

UC SANTA BARBARA
Summer Sessions

2024 RESEARCH MENTORSHIP PROGRAM
RESEARCH SYMPOSIUM
PROCEEDINGS



2024 Research Symposium Schedule

Wednesday, July 31

Time	Talk
9:00 AM	Opening Remarks
9:04 AM	Armaan Raj Protocol Changes in the Blockchain System and Their Impact on Inequality
9:16 AM	Daniel Chu Simulating Decentralized Exchange Transaction Ordering Sequencing Rules to Reduce Price Deviation
9:28 AM	Jun Yan (Eric) Qiang Examining Population Dynamics in United States Counties: A Sequence Analysis of Historical and Contemporary Growth
9:40 AM	Turner Daudert Understanding Trends of Population Decline Across Sub-Regions of the US: A Sequence Analysis
9:52 AM	Abigail Kim This Is Your Brain in Love: An Analysis of the Effects of Love on Cognition
10:04 AM	Sihui (Helena) Hu ADHD and Epistemic Injustice: Diagnosis and Its Consequences
10:16 AM	Sneha Jiju The Evolution of Neurodivergences: Examining the Case for Complementary Cognition
10:28 AM	Intermission
10:48 AM	Aadhya Bavkar Leveraging Molecular Genetics to Investigate SNMP2's Role In Insect Gustatory Neural Adaptation
11:00 AM	Chloe Li Characterizing the Rh7 Phototransduction Pathway using Circadian Rhythm Responses to Blue Light in <i>Drosophila melanogaster</i>
11:12 AM	Maya Reddy Identification of Rh7-Mediated Neurons Impacting Blue Light Modulation of Circadian Rhythms in <i>Drosophila melanogaster</i>
11:24 AM	Ruilin Zhu Bitter Taste Adaptation: Effect of SNMP2 on Fruit Flies' Feeding Behaviors
11:36 AM	Kashish Priyam Impact of Family History on Communal Coping When Caregiving for an Ill Parent
11:48 AM	Alexander Yuan Size Distribution and Impact of Heating in Exfoliation of PtBi ₂ Nanostructures
12:00 PM	Karen Gao Optical Properties of Pb-Doped PtBi ₂ Nanoscale Flakes
12:15 PM	Lunch Break – on your own

2024 Research Symposium Schedule

Wednesday, July 31

Time	Talk
1:40 PM	Opening Remarks
1:43 PM	Alexandru Thomas Cismaru Enhancing Traffic Flow Prediction With Spatial-Temporal Graph Neural Networks
1:55 PM	Saanvi Kotha Leveraging Graph Neural Networks for Traffic Anomaly Detection
2:07 PM	Sanjay Ganapathy Leveraging Unsupervised Machine Learning Techniques to Distinguish Anomalies in Animal Movement Patterns
2:19 PM	Ruizi Tang Chinese Muslim Minorities on Social Media: Expression, Discrimination, and Government Propaganda
2:31 PM	Athena Y. Yu Algorithmic Bias and its Social Impacts on Native American Communities
2:43 PM	Ruoshui Liu Discovering the Origins of Online Hate: How White Supremacist Early Adopters Created a Hate Epidemic
2:55 PM	Mia Ravishankar Tracking Extreme Precipitation and Convective Systems: El Niño and La Niña in South America
3:07 PM	Intermission
3:27 PM	Catherine Y. Wang How Do Partisan Bias and Susceptibility to Social Pressure Correlate With the Tendency to Believe and Share Misinformation?
3:39 PM	Grace Liu Identification of ERP Correlates in Flexible Recognition Memory Decision-Making
3:51 PM	Jingyuan Zhang Consensus Debunking: A Signal Detection Theory Approach to Combating the Impact of Political Radicalization on Misinformation Susceptibility
4:03 PM	Hengkun (William) Chen Minority Political Participation: Understanding the Effect Of Latinx Celebrity Messages on In-Group Mobilization
4:15 PM	Isabella Choi Investigating the Role of mTOR Inhibition in the mPFC on Incubated Methamphetamine Craving
4:27 PM	Eric Zhang Uniaxial Strain Dependence of Thermal Conductivity of Silicon: An In-plane Experimental Measurement
4:39 PM	Jaden Lu Strain Dependence of GaN Thermal Conductivity: Finite Element Modelling and In-Plane Measurements
5:00 PM	End of Day 1

