamin Scott and Luna M. Scott Professor of Law, Stanford University</i> Brandon Anderson <i>Senior Data Scientist, Stanford University</i> Michael C. Vanier <i>Teaching Professor of Computing and Mathematical Sciences</i>
Oral Presentation	<i>Nathan E. Lopez</i> <i>John Stauffer SURF Fellow</i>	Exploring Singlet Fission in Bipentacene Compounds	Ryan G. Hadt <i>Assistant Professor of Chemistry</i> Theodor Agapie <i>Professor of Chemistry</i> Ryan Ribson <i>Graduate Student in Chemistry</i>
Oral Presentation	<i>Hanbai Lyu</i> Yale University	X-ray Spectroscopy and Parameter Variation Analysis of Active Galactic Nuclei	Javier A. Garcia <i>Research Assistant Professor of Physics</i> Guglielmo Mastroserio <i>Postdoctoral Scholar</i> <i>Research Associate in Physics</i>
Poster Presentation	<i>Eric Y. Ma</i> University of California, Los Angeles	Exploring Methods to Improve Usability of Computer Vision Models for Behavior Analysis	Pietro Perona <i>Allen E. Puckett Professor of Electrical Engineering</i> Jennifer J. Sun <i>Graduate Student in Computing and Mathematical Sciences</i>
Oral Presentation	<i>Ananth V. Malladi</i> <i>Dr. and Mrs. James M. Kendall SURF Fellow</i>	Gauging the Electric-Magnetic Duality in the 4+1d Toric Code	Xie Chen <i>Professor of Theoretical Physics</i>
Poster Presentation	<i>Tyler H. Mapes</i>	Comet NEOWISE Spectra Data Reduction	Geoffrey A. Blake <i>Professor of Cosmochemistry and Planetary Sciences and Professor of Chemistry</i> Maria Camarca <i>Graduate Student in Planetary Science</i>

Poster Presentation	<i>Patrick S. Martinez</i>	Improving the Heat Transport Model for the Continuum Simulation of AP/HTPB Burn	Brandon Runnels <i>Assistant Professor of Mechanical and Aerospace Engineering, University of Colorado, Colorado Springs</i> Joseph E. Shepherd <i>C.L. "Kelly" Johnson Professor of Aeronautics and Mechanical Engineering</i>
Oral Presentation	<i>Gavin M. McCabe</i> <i>Mark Reinecke SURF Fellow</i>	Numerical Monte Carlo Simulation of Cryogenic Buffer Gas Beams	Nick R. Hutzler <i>Assistant Professor of Physics</i> Yuiki Takahashi <i>Graduate Student in Physics</i>
Oral Presentation	<i>Robin M. McDonald</i>	Fabrication of 3D-Printed Algae-Cellulose Composites	Eleftheria Roumeli <i>Assistant Professor of Materials Science and Engineering, University of Washington</i> Chiara Daraio <i>G. Bradford Jones Professor of Mechanical Engineering and Applied Physics; Investigator, Heritage Medical Research Institute</i>
Oral Presentation	<i>Kyle A. McGraw</i> <i>Carl F. Braun SURF Fellow</i>	Classifying Decision Making Behavior in Psychiatric Disorders	John P. O'Doherty <i>Professor of Psychology</i> Jeffrey Cockburn <i>Senior Postdoctoral Scholar Research Associate in Neuroscience</i>
Oral Presentation	<i>Vanessa J. Mechem</i> <i>John Stauffer SURF Fellow</i>	Structural Characterization of the C-terminal Domain of Giardia Sgt2	William M. Clemons <i>Professor of Biochemistry</i> Alex Barbato <i>Graduate Student in Biochemistry and Molecular Biophysics</i>
Oral Presentation	<i>Krish A. Mehta</i>	Development and Evaluation of Machine Learning Object Detection Models for the Classification and Localization of Marine Animals in the Benthic Zone	Kakani K. Young <i>Visiting Associate in Aerospace</i>

Poster Presentation	Hayward J. Melton <i>Larson Scholar</i>	Angular Sensing and Integrated Circuit Verification of the ATOMS Devices for High-Precision Localization	Azita Emami <i>Andrew and Peggy Cherng Professor of Electrical Engineering and Medical Engineering</i> Saransh Sharma <i>Graduate Student in Electrical Engineering</i>
Oral Presentation	Isabella K. Mendoza	3D Mesh Generation via Rotation	Santiago Lombeyda <i>Senior Computational Scientist in the Center for Data-Driven Discovery</i> S. George Djorgovski <i>Professor of Astronomy and Data Science</i>
Oral Presentation	Josiah A. Miller	Gravitational Lensing and Neural Networks	Matthew J. Graham <i>Research Professor of Astronomy</i>
Oral Presentation	Ellen Min <i>Samuel and Berta Spalter SURF Fellow</i>	Modeling Ultrasound-Induced Buckling of Gas Vesicles	Mikhail G. Shapiro <i>Professor of Chemical Engineering; Investigator, Howard Hughes Medical Institute</i> Amirhossein Salahshoor <i>Postdoctoral Scholar Research Associate in Aerospace</i>
Oral Presentation	Joseph R. Mina	Simulating tri-Higgs Production at the LHC	Maria Spiropulu <i>Shang-Yi Ch'en Professor of Physics</i>
Oral Presentation	Cameron M. Moffett-Smith California State Polytechnic University, Pomona <i>Institute for Quantum Information and Matter (IQIM) WAVE Fellow</i>	Performance of Interaction Network on the Analysis of the Boosted $HH \rightarrow b\bar{b}\tau^+\tau^-$ Decay Mode	Harvey B. Newman <i>Marvin L. Goldberger Professor of Physics</i> Nan Lu <i>Postdoctoral Scholar Research Associate in Physics</i>
Oral Presentation	Noah P. Moran <i>Carl F. Braun SURF Fellow</i>	Creating a Solid Model of the Hadron Calorimeter for the LDMX	David G. Hitlin <i>Professor of Physics</i> Bertrand Echenard <i>Research Professor of High Energy Physics</i>

