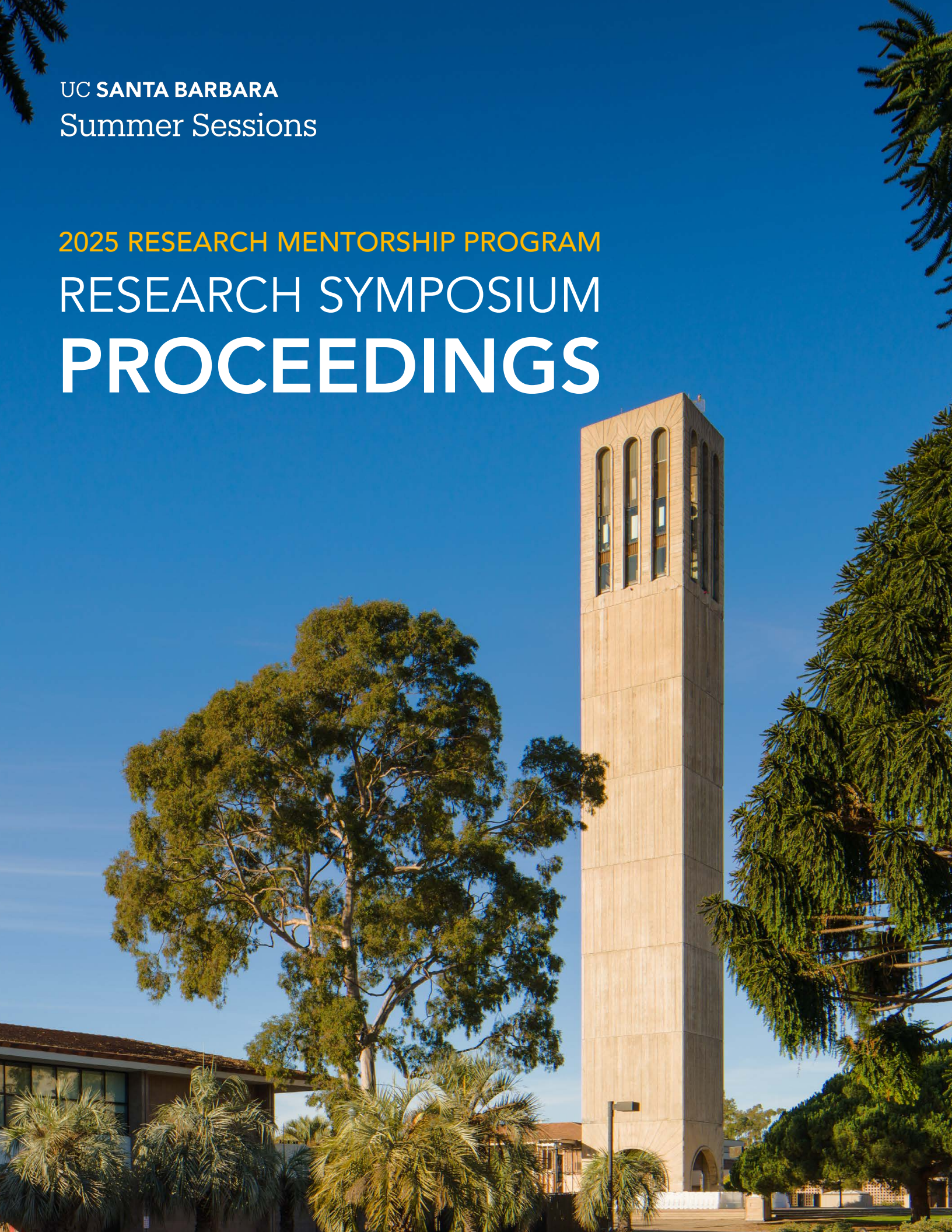


UC SANTA BARBARA  
Summer Sessions

2025 RESEARCH MENTORSHIP PROGRAM

RESEARCH SYMPOSIUM

PROCEEDINGS



## 2025 Research Symposium Schedule

Wednesday, July 30

Time	Talk
9:00 AM	<b>Opening Remarks</b>
9:04 AM	<b>Sophie Zhang</b> Identifying Noncanonical Regulators of Rh7 and Op10 Mediated Arousal in <i>Drosophila</i>
9:16 AM	<b>Lulu Cole</b> Examining the Role of SNMP2 in Bitter Taste Response Termination and Corresponding Feeding
9:28 AM	<b>Kayla L. Chin Quee</b> Bitter Taste Adaptation: The Role of SNMP2 in Peripheral Taste Organs and Extra-Oral Behaviors of <i>Drosophila melanogaster</i>
9:40 AM	<b>Sonya Nguyen Shimpock</b> Investigating the Role of Chloride Channels in Osmolality-Induced Feeding Aversion in
9:52 AM	<b>Vera Lew</b> Emotional Impact of Imagery in Anti-vaping PSAs: Comparing Semantic and Sensory-Based Features
10:04 AM	<b>Krish Korrapati</b> What We Teach Our Kids: Investigating How Political Ideologies Are Expressed Through High School
10:16 AM	<b>Muzeng (Alina) Huang</b> Fairness and Validity in NLP Models: Comparing LDA, BERTopic, and Word2Vec for Text Analysis
<b>10:28 AM</b>	<b>Intermission</b>
10:48 AM	<b>Brinda Iyer</b> Mukwerera and the Evolution of Gender in Zimbabwe: Colonial Disruption, Cultural Continuity,
11:00 AM	<b>Maximilian Y. Guo</b> Subtle Defiance: Traditional Healing as Resistance to South African Apartheid
11:12 AM	<b>Yashvi Ashish Kabra</b> Beyond Integration: Reimagining Healthcare Policy in Zimbabwe's Plural Medical System
11:24 AM	<b>Yiwen (Yvonne) Li</b> Dual-Processing CNN Pathway for Automating Graphene Screening Guided by Topological Data Analysis
11:36 AM	<b>Audrey Hsu</b> The Impact of Temperature and Metal Assisted Exfoliation on Increasing Rhombohedral Graphene
11:48 AM	<b>Zexing (Daniel) Chen</b> The Effect of Polydimethylsiloxane-Induced Uniaxial Strain on the Exfoliation Yield of
12:00 PM	<b>Aahan Ghose</b> Quantum Electrodynamic Measurements of Rhombohedral Multilayer Graphene
