



**CALIFORNIA STATE  
UNIVERSITY, LONG BEACH**

# **37<sup>th</sup> ANNUAL STUDENT RESEARCH COMPETITION**

Showcasing excellence in scholarly  
research, and highlighting creative  
activity

Friday, March 7 , 2025 | 9am-1:35pm

Held In-Person



# Room Overview

*Please go to your designated room in the College of Business (COB). Rooms are separated by discipline. Please refer to the CSULB Map at the end of the program.*

**Room: COB 110:** Engineering & Computer Science

**Room: COB 111:** Behavioral & Social Sciences

**Room: COB 112:** Behavioral & Social Sciences

**Room: COB 113:** Health, Nutrition, and Clinical Sciences

**Room: COB-114:** Physical & Mathematical Sciences

**Room: COB 124:** Education

**Room: COB 218:** Humanities & Letters

**Room: COB-227:** Biological & Agricultural Sciences

**Room: COB-229:** Creative Arts and Design

**Room: COB-110**

**Friday, March 7, 2025**

**Engineering and Computer Science**

**9:15AM-9:35AM**

**Sebastian Carrillo, *Mechanical Engineering***

Faculty Sponsor: Anna Lee

Title: Large Area Enhancement of Metal-Insulator-Metal Plasmonic Nanoarrays using Hot-Grid

**9:35AM-9:55AM**

**Zhangying He, *Computational and Applied Mathematics***

Faculty Sponsor: Hossein Sayadi

Title: PowerPrint: Harnessing Machine Learning for Accurate and Efficient PC Fingerprinting via Power Consumption Analysis

**9:55AM-10:15AM**

**Lizbeth Herrera Cuen, *Mechanical Engineering***

Faculty Sponsor: Mortaza Saeidi

Title: Developing Highly Conductive Coatings for Aerospace Applications

**10:35AM-10:55AM**

**Nhaya Jimenez, *Mechanical Engineering***

Contributor: Bence Papp

Faculty Sponsor: Mortaza Saeidi

Title: Developing High-performance Organic Flexible Thermoelectrics for Wearable Applications

**10:55AM-11:15AM**

**Louai Mimoune, *Aerospace Engineering***

Faculty Sponsor: Mortaza Saeidi

Title: Enhanced Mechanical Properties of Paraffin-based Hybrid Engines with Carbon Black

**11:15AM-11:35AM**

**Omar Montes Chavez, *Mechanical Engineering***

Contributor: Tania Morales

Faculty Sponsor: Jingyi Zeng

Title: INVESTIGATION OF THE EFFECTS OF HYDROGEN BLENDING INTO METHANE NATURAL GAS SYSTEMS

**11:35AM-11:55AM**

**Sarah Usmani, *Molecular Cell Biology/Physiology***

Faculty Sponsor: Roger Lo

Title: Design and Construction of a 3D-Printed Viscometer Based on Smartphone Imaging

**Room: COB-110**

**Friday, March 7, 2025**

**Engineering and Computer Science**

**11:55AM-12:15PM**

**Ashling Bolt, *Biomedical Engineering***

Contributor: Edwin Danahy

Faculty Sponsor: Perla Ayala

Title: Engineered Composite Collagen Scaffolds for Improved Skeletal Muscle Cell Differentiation

**12:15PM-12:35PM**

**Kelly Hoang, *Biomedical Engineering***

Faculty Sponsor: Perla Ayala

Title: Development of 3D Tissue Models for Microvasculature Studies

**Room: COB-111**

**Friday, March 7, 2025**

**Behavioral and Social Sciences**

**9:15AM-9:35AM**

**Miranda Arnold, *Psychology***

Faculty Sponsor: Samar Needham

Title: Does the presence of a premorbid learning disability (LD) moderate the relationship between recovery and anxiety in TBI patients?

**9:35AM-9:55AM**

**Amy Chacon, *Sociology***

Faculty Sponsor: Martha Franco

Title: First-Generation Latinx Immigrants Retirement Planning

**9:55AM-10:15AM**

**Calvin Chiu, *Psychology***

Faculty Sponsor: Samar Needham

Title: Does Deafness Refine Visuospatial Memory in Congenital or Acquired Deaf Individuals?