Oral Presentation	<i>Anna Mortari</i> <i>Robb and Eunice Rutledge SURF Fellow</i>	Structural Determination of the Binding Interaction of Kap α :Nup145N Complex	André Hoelz <i>Professor of Chemistry</i> George W. Mobbs <i>Senior Postdoctoral Scholar</i> <i>Research Associate in Chemistry</i>
Oral Presentation	<i>Greg B. Moss</i> University of California, Santa Barbara, College of Creative Studies	An Anaerobic Microbial Community Obtained From Whale-Fall Sediment and Its Response to Changes in Free Energy	Victoria J. Orphan <i>James Irvine Professor of Environmental Science and Geobiology</i> Sujung Lim <i>Graduate Student in Geobiology</i>
Oral Presentation	<i>Nathan Nadler</i> Case Western Reserve University <i>Chen Institute BrainWAVE Fellow</i>	Analyzing Genes Linked With Autism Spectrum Disorder (ASD) Utilizing a Zebrafish Model	David Prober <i>Professor of Biology</i> Jin Xu <i>Postdoctoral Scholar</i> <i>Research Associate in Biology and Biological Engineering</i>
Oral Presentation	<i>Ankita Nandi</i> <i>Dr. Charles and Dr. Sharon Maxfield SURF Fellow</i>	Emittance Modulative Device Using Polyaniline-based Electrochemical System	Po-Chun Hsu <i>Assistant Professor of Mechanical Engineering and Materials Science, Duke University</i> Ting-Hsuan Chen <i>Graduate Student in Mechanical Engineering and Materials Science, Duke University</i> Austin J. Minnich <i>Professor of Mechanical Engineering and Applied Physics</i>
Oral Presentation	<i>Nathan A. Ng</i>	HOMES: Habitat Orientable and Modular Electrodynamical Shield	Soon-Jo Chung <i>Bren Professor of Aerospace and Control and Dynamical Systems; Research Scientist, JPL</i>
Oral Presentation	<i>Mai H. Nguyen</i> <i>Joanna Wall Muir SURF Fellow</i>	Strain Engineering of Pseudo-Magnetic Fields in Monolayer Graphene	Nai-Chang Yeh <i>Professor of Physics</i> Duxing Hao <i>Graduate Student in Physics</i>

Oral Presentation	<i>Jemima O'Farrell</i> National University of Ireland Galway	Searching for Astronomical Transients in High Time Resolution Optical Observations	Gregg W. Hallinan <i>Professor of Astronomy</i> Qicheng Zhang <i>Graduate Student in Planetary Science</i>
Oral Presentation	<i>Sandra O'Neill</i> <i>Flintridge Foundation SURF Fellow</i>	Quasi-Periodic Oscillations in AGN Light Curves: The Case of 2131-021	Anthony C. Readhead <i>Robinson Professor of Astronomy, Emeritus</i>
Poster Presentation	<i>David J. Oliveira</i> <i>Heather and Paul Haaga SURF Fellow</i>	Squeezed Light Detection With Balanced Homodyne Scheme	Amir Safavi-Naeini <i>Assistant Professor of Applied Physics, Stanford University</i> Michael L. Roukes <i>Frank J. Roshek Professor of Physics, Applied Physics, and Bioengineering</i>
Oral Presentation	<i>Chidinma W. Onyekonwu</i> Mt. San Antonio College	The Job Conundrum: Exploring the Politics of Work Among African Americans in the Post-Civil Rights Era	Danielle L. Wiggins <i>Assistant Professor of History</i>
Oral Presentation	<i>Xin Hui Ooi</i> <i>Carl F. Braun SURF Fellow</i>	Predicting FLiNaK Infiltration Into Graphite	Raluca O. Scarlat <i>Assistant Professor of Nuclear Engineering, University of California, Berkeley</i> Melany L. Hunt <i>Dotty and Dick Hayman Professor of Mechanical Engineering</i>
Oral Presentation	<i>Noah D. Ortiz</i> <i>Doris Everhart SURF Fellow</i>	Computational Complexity of Uryson Width	Fedor Manin <i>Assistant Professor of Mathematics, University of California, Santa Barbara</i> Peter Smillie <i>Harry Bateman Instructor in Mathematics</i>
Oral Presentation	<i>Vibha Padmanabhan</i> <i>Samuel P. and Frances Krown SURF Fellow</i>	Investigating the Effect of Magma Ocean Solidification Rate on Early Atmosphere Formation	Yoshinori Miyazaki <i>Stanback Postdoctoral Scholar Research Associate in Comparative Planetary Evolution</i>