<b>12:15 PM</b>	<b>Lunch Break – on your own</b>

## 2025 Research Symposium Schedule

Wednesday, July 30

Time	Talk
1:40 PM	<b>Opening Remarks</b>
1:43 PM	<b>Raiya Cohen</b> Enhanced Intrusion Detection Through Deep Packet Analysis: A Generalizable Approach Using nPrint
1:55 PM	<b>Samit R. Rath</b> Learning-Based Approach for Identifying Malicious Users Behind NAT Through Network Flow Analysis
2:07 PM	<b>Sophia C. Behar</b> Refining Intrusion Detection Through Machine Learning and Deep Packet Analysis
2:19 PM	<b>Nathan J. Wu</b> Compressing Fourier Neural Operators for Speed and Efficiency
2:31 PM	<b>Chuyi (Queeny) Cao</b> A Conditional Mobility Generative Adversarial Network for Context-Aware Human Mobility Simulation
2:43 PM	<b>Vishnu Athreya</b> Comparing GANs' Ability to Generate Realistic Mobility Networks: Enhancing Our Understanding
2:55 PM	<b>Mengyuan (Amy) Zhao</b> Intersecting Gender and Culture in Perceptions of Mindfulness-Based Interventions Among Latinx
3:07 PM	<b>Intermission</b>
3:27 PM	<b>Avani Bheemaiah</b> A Signal Detection Approach to Decision Manipulations From AI and Human Sources Across Memory and Judgment Tasks
3:39 PM	<b>Daniel Persky</b> Analyzing Local Labor Market Areas and Commuting Inequality in Santa Clara County, California
3:51 PM	<b>Maeen Ababneh</b> Driven to Succeed: The Role of Expectations and Competition in Girls' Academic Performance
4:03 PM	<b>Avik Chervirala</b> Automated Microfluidic Tensiometry for Accelerated Equilibrium and Time-Resolved Interfacial Measurements
4:15 PM	<b>Aditya Ramanathan</b> Kalman Filter Significantly Accelerates Gaussian Process Models for Heart Rate Forecasting
4:27 PM	<b>Kimi Basamakov</b> Markov Chain Monte Carlo Simulation Optimizes Distribution Selection for Circular Data
4:39 PM	<b>Ivan Turan</b> Optimizing In-Brain Electrochemical Aptamer-Based Sensor Architecture for Reliable In-Brain
5:00 PM	<b>End of Day 1</b>