**10:15AM-10:35AM**

**Fonzie Diaz, *Sociology***

Faculty Sponsor: Esa Syeed

Title: Queer Performativity: Navigating Virtual and Material Spaces

**10:35AM-10:55AM**

**Robert Fajardo, *Sociology***

Faculty Sponsor: Roberto Ortiz

Title: Closeted Classmates: Examining the Precarity of Concealing and Communicating Queer Student Identities

**11:15AM-11:35AM**

**Jessica King, *Creative Writing***

Contributor: Emily Doffing

Faculty Sponsor: Danielle Kohfeldt

Title: Beyond the Icebreaker: The Multiple Melting Points of Facilitating Participatory Action Research with Disabled Graduate Students

**11:35AM-11:55AM**

**Kristina Mariani, *Psychology***

Faculty Sponsor: Amy Wax

Title: An Experimental Investigation of Perceptions of Bisexual Job Applicants

**Room: COB-111**

**Friday, March 7, 2025**

**Behavioral and Social Sciences**

**11:55AM-12:15PM**

**Grace Min, *Psychology***

Faculty Sponsor: Chantrey Murphy

Title: Examining the Effects of Intergroup Contact on Peers' Evaluations in Task Group Settings

**12:15PM-12:35PM**

**Eilene Nop, *Psychology***

Faculty Sponsor: Guido Urizar

Title: Remembered parental care and parental self-efficacy effects on the current attitudes in mothers and fathers

**12:35PM-12:55PM**

**Denise Santana, *English Literature***

Faculty Sponsor: Araceli Esparza

Title: Rebel Familia: Recognizing 1990s Southern California Party Crews as Sites of Resistance for Chicana/o/x Youth and Exploring Identity Formation through Rebel Subcultural Style

**12:55PM-1:15PM**

**Josue Valiente, *Linguistics***

Faculty Sponsor: Michael Ahland

Title: Towards Describing San Bartolome Quialana Zapotec Phonology

**Room: COB-112**

**Friday, March 7, 2025**

**Behavioral and Social Sciences**

**9:15AM-9:35AM**

**Sanjana Pantsachiv, *Psychological Research***

Faculty Sponsor: Guido Urizar

Title: Biopsychosocial Factors Associated with Benefit Finding in Low-income Mothers

**9:35AM-9:55AM**

**Mai Phuong Pham, *Psychology, Option in Human Factors***

Faculty Sponsor: David Illingworth

Title: Improving Human Judgment with Explanations in AI-Integrated Decision Aids

**9:55AM-10:15AM**

**Emily Siu, *Psychological Research***

Faculty Sponsor: Arturo Zavala

Title: Zolmitriptan, a serotonin 1B receptor agonist, blocks the preference for ethanol in female adolescent rats

**10:15AM-10:35AM**

**Shakhzoda Khodjakhonova, *Finance***

Faculty Sponsor: Laura Gonzalez

Title: Understanding Borrower Behavior in Credit Risk Assessment and its Implications for Financial Inclusion

**10:55AM-11:15AM**

**Kameron Stout, *Psychological Research***

Faculty Sponsor: Barbara Caplan

Title: Patterns and Predictors of Trajectories of Therapists' Use of Evidence-Based Practices: Findings from a Hybrid Type III Implementation Trial of An Individualized Mental Health Intervention for Autism (AIM HI)

**11:15AM-11:35AM**

**Olivia Romero, *Anthropology***

Faculty Sponsor: Jeanelle Uy

Title: Assessing the pelvic canal and iliac flare as indicators of gut size

**11:35AM-11:55AM**

**Nhi Tran, *Linguistics - TESOL***

Faculty Sponsor: Sarvenaz Hatami

Title: Textbook Vocabulary Analysis

**Room: COB-112**

**Friday, March 7, 2025**

**Behavioral and Social Sciences**

**12:15PM-12:35PM**

**Sydney Washington,**  
*Sport, Exercise, and Performance Psychology*  
Faculty Sponsor: Leilani Madrigal  
Title: Reinjury Anxiety and Body Dissatisfaction in Female College Athletes

**12:35PM-12:55PM**

**Alessandra Scolastici,** *Sociology*  
Faculty Sponsor: Roberto Ortiz  
Title: Exploited Earth, Exploited Bodies: Women in California's Agricultural Industry

**12:55PM-1:15PM**

**Kate Prell,** *Geography*  
Faculty Sponsor: Christine Jocoy  
Title: Defining Cannabis Equity and Its Challenges in Long Beach, California

**1:35PM-1:55PM**

**Melanie Sandoval,** *Anthropology*  
Faculty Sponsor: Steven Osuna  
Title: Central American Studies: An Intellectual History