Oral Presentation	<i>Elsa K. Palumbo</i> <i>Carl F. Braun SURF Fellow</i>	Evidence for Centrifugal Breakout Around the Young M Dwarf TIC 234284556	Benjamin Montet <i>Lecturer in Physics, University of New South Wales</i> Lynne Hillenbrand <i>Professor of Astronomy</i>
Oral Presentation	<i>Katherine C. Pan</i>	Delineating a Sexually Dimorphic Role of piRNA Pathway in Guarding Animal Fertility	Alexei Aravin <i>Professor of Biology</i> Peiwei Chen <i>Graduate Student in Biology</i>
Oral Presentation	<i>Eunice H. Park</i> <i>Carl F. Braun SURF Fellow</i>	Examining the Impact of an Individual's Physical and Personal Proximity to COVID-19 on Mental Health	Ralph Adolphs <i>Bren Professor of Psychology, Neuroscience, and Biology</i> Tessa Rusch <i>Postdoctoral Scholar Research Associate in Neuroscience</i>
Oral Presentation	<i>John E. Parker</i>	Mach, Einstein, and the Rejection of the Luminiferous Ether	Joshua Eisenthal <i>Research Assistant Professor of Philosophy</i>
Poster Presentation	<i>Jolly Patro</i> <i>Lynn A. Booth and Kent Kresa SURF Fellow</i>	Mechanically Triggered Small Molecule Release in Crosslinked Polymer Networks	Maxwell J. Robb <i>Assistant Professor of Chemistry</i> Ross Barber <i>Graduate Student in Chemistry</i>
Oral Presentation	<i>Elijah G. Paul</i>	Fabrication of Silicon Particle Monolayers	Harry A. Atwater <i>Howard Hughes Professor of Applied Physics and Materials Science</i> Parker Wray <i>Graduate Student in Electrical Engineering</i>
Oral Presentation	<i>Joshua G. Pawlak</i> <i>SURF Board SURF Fellow</i>	A Phase-Field Model of Preferential Meltwater Flow Through Snowpack	Xiaoqing Fu <i>Assistant Professor of Mechanical and Civil Engineering</i>

Poster Presentation	<i>Claire M. Perhach</i>	Study of Reaction of HCl With U Metal in Molten NaCl-CaCl ₂	Michael Simpson <i>Professor of Materials Science and Engineering, University of Utah</i> Harvey B. Newman <i>Marvin L. Goldberger Professor of Physics</i>
Oral Presentation	<i>Bannhat Phat</i> <i>Kirk and Marjory Dawson Family SURF Fellow</i>	Modeling Diffuse Inelastic Scattering in Cu ₂ O With Molecular Dynamics and Machine Learning Potentials	Brent T. Fultz <i>Barbara and Stanley R. Rawn, Jr., Professor of Materials Science and Applied Physics</i> Claire N. Saunders <i>Graduate Student in Materials Science</i>
Oral Presentation	<i>Faith J. Pinney</i> <i>Carl F. Braun SURF Fellow</i>	Measuring Strain in a Giant Single-Celled Organism to Explore Underlying Mechanisms of Morphogenesis	Elliot M. Meyerowitz <i>George W. Beadle Professor of Biology; Investigator, Howard Hughes Medical Institute</i> Eldad Afik <i>Postdoctoral Scholar in Biology and Biological Engineering</i>
Oral Presentation	<i>Krishna R. Pochana</i> <i>Captain Pradeep B. Suklikar Memorial SURF Fellow</i>	Towards an Optical-Based Two-Way Cellular Control Loop for In-Vivo Use: A Microfluidic Focus	Azita Emami <i>Andrew and Peggy Cherng Professor of Electrical Engineering and Medical Engineering</i> Fatemeh Aghlmand <i>Graduate Student in Electrical Engineering</i>
Oral Presentation	<i>Geoffrey M. Pomraning</i> <i>Victor Neher SURF Fellow</i>	Coherent Diffraction Method for Imaging Dusty Plasma Water Ice Grains	Paul M. Bellan <i>Professor of Applied Physics</i>
Poster Presentation	<i>Rafael W. Porto</i> Harvey Mudd College <i>VURP Fellow</i>	Limits of High Density Probes for Chemical Detection in the Brain	Jessica L. Arlett <i>Staff Scientist in Condensed Matter Physics</i>