## 2025 Research Symposium Schedule

Thursday, July 31

Time	Talk
9:00 AM	<b>Opening Remarks</b>
9:04 AM	<b>Andrea Sien Tung Wu</b> Alt-Right but Not White: The Dissemination of Right-Wing Ideologies by Alt-Right Black Women Influencers on YouTube
9:16 AM	<b>Kyle Chan</b> "Woke" or Worthwhile? Student Perspectives on the Academic Value of UCSB's Ethnicity Requirement
9:28 AM	<b>Mabelle X. Liu</b> Intentions vs. Actions: Exploring the Personal and Social Drivers of Youth Activism on Banned Ethnic
9:40 AM	<b>Taryn Hwang</b> The Faces of Evil: Gender and Religion in Visual Portrayals of Women in the <i>Tale of Hariti</i>
9:52 AM	<b>Yifei (Leo) Yang</b> Increased Reliability of Rotating Sample Holder for High-Field Electron Paramagnetic Resonance Through Mechanical Design
10:04 AM	<b>Lily Narkunas</b> Using Split TEV P3-P4 System to Confirm Aquaporins as a Reporter Gene in C2C12 Cells For
10:16 AM	<b>Miriam Hershenson</b> Genetically Encoded Ligand Specific MRI Biosensors for Noninvasive Detection of Molecular Signals
10:28 AM	<b>Intermission</b>

## 2025 Research Symposium Schedule

Thursday, July 31

Time	Talk
10:48 AM	<b>Daisy Lu</b> Concentrating Fecal Indicator Bacteria From Marine Samples For Preparation of Microfluidic Water
11:00 AM	<b>Stephen Rong</b> Double Filtration Method for Preparation of Environmental Samples for Microfluidic Applications
11:12 AM	<b>Yu-Faye M. Yang</b> Designing Microfluidic Devices for Rapid Quantification of Fecal Indicator Bacteria in Recreational Waters
11:24 AM	<b>Iris Yu</b> Evaluating the Spatial-Temporal Variability in the Accuracy of High Resolution Modeled Wind Data Along the Inner Shelf of the Santa Barbara Channel
11:36 AM	<b>Sanvi Jha</b> Combining Salinity and Temperature Measurements for More Accurate Assessment of Baroclinic
11:48 AM	<b>Kate Lee</b> Asian-Latino Solidarity: The Role of Income on Identity and Morality in the Dual Chamber Model of Collective Action
12:00 PM	<b>Dylan K. Batra</b> The Economic Impact of Tariffs: A Time-Series Approach Using Retail Sector Data
<b>12:15 PM</b>	<b>Lunch Break – on your own</b>

## 2025 Research Symposium Schedule

Thursday, July 31

Time	Talk
1:40 PM	<b>Opening Remarks</b>
1:43 PM	<b>Aarushi Shukla</b> Patch-Based Spectral Fingerprint Extraction for Detecting AI-Generated Images and Videos Using Deep Learning
1:55 PM	<b>Avinash Prasad</b> Detecting AI-Generated Images Using Co-occurrence Matrices and Convolutional Neural Networks
2:07 PM	<b>Alex Cai</b> Understanding the Drivers of Regional Electric Vehicle Adoption in Southern California With
2:19 PM	<b>Sihyeon (Sally) Lee</b> Urban Vulnerability to Evolving MCS Impacts in South America: A Geospatial Analysis
2:31 PM	<b>Anoushka Vijay</b> Analysis of Biopharmaceutical Industry Mechanisms of Mitigating Artificial Intelligence "Black Boxes"
2:43 PM	<b>Vedansh Mannem</b> Increased Second Harmonic Generation in AlN/GaN Multiple Quantum Well Metasurfaces
2:55 PM	<b>Jingheng Lu</b> Comparing Biological and Artificial Predictive Learning in a Spatial Navigation Task
3:07 PM	<b>Nethra Iyer</b> An Integrated Platform for Microsecond-Precise Neural-Behavioral Synchronization and Automatic Behavioral Control in Rodent Experiments
3:30 PM	<b>Poster Session</b> Engineering Sciences Building Courtyard
5:00 PM	<b>End of Day 2</b>