2024 Research Symposium Schedule

Thursday, August 1

Time	Talk
9:00 AM	Opening Remarks
9:04 AM	Alexandre Behar Walking in the Spotlight: Impact of Navigational Spatial UI on Cognitive Performance in Natural Locomotion
9:16 AM	Jingjing Luo Exploring Levels of Visual Augmentation: Interactions Between User Perception and Mixed Reality Environments
9:28 AM	Varun Rao Register Aggregation for Hardware Decompileation
9:40 AM	Fiona Law Developing Rac-Enhanced Macrophage Immunotherapy for Triple-Negative Breast Cancer
9:52 AM	Sophia Hu Assessing Anti-Tumoral Potential of Rac2 ^{+/E62K} CD8 ⁺ T cells for Developing CAR-T Cell Therapy Against Triple-Negative Breast Cancer
10:04 AM	Collin Jin Food or Poison: Impact of Thomas Fire Ash on Marine Nitroalkane-Degrading Microbes
10:16 AM	Kira Liang Elucidating the Role of <i>Pseudomonadales</i> in Metabolizing Recalcitrant Aromatic Compounds in Wildfire Ash
10:28 AM	Intermission

2024 Research Symposium Schedule

Thursday, August 1

Time	Talk
10:48 AM	Minghao Zou Proton Acceleration Considerations In Time of Flight Simulations to Detect BSM Particles
11:00 AM	Yimei Liu Analyzing Interaction Dynamics in Time-Of-Flight Simulations for Enhanced Neutrino Detection
11:12 AM	Angie Yao Design and Implementation of a Two-Cell Sample Holder For High Field Electron Paramagnetic Resonance Spectrometers
11:24 AM	Jeffrey Wang Design and Validation of a Laser Coupling Mechanism for Free-Electron Laser-Powered Electron Paramagnetic Resonance Spectroscopy
11:36 AM	Joya Xu Asian Settler Colonialism: Exploring Racial Triangulation Through Hawaiian Statehood
11:48 AM	Yejee Hwang Monuments of Oppression: Uncovering Settler Colonialism in The Spanish Colonial Revival Architecture of Downtown Santa Barbara
12:00 PM	Stephanie Liu "At Heart I Am a True American": The Japanese Struggle for Citizenship in <i>Takao Ozawa v. United States</i>
12:15 PM	Lunch Break – on your own

2024 Research Symposium Schedule

Thursday, August 1

Time	Talk
1:40 PM	Opening Remarks
1:43 PM	Michael Gan Viewing Indigenous Practices as Assets: Exploring the Socio-Ecological Context of the Ende People's Food System in Western Province, Papua New Guinea
1:55 PM	Ryan Zhu An Ethnobotanical Survey of the Ende: Western Province, Papua New Guinea Is Promising Yet Understudied
2:07 PM	Shrisughan Sriganesh Leveraging Big Data to Rethink Higher Education Classification Systems
2:19 PM	Adithya Krishna Optimizing BiSQUID-Based Devices for Energy-Efficient Signal Duplication in Superconducting Electronics
2:31 PM	Janice Lee Mathematical Modeling of Optimized Signal Duplication in BiSQUID Superconducting Circuits
2:43 PM	Sophia Lande Comparative Life Cycle Assessment on Production of Key Metal Inputs to Microchips
2:55 PM	Sajeev Magesh Environmental Impact Assessment of Superconductors and Next-Generation Electronics: A Full Life Cycle Perspective
3:10 PM	Intermission
3:30 PM	Poster Session Engineering Sciences Building Courtyard
5:00 PM	End of Day 2