Oral Presentation	<i>Aditee A. Prabhutendolkar</i>	Surgical Drain Fluid-Based DNA Analysis in Head and Neck Cancer Patients	Aadel A. Chaudhuri <i>Assistant Professor of Radiation Oncology, Genetics, and Computer Science, Washington University Medical School in St. Louis</i> Sarkis K. Mazmanian <i>Luis B. and Nelly Soux Professor of Microbiology</i>
Oral Presentation	<i>Anvay A. Pradhan</i> University of Iowa	Origami-inspired Metamaterial With Tunable Permeability	Chiara Daraio <i>G. Bradford Jones Professor of Mechanical Engineering and Applied Physics; Investigator, Heritage Medical Research Institute</i> Ke Liu <i>Postdoctoral Scholar Research Associate in Mechanical and Civil Engineering</i>
Oral Presentation	<i>Elora Pradhan</i> <i>James G. and Elaine Peterson SURF Fellow</i>	Learning Cancer and Immune Cell Developmental Lineages to Predict Evolution of Metastatic Prostate Cancer	Vanessa D. Jonsson <i>Assistant Research Professor, City of Hope</i> Matthew W. Thomson <i>Assistant Professor of Computational Biology; Investigator, Heritage Medical Research Institute</i>
Oral Presentation	<i>Olivers Pranis</i>	Multiwavelength Coupling With Waveguide-Integrated Optical Metasurfaces	Harry A. Atwater <i>Howard Hughes Professor of Applied Physics and Materials Science</i> Claudio Hail <i>Postdoctoral Scholar Fellowship Trainee in Applied Physics and Materials Science</i>
Oral Presentation	<i>Christopher P. Puksza</i>	Antagonistic Mechanisms of PU.1 Transcription Factor on Notch Signaling During T-lymphocyte Development	Ellen Rothenberg <i>Distinguished Professor of Biology</i> Jihyun Irizarry <i>Postdoctoral Scholar Research Associate in Biology and Biological Engineering</i>

Poster Presentation	<i>Kemal Pulungan</i>	Development of the High Voltage Circuitry of a Modular Electrodynamical Shield System for Lunar Exploration	Soon-Jo Chung <i>Bren Professor of Aerospace and Control and Dynamical Systems; Research Scientist, JPL</i>
Oral Presentation	<i>Daniel J. Quintana</i>	Learning Demonstrated Player Behavior in Video Games With Neural Networks	Yisong Yue <i>Professor of Computing and Mathematical Sciences</i> Cameron L. Voloshin <i>Graduate Student in Computing and Mathematical Sciences</i>
Oral Presentation	<i>Kavya A. Rajagopalan</i>	Determining the Priority Queuing Mechanism From a Poverty Framework	Colin F. Camerer <i>Robert Kirby Professor of Behavioral Economics</i> Marcos Gallo <i>Graduate Student in Social Science</i>
Oral Presentation	<i>Eitan Rapaport</i>	High-Level Optimization of SOFTS Devices for Synchrotron and Sunyaev-Zeldovich Effect Physics	James J. Bock <i>Professor of Physics; Senior Research Scientist, JPL</i> Ritoban Basu Thakur <i>Postdoctoral Scholar Research Associate in Physics</i>
Poster Presentation	<i>Dennis Raush</i> <i>Dr. Glenn Orton</i> <i>SURF Fellow</i>	Explaining the Formation of Planet 9 With a Theoretical Early Solar Binary	Konstantin Batygin <i>Professor of Planetary Science</i>
Oral Presentation	<i>Heidi E. Redmond</i> <i>Jack and Edith Roberts</i> <i>SURF Fellow</i>	The Influence of Gender on Social Perception	Ralph Adolphs <i>Bren Professor of Psychology, Neuroscience, and Biology</i> Nina Rouhani <i>Postdoctoral Scholar Fellowship Trainee in Neuroscience</i>
Oral Presentation	<i>Bruna L. Resende</i> Federal University of Minas Gerais	Investigating the Effects of Microbial Metabolites on Mitochondrial and Immune Functions of BV-2 Microglial Cells	Sarkis K. Mazmanian <i>Luis B. and Nelly Soux</i> <i>Professor of Microbiology</i> Reem Abdel-Haq <i>Graduate Student in Biology</i>

Oral Presentation	<i>Philippa A. Richter</i>	Evaluating Algorithmic Approaches to the K-Coloring Problem Using Well-Mixed Stochastic CRNs	Erik Winfree <i>Professor of Computer Science, Computation and Neural Systems, and Bioengineering</i> Salvador Buse <i>Graduate Student in Bioengineering</i>
Oral Presentation	<i>Patrick K. Rim</i> <i>William Hassenzahl Family SURF Fellow</i>	Dimensionality Reduction as Evidence of a New Regime of Galaxies	Charles L. Steinhardt <i>Associate Professor, Dark Cosmology Centre, Niels Bohr Institute, University of Copenhagen</i> Adam Blank <i>Teaching Assistant Professor of Computing and Mathematical Sciences</i>
Oral Presentation	<i>Makena L. Rodriguez</i> <i>Eric T. Fung and Julie A. Buckley SURF Fellow</i>	Impact of Premature Bcl11b Expression on T Cell Development	Ellen Rothenberg <i>Distinguished Professor of Biology</i> Tom Sidwell <i>Postdoctoral Scholar Research Associate in Biology and Biological Engineering</i>
Oral Presentation	<i>Asha P. Rollins</i> <i>Edward W. Hughes SURF Fellow</i>	Structural Identification of Karyopherin- α Binding Interactions During Nuclear Pore Complex Assembly	André Hoelz <i>Professor of Chemistry</i> Chia-Yu Chien <i>Graduate Student in Biochemistry and Molecular Biophysics</i>
Oral Presentation	<i>Michael I. Rose</i> <i>John Stauffer SURF Fellow</i>	Comparing N ₂ Reduction on Ruthenium Catalysts	William A. Goddard III <i>Charles and Mary Ferkel Professor of Chemistry, Materials Science, and Applied Physics</i> Soonho Kwon <i>Postdoctoral Scholar Research Associate in Chemistry</i>
Oral Presentation	<i>Iyla P. Rossi</i> <i>Dr. Judith Goodstein SURF Fellow</i>	A Non-Invasive and Targeted Approach to Studying the Role of Intrinsically Photosensitive Retinal Ganglion Cells in Human Neural Response	Shinsuke Shimojo <i>Gertrude Baltimore Professor of Experimental Psychology</i> Daw-An Wu <i>Senior Research Scientist in Social Neuroscience</i>

