Caltech
Student-Faculty Programs

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

Poster Session 4:00 - 6:00 PM	***Selassie A. Ackah*** Caltech	Frequency of Small Magellanic Cloud analogs in simulated Milky Way systems hosting a Large Magellanic Cloud analog	Andrew J. Benson *Staff Scientist, Carnegie Observatories* Lior S. Pachter *Bren Professor of Computational Biology and Computing and Mathematical Sciences*
Poster Session 4:00 - 6:00 PM	***Jaehwan Ahn*** Daegu Gyeongbuk Institute of Science and Technology *VURP Fellow*	Composition optimization of an FeCoNiMo high-entropy alloy for hydrogen evolution	William A. Goddard *Charles and Mary Ferkel Professor of Chemistry, Materials Science, and Applied Physics* Sejun Kim *Postdoctoral Scholar Research Associate in Chemistry*
Poster Session 4:00 - 6:00 PM	***Akshay Anand*** The Ohio State University *Center for Evolutionary Science EVO-WAVE Fellow*	Phylogenetic comparative methods for the 8-Cube mouse founder transcriptome atlas	Lior S. Pachter *Bren Professor of Computational Biology and Computing and Mathematical Sciences* Nikhila Swarna *Graduate Student in Biochemistry and Molecular Biophysics*
Poster Session 4:00 - 6:00 PM	***Ava Arabshahi*** Occidental College *Amgen Scholar*	Neural circuit mapping and behavioral characterization in activity-based anorexia and restraint stress models	Yuki Oka *Professor of Biology; Investigator, Heritage Medical Research Institute* Tongtong Wang *Postdoctoral Scholar Research Associate in Biology and Biological Engineering*

Poster Session 4:00 - 6:00 PM	***Nicholas Z. Bai*** Caltech *Carl F. Braun SURF Fellow*	Diffusion guided posterior sampling for Bayesian inverse problems	Anima Anandkumar *Bren Professor of Computing and Mathematical Sciences* Jiachen Yao *Graduate Student in Computing and Mathematical Sciences* Xi Deng *Postdoctoral Scholar Research Associate in Computing and Mathematical Sciences*
Poster Session 4:00 - 6:00 PM	***Sandra E. Baltazar*** Oberlin College *Southern California Edison WAVE Fellow*	Towards cryo-EM structural determination of FAM136A using a nanobody-based fiducial strategy	Rebecca M. Voorhees *Professor of Biology and Biological Engineering; HHMI Freeman Hrabowski Scholar* Jichen Zhang *Graduate Student in Biochemistry and Molecular Biophysics*
Poster Session 4:00 - 6:00 PM	***Kamarya A. Buckley*** University of Maryland, Baltimore County *Chen Institute BrainWAVE Fellow*	Investigating the molecular and neural mechanisms of social behavior in *Drosophila*	David J. Anderson *Seymour Benzer Professor of Biology; Investigator, Howard Hughes Medical Institute* Yousef Ouadah *Senior Postdoctoral Scholar Research Associate in Biology and Biological Engineering* Ziqing Zhong *Graduate Student in Neurobiology*
Poster Session 4:00 - 6:00 PM	***Yubo Cao*** Caltech *Arthur R. Adams SURF Fellow*	PTNO: Training neural operators with noisy Monte Carlo estimates for particle transport problems	Anima Anandkumar *Bren Professor of Computing and Mathematical Sciences* Xi Deng *Postdoctoral Scholar Research Associate in Computing and Mathematical Sciences*
Poster Session 4:00 - 6:00 PM	***Yi-Jhe Chen*** National Taiwan University *BaBar SURF Fellow*	Modeling experimental asset bubbles through Large Language Models with persona optimization	Colin F. Camerer *Robert Kirby Professor of Behavioral Economics* Cady H. Ngo *Research Assistant in Humanities and Social Sciences*
Poster Session 4:00 - 6:00 PM	***Joaquin Gabriel Malachi de Castro*** Harvard University	Hardware-native quantum machine learning methods for anomaly detection in active galactic nuclei light curves	Matthew J. Graham *Research Professor of Astronomy*