## 2025 Research Symposium Schedule

Friday, August 1

Time	Talk
9:00 AM	<b>Opening Remarks</b>
9:04 AM	<b>Xinyi (Annie) Shan</b> Co-creating Futures Through AI-Supported Board Game Design
9:16 AM	<b>Daniel Ming</b> Digital Expressions of Discontent: A Computational Analysis of Anti-work Reddit Communities and Evolving Work Narratives
9:28 AM	<b>Ondine Goedhuis</b> From Reliance to Reflection: Exploring the Effects of Interface Design on Human-AI Collaboration
9:40 AM	<b>Sophia Zhu</b> <i>Seríamos Más Fuertes Unidos</i> : How Central Coast Immigrants Resisted the 1994 "Save Our
9:52 AM	<b>Grace Huang</b> Possessing Masculinity in Santería: Shango and the Fluid Embodiment of Gender
10:04 AM	<b>Jacob Nguyen Su</b> The Bibles and the Bots: Assessing Large Language Model Close Reading of Divisive Rhetoric in the
10:16 AM	<b>Sabrina Feldman</b> The Blame Game: Evaluating Large Language Models' Ability to Identify Moral Framing in Newspapers on the Panic of 1893
10:28 AM	<b>Intermission</b>

## 2025 Research Symposium Schedule

Friday, August 1

Time	Talk
10:48 AM	<b>Alex Zhang</b> Designing Small-Molecule Therapeutics for $\alpha$ -Synuclein Aggregation in Parkinson's Disease Using Machine Learning and Replica Exchange Molecular Dynamics
11:00 AM	<b>Ankita Nag</b> The Development of Small Molecule Therapeutics Targeting TDP-43 Aggregation in Amyotrophic
11:12 AM	<b>Hrithik R. Mallireddy</b> Investigating Interactions Between Cell-Penetrating Peptides and Biological Membranes Using Molecular Dynamics Simulations to Enhance Drug Delivery
11:24 AM	<b>Arya Rawal</b> Polarization in Climate Policy: Conflicting Responses to the 2006 Evangelical Climate Initiative
11:36 AM	<b>Yimeng I. Yuan</b> Battle for the Bench: Mitch McConnell, Conservatism, and the Weaponization of Procedure
11:48 AM	<b>Naiyuet Joyce Huang</b> Cyber Faith: The Formation and Resilience Of Chinese Buddhist Communities in Online Spaces
12:00 PM	<b>Tevin Zhou</b> The Spirit of the Machine: Techno-Animism and Ethical Social Interactions with Artificial Intelligence
<b>12:15 PM</b>	<b>Lunch Break – on your own</b>

## 2025 Research Symposium Schedule

Friday, August 1

Time	Talk
1:40 PM	<b>Opening Remarks</b>
1:43 PM	<b>Anika P. Kumar</b> Pupil Size as a Window Into Introspective Awareness in Spatial Working Memory
1:55 PM	<b>Leon Jiao</b> Investigating the Impact of Different Visuospatial Working Memory Formats on Performance
2:07 PM	<b>Maya Jagsi</b> Windows Into the Brain: Tracking Ocular Movements During Working Memory
2:19 PM	<b>Nathan Kessler</b> Modeling Coach Feedback for Sabre Fencing With Agentic AI and Extended Reality
2:31 PM	<b>Samantha Narchetty</b> Towards Agentic Tools for Drone Assistants With Humans-In-The-Loop in Extended Reality
2:43 PM	<b>Advaith Mopuri</b> Explaining Graph Neural Networks Through Invariance in Learned Group Actions
2:55 PM	<b>Mihika M. Deshpande</b> Dual-Primal Graph Explainer: Edge- and Node-Aware Explanations of Graph Neural Networks
3:07 PM	<b>Intermission</b>
3:27 PM	<b>Ayush Bheemaiah</b> Multi-Level Feature Fusion: A Hybrid CLIP and Wavelet Pipeline for Robust Synthetic Image Detection
3:39 PM	<b>Yitong (Becca) Huang</b> Investigating Emotion Appeals and Audience Engagement in AI Brain Rot on Instagram
3:51 PM	<b>Kayley Xu</b> Designing a Passive All-Dielectric Metasurface for Retinal Disease Intervention Through Beam Steering
4:03 PM	<b>Claire An</b> Popular Autocrats: Challenging Populist Notions with Latin American Right-Wing Authoritarians
4:15 PM	<b>Sophia Hu</b> Monitoring Doxorubicin-Induced Cardiotoxicity in Rats
4:45 PM	<b>End of Day 3</b>
5:30 PM	<b>RMP Closing Event</b> Goleta Beach – Area D