**Room: COB-113**

**Friday, March 7, 2025**

**Health, Nutrition, and Clinical Sciences**

**9:15AM-9:35AM**

**Ruby Barragan, *Psychology***

Faculty Sponsor: Guido Urizar

Title: The 5-HTT Genotype and Childhood Experiences on Maternal Diurnal Cortisol

**9:35AM-9:55AM**

**Mason Caragao, *Kinesiology***

Contributor: Adam Zeidan

Faculty Sponsor: Evan Schick

Title: The Effects of weight belts and lifting straps on conventional deadlift performance

**9:55AM-10:15AM**

**Viviana Jimenez, *Psychology***

Faculty Sponsor: Guido Urizar

Title: Moderating Effects of Pregnancy Anxiety on the Cortisol Awakening Response and Estrinol

**10:35AM-10:55AM**

**Annie Lin, *Psychological Research***

Faculty Sponsor: Arturo Zavala

Title: Zolmitriptan, a 5-HT<sub>1B/1D</sub> agonist, differentially affects the rewarding effects of methamphetamine in adolescent male and female rats

**10:55AM-11:15AM**

**Jacob Nguyen, *Psychology***

Faculty Sponsor: Guido Urizar

Title: Postpartum Perceived Stress Mediates the Association Between Relational Satisfaction and Healthy Eating

**11:15AM-11:35AM**

**Zahra Muthalip, *Molecular Cell Biology/Physiology***

Faculty Sponsor: YuanYu Lee

Title: DIY - A Low-Cost 3D Printed Medical Grade Electrophoresis Device

**Room: COB-114**

**Friday, March 7, 2025**

**Physical and Mathematical Sciences**

**9:15AM-9:35AM**

**Camille Beard, *Applied Physics***

Faculty Sponsor: Alex Klotz

Title: Optical Tweezers: Assembly & Force Calibration

**9:35AM-9:55AM**

**Adam Bowen, *Applied Physics***

Faculty Sponsor: Jiyeong Gu

Title: Optimizing NbN Thin Films for Long-Range Proximity and Odd Triplet Superconductivity in Hybrid Josephson Junctions

**9:55AM-10:15AM**

**Jose Camacho Osuna, *Physics***

Faculty Sponsor: Sarah Grefe

Title: Quantum Topological Phases Arising from the Weyl-Kondo Semimetal model

**10:15AM-10:35AM**

**Yuuki Funakoshi, *Chemistry***

Faculty Sponsor: Stephen Mezyk

Title: Steady-state Gamma Irradiation for Evaluating Radiolytic Reaction Kinetics of 5-LIO(Me-3,2-HOPO) in Aqueous Solution

**10:35AM-10:55AM**

**Holland Karaghiaulleian, *Physics***

Faculty Sponsor: Thomas Gredig

Title: Atomic Force Microscopy Imaging of Kinetoplast DNA

**10:55AM-11:15AM**

**Mark Malabanan, *Physics***

Faculty Sponsor: Andreas Bill

Title: Usadel Equations in a New Hyperbolic Function Parameterization

**11:15AM-11:35AM**

**Isaac Obert, *Philosophy***

Faculty Sponsor: Jeffrey Pair

Title: Perfect Polychorons: Equable Shapes in Higher Dimensions

**Room: COB-114**

**Friday, March 7, 2025**

**Physical and Mathematical Sciences**

**11:55AM-12:15PM**

**Nestor Plascencia, *Physics***

Faculty Sponsor: Thomas Gredig

Title: Nanoscale Surface Morphology of Metal  
Phthalocyanine Thin Films

**12:15PM-12:35PM**

**Shane Chung, *Applied Statistics***

Faculty Sponsor: Olga Korosteleva

Title: Detecting Brain Activity Irregularities to Distinguish  
Alzheimer's and Multiple Sclerosis from Healthy States

**12:35PM-12:55PM**

**Lan Viet Hoang, *Applied Statistics***

Faculty Sponsor: Olga Korosteleva

Title: Predicting Heart Disease Trends in Tajikistan: A Data-  
Driven Approach Using Regression Modeling

**12:55PM-1:15PM**

**Sowon Jung, *Applied Statistics***

Faculty Sponsor: Olga Korosteleva

Title: Modeling Survival Distribution of Patients with  
Monoclonal Gammopathy of Undetermined Significance  
(MGUS)