Poster Session 4:00 - 6:00 PM	***Claire D. Fagan*** University of Maryland, College Park *Resnick Sustainability Institute (RSI) WAVE Fellow*	Investigating the origin of seismic clustering in the Salton Trough	Joann M. Stock *Professor of Geology and Geophysics* Allen Husker *Research Professor of Geophysics*
Poster Session 4:00 - 6:00 PM	***Varun N. Gabbita*** Caltech *Frank W. Wood SURF Fellow*	SafePPO: Anytime constrained proximal policy optimization via safe gradient flow	Aaron D. Ames *Bren Professor of Mechanical and Civil Engineering, Control and Dynamical Systems, and Aerospace* Pol Mestres *Postdoctoral Scholar Research Associate in Mechanical and Civil Engineering*
Poster Session 4:00 - 6:00 PM	***Gabriella G. Giampietro*** Brown University *Resnick Sustainability Institute (RSI) WAVE Fellow*	Employing novel spectroscopic techniques in tracking biomarkers through coalification	John M. Eiler *Robert P. Sharp Professor of Geology and Geochemistry* Annie Edwards *Graduate Student in Geochemistry*
Poster Session 4:00 - 6:00 PM	***Ian C. Gill*** Yale Univeristy	Single-shot universal quantum computation with 4D lifted product codes	John P. Preskill *Richard P. Feynman Professor of Theoretical Physics* Madelyn G. Cain Muzhou Ma
Poster Session 4:00 - 6:00 PM	***David Gvadzabia*** Lafayette College	Evaluating causal machine learning algorithms	Leonard J. Schulman *Professor of Computer Science* Erik Jahn *Graduate Student in Computer Science*
Poster Session 4:00 - 6:00 PM	***Aditya Jain*** University of Cambridge *Caltech-Cambridge Exchange*	Modelling the effects of tungsten alloying and surface oxidation on coverage-dependent hydrogen evolution in $Ni_{17}W_3$	William A. Goddard III *Charles and Mary Ferkel Professor of Chemistry, Materials Science, and Applied Physics* Sejun Kim *Postdoctoral Scholar Research Associate in Chemistry*
Poster Session 4:00 - 6:00 PM	***Adam M. Janik*** University of California, Los Angeles	Mapping the inner geometry of active galactic nuclei using Wiener Deconvolution of X-ray reverberation	Fiona A. Harrison *Harold A. Rosen Professor of Physics* Demet Kirmizibayrak *Postdoctoral Scholar Research Associate in Physics*
Poster Session 4:00 - 6:00 PM	***Minhyuk Kang*** Imperial College London	Dual-space orbital learning for electronic band structure prediction of periodic materials	Anima Anandkumar *Bren Professor of Computing and Mathematical Sciences* Beom Seok Kang *Graduate Student in Chemical Engineering*

Poster Session 4:00 - 6:00 PM	***Alya Kurt*** Caltech	Image reconstruction in magnetic resonance imaging (MRI) through differentiable physics	Shreyas S. Vasanawala *Professor of Radiology; Director of MRI, Stanford Children's Hospital* Andres Collazo *Director of Biological Imaging Center*
Poster Session 4:00 - 6:00 PM	***Yiyan Liao*** Peking University	Electronic effect-informed generative *de novo* enzyme design	Anima Anandkumar *Bren Professor of Computing and Mathematical Sciences* Yu Zhang *Postdoctoral Scholar Research Associate in Computing and Mathematical Sciences*
Poster Session 4:00 - 6:00 PM	***Abubakr S. Nazriev*** Caltech	High-performance radiative rransfer and machine learning for gas remote sensing from space	Christian Frankenberg *Chandler Family Professor of Environmental Science and Engineering; Senior Research Scientist, JPL*
Poster Session 4:00 - 6:00 PM	***Brianna N. Newton*** University of California, San Diego *Chen Institute BrainWAVE Fellow*	Characterizing astrocyte-like glia morphology in the *Drosophila* larval antennal lobe	Carlos Lois *Research Professor of Biology* Aubrie L. De La Cruz *Research Scientist in Biology and Biological Engineering*
Poster Session 4:00 - 6:00 PM	***Diya Pai*** University of Wisconsin-Madison	Reconstruction of muon detector showers using machine learning	Maria Spiropulu *Shang-Yi Ch'en Professor of Physics* Soham Bhattacharya *Postdoctoral Scholar Research Associate in Physics*
Poster Session 4:00 - 6:00 PM	***Delia N. Parco*** Smith College *Amgen Scholar*	Investigating the role of insulin signaling in zebrafish meningeal and neural development	Marianne Bronner *Edward B. Lewis Professor of Biology* Ayyappa Raja *Senior Postdoctoral Scholar Research Associate in Biology and Biological Engineering*
Poster Session 4:00 - 6:00 PM	***Nikhita Penugonda*** Caltech *Samuel P. and Frances Krown SURF Fellow*	Sharpening the search: Optimizing missed NEO detections for NEO Surveyor	Joseph Masiero *NEO Surveyor Lead Scientist in IPAC* Ishan Mishra *Staff Scientist in IPAC*
Poster Session 4:00 - 6:00 PM	***Francesco Plastina*** Harvard University	Engineering fluorescent proteins for robust magnetic field sensing in mammalian cells	Mikhail G. Shapiro *Max Delbrück Professor of Chemical Engineering and Medical Engineering; Investigator, Howard Hughes Medical Institute* Hengyu Li *Graduate Student in Chemistry*