2024 Research Symposium Schedule

Friday, August 2

Time	Talk
9:00 AM	Opening Remarks
9:04 AM	Kayley Xu Extrusion Dynamics of Fiber Suspensions in a Liquid Matrix
9:16 AM	Kaitlyn Fan Stabilizing Rhombohedral Graphene Multilayers in Search of Superconductivity and Quantum Anomalous Hall Effects
9:28 AM	Sophia Li Elucidating the Band Structure Parameters of Bilayer Graphene
9:40 AM	Jacob Saul Archibald Characterizing the Stability of Optical Mounts for Laser Optics
9:52 AM	Rui Han Huang Crack Detection in LPBF Additive Manufacturing Using Three Dimensional COMSOL Simulation
10:04 AM	Claire An Analyzing Social Isolation in Immigrants and US-Born Populations
10:16 AM	Shaoshao (Yinuo) Tang The Effects of Work Schedule Instability on Job Turnover among Immigrants Working in Retail and Service Sectors
10:28 AM	Intermission

2024 Research Symposium Schedule

Friday, August 2

Time	Talk
10:48 AM	Kathy Duan <i>This We Believe: The Construction of Christian and Islamic Religious Masculinities in the Cultural Cold War</i>
11:00 AM	Aarnav Agrawal AR-Chef: An AI-Powered Augmented Reality Cooking Assistant for Android Devices
11:12 AM	Kaitlyn Zhang StyleMate: Achieving Sustainable Personal Style Management by Leveraging Multimodal Large Language Models
11:24 AM	Rithik Vir ARChef: An iOS-Based Augmented Reality Cooking Assistant Powered by Multimodal Gemini LLM
11:36 AM	Ayla Marie Soto Deliberate Impoverishment: Unraveling Cultural Erasure, Neocolonialism, and British Epistemicide in Contemporary African Medical Education
11:48 AM	Zoe X. Pei Insights from Colonial Zimbabwe: A Comparative Analysis of African and Western Health and Healing Philosophies
12:00 PM	Kan (Kevin) Zhang Endnotes to Plato: A Monist Ecology
12:15 PM	Lunch Break – on your own

2024 Research Symposium Schedule

Friday, August 2

Time	Talk
1:40 PM	Opening Remarks
1:43 PM	Arvick Chandnani FABMLA: A Framework for Agent-Based modeling with Unity's ML-Agents
1:55 PM	Raghav Garimella Refining Theory of Mind Capabilities: Fine-Tuning LLMs for Enhanced Performance in Social Reasoning Tests
2:07 PM	Henry Jin Leveraging Graph Neural Networks to Integrate Functional Analysis in Locked IC Key Prediction
2:19 PM	Anisha Vaish Intrusion Detection in Computer Networks: Generating Data to Emulate Real Network Traffic for ML Models
2:31 PM	William Chen Generalizable Model for Network Security: Curating a High-Quality Dataset for ML in Cybersecurity
2:43 PM	Chi Man Qian Far-Right Fantasies: QAnon and the Evolution of Antisemitic Conspiracy Theories in the Digital Age
2:55 PM	Sau Fong (Irene) Lin Girl Dinner, Modern Woman: An Ideological Analysis of Female Resistance to Food and Gender Norms
3:07 PM	Intermission

2024 Research Symposium Schedule

Friday, August 2

Time	Talk
3:27 PM	Angela Zhang Comparing Human Interaction with Mechanics-Focused Against Content-Focused AI Board Game Generator
3:39 PM	Anusha Jain The Evolution of Content Moderation From Centrally-Owned Web 2.0 to Decentralized Web 3.0: A Contrastive Analysis of X and Warpcast
3:51 PM	Runxuan Kang Investigating Small Molecule Drug Interactions with α -Synuclein in Parkinson's Disease
4:03 PM	Andrew Liang Analyzing Wild-Type and A53E-mutated α -Synuclein Interactions and Structural Evolution using Replica Exchange Molecular Dynamics and AI-based Drug Generation
4:15 PM	Cloris Shi Optimizing an <i>In Vivo</i> Electrochemical Aptamer-Based Sensor for the Bronchodilator Theophylline
4:27 PM	Ryan Davis Analyzing Hydrocarbon-Degrading Proteins in Coastal Archaea from the Saanich Inlet
4:45 PM	End of Day 3
5:30 PM	RMP Closing Event Goleta Beach – Area D