Oral Presentation	<i>Jada M. Russell</i> Clark Atlanta University <i>Humanities and Social Sciences WAVE Fellow</i>	Longitudinal Impacts of Discrimination on Depressive Symptomatology in Racial/Ethnic Minorities During the COVID-19 Pandemic	Ralph Adolphs <i>Bren Professor of Psychology, Neuroscience, and Biology</i> Damian A. Stanley <i>Visiting Associate in Psychology</i>
Oral Presentation	<i>Perry F. Samimy</i>	Validating Model of Thermo-Diffusive Instabilities in Hydrogen Gas Combustion	Guillaume Blanquart <i>Professor of Mechanical Engineering</i> Matthew Yao <i>Graduate Student in Mechanical Engineering</i>
Oral Presentation	<i>Aniket Sanghi</i> The University of Texas at Austin	SUPER-RDI: Improving Exoplanet Detection Limits at Small Angular Separations With the Keck/NIRC Imager	Dimitri P. Mawet <i>Professor of Astronomy; Research Scientist, JPL</i> Jason J. Wang <i>51 Pegasi b Postdoctoral Scholar Research Associate in Astronomy</i>
Oral Presentation	<i>Megan O. Santhumayor</i> <i>Philip Laipis in Memory of Professor Jerome Vinograd SURF Fellow</i>	Comparing Canonical Machine Learning Models With 3D Computer Vision for Molecular Property Prediction	Sarah E. Reisman <i>Bren Professor of Chemistry</i> Michael Maser <i>Graduate Student in Chemistry</i>
Oral Presentation	<i>Pranay M. Satya</i>	Optimizing Cell Extracts by Testing Deletions of Metabolic Pathways to Inform Model Building	Richard M. Murray <i>Thomas E. and Doris Everhart Professor of Control and Dynamical Systems and Bioengineering</i>
Oral Presentation	<i>Cameron E. Scantlin</i> <i>John Stauffer SURF Fellow</i>	Nitrogenase Identification and Activity in <i>Azotobacter vinelandii</i>	Douglas C. Rees <i>Roscoe Gilkey Dickinson Professor of Chemistry; Investigator, Howard Hughes Medical Institute</i> Rebecca Warmack <i>Postdoctoral Scholar Fellowship Trainee in Chemistry</i>
Poster Presentation	<i>Jerome J. Seebeck</i> <i>Harold and Mary Zirin SURF Fellow</i>	Simulated Selection Effects for Fast Radio Burst Localizations	Vikram Ravi <i>Assistant Professor of Astronomy</i>

Oral Presentation	<i>Aditi Seetharaman</i>	Satellite Glial Cell Response to Peripheral Nerve Damage	Valeria Cavalli <i>Professor of Neuroscience, Washington University in St. Louis</i> Oshri Avraham <i>Postdoctoral Fellow of Neuroscience, Washington University in St. Louis</i> Marianne Bronner <i>Distinguished Professor of Biology</i>
Oral Presentation	<i>Anish Senapati</i> <i>J. Weldon Green SURF Fellow</i>	Column Generation of Power Cones for Signomial Optimization	Adam C. Wierman <i>Professor of Computing and Mathematical Sciences</i>
Oral Presentation	<i>Jason M. Sevilla</i>	Modeling the Effects of Planetary Engulfment on Stellar Lithium Abundance	James W. Fuller <i>Assistant Professor of Theoretical Astrophysics</i> Aida Behmard <i>Graduate Student in Planetary Science</i>
Oral Presentation	<i>Yakov Shalunov</i>	Exploration of Full Binary Alternating Max-Average Arithmetic Circuits	Chris M. Umans <i>Professor of Computer Science</i>
Oral Presentation	<i>Junxuan Shen</i> <i>Chung Ip Wing-Wah Memorial SURF Fellow</i>	The Structural Incidence Problem for Cartesian Products	Nets H. Katz <i>International Business Machines Professor of Mathematics</i> Adam Sheffer <i>Assistant Professor of Mathematics</i>
Oral Presentation	<i>Ze'ev N. Shirazi</i> University of Cambridge	Integration of Lie Algebras; Homotopical Methods	Anton N. Kapustin <i>Earle C. Anthony Professor of Theoretical Physics and Mathematics</i>
Oral Presentation	<i>Olivine Silier</i> <i>The Associates SURF Fellow</i>	Structural Szemerédi-Trotter for Non-Lattice Cartesian Products	Larry Guth <i>Claude E. Shannon Professor of Mathematics, Massachusetts Institute of Technology</i> Nets H. Katz <i>International Business Machines Professor of Mathematics</i>