Poster Session 4:00 - 6:00 PM	***Conor K. Sargent*** Northwestern University	Dual-frequency SWV measurements of aptamer sensor drift during extended continuous monitoring in artificial and real sweat	Wei Gao *Professor of Medical Engineering; Investigator, Heritage Medical Research Institute* Hyunah Ahn *Visitor in Medical Engineering*
Poster Session 4:00 - 6:00 PM	***Eric F. Segrest*** University of Central Florida *Information Science and Technology (IST) Venerable WAVE Fellow*	Encoding and replicating hierarchical spatial information in reaction-diffusion systems	Erik Winfree *Professor of Computer Science, Computation and Neural Systems, and Bioengineering* Daichi Hayakawa *Postdoctoral Scholar Research Associate in Biology and Biological Engineering*
Poster Session 4:00 - 6:00 PM	***Anika Shethia*** Yale University *Amgen Scholar*	Neural and behavioral correlates of social connection during human-AI interaction	Dean Mobbs *Professor of Cognitive Neuroscience* Emily Towner *Postdoctoral Scholar Research Associate in Computational Neuroscience of Social Media and Emotion*
Poster Session 4:00 - 6:00 PM	***Jessica Slaughter*** University of Maryland, Baltimore County *KNI SURF-the-WAVE Prize Fellow*	Lactadherin-modified biosensor for detection of inflammatory biomarker in perspiration	Wei Gao *Professor of Medical Engineering; Investigator, Heritage Medical Research Institute* Jeonghee Yeom *Visitor in Medical Engineering*
Poster Session 4:00 - 6:00 PM	***Theodore K. Stoltz*** University of California, Los Angeles	A pose-based pipeline for automated tennis shot detection and serve analysis for coaching applications	Pietro Perona *Allen E. Puckett Professor of Electrical Engineering* Ilona Demler *Graduate Student in Computing and Mathematical Sciences*
Poster Session 4:00 - 6:00 PM	***Ahmad Wahab*** Dartmouth College	Fault-tolerant coordination for the Near-Earth Object Surveyor ground data system	Joseph Masiero *NEO Surveyor Lead Scientist in IPAC* Analetta Ehler *Systems Engineer in IPAC*
Poster Session 4:00 - 6:00 PM	***Jiayi Wu*** Brown University	The Type-Theory Virtual Machine: A logic-aware, compiler-like system for theorem-prover interoperability	Anima Anandkumar *Bren Professor of Computing and Mathematical Sciences* Robert Joseph George *Graduate Student in Computing and Mathematical Sciences*

Poster Session 4:00 - 6:00 PM	***Ruoyun Xu*** Carnegie Mellon University	Optimizing sequential resin-latex extractions from guayule through analytical characterizations	Julia A. Kornfield *Warren and Katharine Schlinger Professor of Chemical Engineering* Florence Mueller *Postdoctoral Scholar Fellowship Trainee in Chemical Engineering*
Poster Session 4:00 - 6:00 PM	***Yiting Zhao*** Imperial College London	Exploring new nonreciprocal photonic platforms for controlling thermal radiation	Harry A. Atwater *Howard Hughes Professor of Applied Physics and Materials Science* Simo Pajovic *Postdoctoral Scholar Research Associate in Applied Physics and Materials Science*