Poster Presentation	Liam M. Silvera <i>Bristol-Myers SURF Fellow</i>	The Induction of Neuroprotective Pathways as a Means of Ischemic Stroke Recovery	Alastair M. Buchan <i>Professor of Stroke Medicine, University of Oxford</i> Sarkis K. Mazmanian <i>Luis B. and Nelly Soux Professor of Microbiology</i>
Oral Presentation	Jacob R. Sims The University of Oklahoma	Algorithms for Rearrangement of Two-Dimensional Defect-Free Atom Arrays	Manuel A. Endres <i>Professor of Physics; Rosenberg Scholar</i>
Poster Presentation	Parul R. Singh	Simulation and Observation of Disconnection-Mediated Triple Junction Grain Boundary Migration	Brandon Runnels <i>Assistant Professor of Mechanical and Aerospace Engineering, University of Colorado, Colorado Springs</i> Gil Refael <i>Taylor W. Lawrence Professor of Theoretical Physics</i>
Poster Presentation	Aditya D. Sivakumar <i>William H. and Helen Lang SURF Fellow</i>	Generalization of p -Adic AdS/CFT Correspondence	Sarthak Parikh <i>Postdoctoral Scholar Teaching Fellow in Mathematics</i>
Oral Presentation	Juan Pablo Speer University of Alabama at Birmingham <i>Institute for Quantum Information and Matter (IQIM) WAVE Fellow</i>	Z_N Checkerboard Model Equivalence	Xie Chen <i>Professor of Theoretical Physics</i> Arpit Dua <i>IQIM Postdoctoral Scholar Research Associate in Theoretical Physics</i>
Oral Presentation	Shiva A. Sreeram <i>The Aerospace Corporation SURF Fellow</i>	Data-driven Spacecraft Mission Design	Yisong Yue <i>Professor of Computing and Mathematical Sciences</i> Shreyansh Daftry <i>Robotics Technologist, JPL</i>
Oral Presentation	Aubrey J. Stevens <i>Laurence J. Stuppy SURF Fellow</i>	A High Throughput Method to Evaluate X-chromosome Counting With a Fluorescent "Calico" Cell Line	Mitchell Guttman <i>Professor of Biology</i> Drew Honson <i>Graduate Student in Biology</i>

Oral Presentation	<i>Christian J. Stromberger</i> <i>The Aerospace Corporation SURF Fellow</i>	Test Design for Extremely Resilient System	Richard M. Murray <i>Thomas E. and Doris Everhart Professor of Control and Dynamical Systems and Bioengineering</i> Josefine B. Graebener <i>Graduate Student in Aerospace</i>
Oral Presentation	<i>Victoria L. Su</i>	Designing a Magnetic Lens to Collimate a Molecular Beam for Larger Signals in the Search for Symmetry Violations	Nick R. Hutzler <i>Assistant Professor of Physics</i> Ashay Patel <i>Graduate Student in Physics</i>
Oral Presentation	<i>Katelyn A. Sulett</i>	Audiovisual Illusions in the Late Blind and Those With Low Vision	Shinsuke Shimojo <i>Gertrude Baltimore Professor of Experimental Psychology</i> Noelle R. Stiles <i>Visitor in Biology and Biological Engineering</i>
Oral Presentation	<i>Andy J. Sun</i>	Understanding the Infrared Spectroscopic Signature of Water Ice in Lunar PSRs	Bethany L. Ehlmann <i>Professor of Planetary Science</i> Jasper K. Miura <i>Research Technician Associate in Planetary Science</i>
Oral Presentation	<i>Nathan T. Suri Jr.</i> <i>Mellon Mays SURF Fellow</i>	Standalone Search for Quirk Pair Production	Maria Spiropulu <i>Shang-Yi Ch'en Professor of Physics</i>
Oral Presentation	<i>Dallas N. Taylor</i>	Applications of the Cooperative DNA Catalyst	Lulu Qian <i>Professor of Bioengineering</i> Sam Davidson <i>Graduate Student in Bioengineering</i>
Oral Presentation	<i>Kaden R. Taylor</i> <i>Carl F. Braun SURF Fellow</i>	Modeling Photonic Quantum Information Processing Experiments Using Gaussian Characteristic Functions	Maria Spiropulu <i>Shang-Yi Ch'en Professor of Physics</i>

Oral Presentation	Zane W. Taylor <i>James H. Milovich</i> <i>SURF Fellow</i>	Thermoresponsive Interpenetrating Networks for Atmospheric Water Harvesting	Julia R. Greer <i>Ruben F. and Donna</i> <i>Mettler Professor of</i> <i>Materials Science,</i> <i>Mechanics, and Medical</i> <i>Engineering</i> Amylynn Chen <i>Graduate Student in</i> <i>Materials Science</i>
Oral Presentation	Kenny Thai	An Alternative Model for Flocculation in Freshwater Channels	Michael P. Lamb <i>Professor of Geology</i> Gerard L. Salter <i>Postdoctoral Scholar</i> <i>Research Associate in</i> <i>Geology</i>
Oral Presentation	Emily M. Thierstein <i>Samuel P. and Frances</i> <i>Krown SURF Fellow</i>	Analysis of Run 18 Data From the Linac Coherent Light Source Attosecond X-ray Experiment	Phillip H. Bucksbaum <i>Professor of Physics,</i> <i>Stanford University</i> James P. Cryan <i>Lead Scientist, SLAC</i> Nick R. Hutzler <i>Assistant Professor of</i> <i>Physics</i>
Poster Presentation	Kathryn S. Thompson	Investigation and Modeling of CO ₂ Uptake in Concrete	Melany L. Hunt <i>Dotty and Dick Hayman</i> <i>Professor of Mechanical</i> <i>Engineering</i> Yichuan Song <i>Graduate Student in</i> <i>Aerospace</i>
Oral Presentation	Malcolm G. Tisdale <i>Dr. Chandler C. Ross</i> <i>SURF Fellow</i>	HOMES: Rigorous Verification and Validation Program Ensuring Lunar Artemis Mission Readiness	Soon-Jo Chung <i>Bren Professor of</i> <i>Aerospace and Control and</i> <i>Dynamical Systems;</i> <i>Research Scientist, JPL</i>
Oral Presentation	Megan M. Tjandrasuwita <i>Northern California</i> <i>Associates SURF Fellow</i>	Towards Scalable Object-Centric Learning and Reasoning	Jure Leskovec <i>Associate Professor of</i> <i>Computer Science, Stanford</i> <i>University</i> Tailin Wu <i>Postdoctoral Researcher in</i> <i>Computer Science, Stanford</i> <i>University</i> Yisong Yue <i>Professor of Computing and</i> <i>Mathematical Sciences</i>

Oral Presentation	<i>Sasha N. Tolstoff</i>	EEG Analysis of Time Frequency Data With Principal Component Analysis (PCA) and Neural Network	Joseph L. Kirschvink <i>Nico and Marilyn Van Wingen Professor of Geobiology</i> Daw-An Wu <i>Senior Research Scientist in Social Neuroscience</i>
Poster Presentation	<i>Angelina J. Torres</i>	Spatial Distribution of Gas and Dust Surrounding KIC-8462852	Josh Simon <i>Staff Astronomer, Carnegie Observatories</i> Lynne Hillenbrand <i>Professor of Astronomy</i>
Oral Presentation	<i>Justin I. Toyota</i>	Partitions and the Generalized von Mangoldt Function	Alexander Dunn <i>Olga Taussky and John Todd Instructor in Mathematics</i>
Oral Presentation	<i>Kayton K. Truong</i>	Characterizing Long-Period Variable Stars With Palomar Gattini-IR	Mansi M. Kasliwal <i>Professor of Astronomy</i> Viraj Karambelkar <i>Graduate Student in Astrophysics</i>
Oral Presentation	<i>Tat Hei Tsin</i> University of California, San Diego <i>Simons Foundation Autism Research Initiative (SFARI) SURF Fellow</i>	A Statistical Modelling Approach Towards Discovering Transition and Development of Behavioral States During Social Interactions	David J. Anderson <i>Seymour Benzer Professor of Biology; Investigator, Howard Hughes Medical Institute</i> Tomomi Karigo <i>Postdoctoral Scholar Research Associate in Biology and Biological Engineering</i>
Oral Presentation	<i>Arielle K. Tycko</i> <i>George and Norma Ruptier SURF Fellow</i>	Using Deep Learning to Automate Vessel Segmentation and Cardiac Blood Flow Measurement on 4D Flow MR Images	Albert Hsiao <i>Associate Professor of Radiology, University of California, San Diego</i> Thanos G. Siapas <i>Professor of Computation and Neural Systems</i>
Oral Presentation	<i>Aditi T. Venkatesh</i> <i>Samuel N. Vodopia and Carol J. Hasson SURF Fellow</i>	Magnetic Measurements in a Cryogen Free Cryostat	Joseph L. Falson <i>Assistant Professor of Materials Science; William H. Hurt Scholar</i>

Poster Presentation	<i>Polina A. Verkhovodova</i> <i>John and Barbara Gee SURF Fellow</i>	Design of a Modular and Orientable Electrodynamical Shield for Dust Mitigation: Optimization and Verification	Soon-Jo Chung <i>Bren Professor of Aerospace and Control and Dynamical Systems; Research Scientist, JPL</i>
Oral Presentation	<i>Yasmin S. Veys</i> <i>The Associates SURF Fellow</i>	Intelligent Exploration for Safely Learning Unstable Robotic Systems	Yisong Yue <i>Professor of Computing and Mathematical Sciences</i> Ivan Jimenez Rodriguez <i>Graduate Student in Computing and Mathematical Sciences</i>
Oral Presentation	<i>Jenny T. Wan</i> <i>Bill Davis SURF Fellow</i>	X-ray Properties of Dynamically Disturbed Galaxy Groups	Christine Jones <i>Senior Astrophysicist, Harvard-Smithsonian Center for Astrophysics</i> Marie Machacek <i>Astrophysicist, Smithsonian Astrophysical Observatory</i> Sunil Golwala <i>Professor of Physics</i>
Oral Presentation	<i>Alexander Z. Wang</i> <i>Richard T. Jones SURF Fellow</i>	A Novel Reinforcement Learning Analysis of the Effects of Uncertainty on Behavior in Obsessive-Compulsive Disorder	Paula Robbins <i>Wellcome Trust Postdoctoral Research Fellow, University of Cambridge</i> Antonio Rangel <i>Bing Professor of Neuroscience, Behavioral Biology, and Economics</i>
Oral Presentation	<i>Jianxin Wang</i> Boston College	Causal Discovery in Physical Reasoning	Anima Anandkumar <i>Bren Professor of Computing and Mathematical Sciences</i>
Poster Presentation	<i>Megan Wang</i> <i>Stanley and Chenmei Hsu SURF Fellow</i>	Characterizing the Genetic Interactions of SARS-CoV-2 Nsp14	Rodney Rothstein <i>Professor of Genetics & Development and Systems Biology, Columbia University</i> Judith L. Campbell <i>Professor of Chemistry and Biology</i>

Oral Presentation	<i>Amelia Y. Whitworth</i> <i>Hugh F. and Audy Lou Colvin International SURF Fellow</i>	Modeling the Absorption Spectra of Galaxy Simulations to Gain Insight Into the Properties of Faint Galaxies	Lise B. Christensen <i>Associate Professor, Dark Cosmology Centre, Niels Bohr Institute, University of Copenhagen</i> Omer Tamuz <i>Professor of Economics and Mathematics</i>
Oral Presentation	<i>Megan A. Woods</i> <i>University of California, Riverside Resnick Sustainability Institute (RSI) WAVE Fellow</i>	Investigating the Product Distribution of Reactions Between Resonance Stabilized Radicals	Mitchio Okumura <i>Professor of Chemical Physics</i> Gregory H. Jones <i>Graduate Student in Chemistry</i> Charles Markus <i>Arnold O. Beckman Postdoctoral Fellow in Chemical Sciences</i>
Oral Presentation	<i>Lena M. Wu</i>	Spectral Variability of NuSTAR Using 3C273	Fiona A. Harrison <i>Harold A. Rosen Professor of Physics</i> Murray Brightman <i>NuSTAR Science Operations Specialist</i>
Oral Presentation	<i>George T. Wythes</i>	Reconstruction of Bacterial Transposons for Stochastic Genome Minimization	Kaihang Wang <i>Assistant Professor of Biology and Biological Engineering</i>
Oral Presentation	<i>Keqin Yan</i> <i>University of California, Los Angeles</i>	Producing Flat-Top Beams With Digital Micromirror Device	Manuel A. Endres <i>Professor of Physics; Rosenberg Scholar</i>
Oral Presentation	<i>Brian B. Yang</i>	Dynamic International Networks for the Large Hadron Collider and Other Data Intensive Science Programs	Harvey B. Newman <i>Marvin L. Goldberger Professor of Physics</i> Carlyn-Ann Lee <i>Software Engineering, JPL</i>
Oral Presentation	<i>Bridget C. Yang</i>	Engineering Differential Signaling and Sensing Genetic Circuits Within Synthetic Cells	Richard M. Murray <i>Thomas E. and Doris Everhart Professor of Control and Dynamical Systems and Bioengineering</i>

Oral Presentation	Zitian Ye	Dual-Channel qSR: A Software to Characterize the Correlation Between Pol II Clusters and Their Transcriptional Output	Ibrahim Cissé <i>Professor of Physics</i> Rehab Amin <i>Research Scientist in Condensed Matter Physics</i> Manyu Du <i>Postdoctoral Scholar in Biophysics</i>
Oral Presentation <i>joint presentation with Antonio Caceres</i>	Steven H. Yee	Design and Development of CS 22: Data Structures and Parallelism	Adam Blank <i>Teaching Assistant</i> <i>Professor of Computing and Mathematical Sciences</i>
Oral Presentation	Mei Yi You <i>William N. Lacey SURF Fellow</i>	Engineering Macrophages as Cellular Cancer Sensors With Mammalian Acoustic Reporter (mARG) Gene Expression	Mikhail G. Shapiro <i>Professor of Chemical Engineering; Investigator, Howard Hughes Medical Institute</i> Justin Lee <i>Graduate Student in Bioengineering</i>
Oral Presentation	Hantao Yu University of California, San Diego	Discrete Fourier Transform Over Schurian Schemes	Chris M. Umans <i>Professor of Computer Science</i>
Oral Presentation	Jennifer Yu <i>Elizabeth B. Seebeck SURF Fellow</i>	Smartphone-based Eye-tracking for Assessing Autism Spectrum Disorder	Ralph Adolphs <i>Bren Professor of Psychology, Neuroscience, and Biology</i> Umit Keles <i>Postdoctoral Scholar Research Associate in Neuroscience</i>
Poster Presentation	Zhibo Yu Fudan University	Broad-band Spectral-Timing Analysis of the Black Hole X-ray Binary MAXI J1820+070 With <i>Insight</i> -HXMT Data	Javier A. García <i>Research Assistant Professor of Physics</i> Guglielmo Mastroserio <i>Postdoctoral Scholar Research Associate in Physics</i>
Oral Presentation	Theresa Zhang <i>Samuel P. and Frances Krown SURF Fellow</i>	Determining Systematic Bias in the Organ Allocation Algorithm	Federico M. Echenique <i>Allen and Lenabelle Davis Professor of Economics</i>

Oral Presentation

Wentao Zhang
Thomas C. Hays
SURF Fellow

Structural and Biochemical
Characterization of the
Kap- α :Nup159 Binding
Interaction

André Hoelz
Professor of Chemistry
George W. Mobbs
Senior Postdoctoral Scholar
Research Associate in
Chemistry