**1:15PM-1:35PM**

**Lakely Nealis, *Applied Statistics***

Faculty Sponsor: Olga Korosteleva

Title: Modeling Aviation Weather Forecast Errors: A  
Machine Learning Approach

**Room: COB-124**

**Friday, March 7, 2025**

**Education**

**9:15AM-9:35AM**

**Liliana Barajas, *Sociology***

Faculty Sponsor: Azza Basarudin

Title: Community in South Central LA: Black and Latine Working-Class Mothers

**9:35AM-9:55AM**

**Xiomara Barillas Polanco, *Molecular Cell Bio/Physiology***

Contributor: Harmony Genevieve Panameno

Faculty Sponsor: Kim Kelly

Title: Family Reminiscing and Child Recollection After an Informal Science Learning at an Aquarium

**9:55AM-10:15AM**

**Jaclyn Caballero, *Educational Leadership***

Faculty Sponsor: Paul Ratanasiripong

Title: THE ROAD TO TURNOVER: INVESTIGATING WORK-LIFE DEMANDS, RESOURCES, AND BURNOUT AMONG EARLY CHILDHOOD EDUCATION TEACHERS

**10:35AM-10:55AM**

**Michelle Chin, *Linguistics - TESOL***

Faculty Sponsor: Rebekha Abbuhl

Title: The Effect of Online Writing Tools in L2 Writing Classes

**10:55AM-11:15AM**

**Tammy Nguyen, *Counseling***

Faculty Sponsor: Paul Ratanasiripong

Title: Understanding Asian International and Immigrant Students' Experience in California Public Colleges and Universities: Acculturation, Belonging, Academic Outcomes, and Well-Being

**11:15AM-11:35AM**

**Emily Ramon, *Counseling - SDHE***

Faculty Sponsor: Paul Ratanasiripong

Title: EXPLORING MENTAL HEALTH LANDSCAPE: INVESTIGATING DEPRESSION, ANXIETY, STRESS, AND ATTITUDES TOWARD SEEKING MENTAL HEALTH HELP AMONG LATINX AND AFRICAN AMERICAN COMMUNITY COLLEGE STUDENTS IN CALIFORNIA

**11:35AM-11:55AM**

**Minh Nguyen, *History***

Faculty Sponsor: Eileen Luhr

Title: Professor of History

**Room: COB-218**

**Friday, March 7, 2025**

**Humanities and Letters**

**9:15AM-9:35AM**

**Yael Alexander-Moore, *Linguistics - TESOL***

Contributor: Kenna Meno

Faculty Sponsor: Itaxso Rodriguez

Title: A Stylistic and Phonetic Analysis of Falling Diphthongs of Black South African English in Trevor Noah's Speech

**9:35AM-9:55AM**

**Delfino Camacho, *Journalism***

Faculty Sponsor: Madeleine Liseblad

Title: A Journalist Ahead Of His Time: Ruben Salazar Navigating Truth and Objectivity, Activism and Authority

**9:55AM-10:15AM**

**Lani Chavez, *Linguistics - German***

Faculty Sponsor: Robert Blankenship

Title: Gen Z Doesn't Want to Work Anymore: A Metamorphosis of East German Socialism in Miss Butterfly as Modern Work Culture

**10:15AM-10:35AM**

**Darya Jafarinejad, *Creative Writing***

Faculty Sponsor: Azza Basarudin

Title: Songs of Freedom: Resilience and Resistance In Persian Mythology and the "Woman, Life, Freedom" Movement in Iran

**10:35AM-10:55AM**

**Kass Malcor, *History***

Faculty Sponsor: Skye Lynch

Title: Moralization and Mystification: Rhetoric of California AIDS Propositions, 1986-88

**11:15AM-11:35AM**

**Isaiah Navarro, *Philosophy***

Faculty Sponsor: Cory Wright

Title: Brand Blanshard's Coherence Theory of Truth

**11:35AM-11:55AM**

**Isabella Pinheiro, *International Studies***

Faculty Sponsor: Lauren Heidbrink

Title: Colectivo Vida Digna: A Community-Based Research

**Room: COB-218**

**Friday, March 7, 2025**

**Humanities and Letters**

**11:55AM-12:15PM**

**Jason Rosencrantz, *Philosophy***

Faculty Sponsor: Cory Wright

Title: Nominalism and the Metaphysics of Thought in  
Locke's Essay

**12:15PM-12:35PM**

**Rizu (Liz) Sato, *Philosophy***

Faculty Sponsor: Nellie Wieland

Title: Empathy as Distinctive Emotion from Other  
Emotions

**12:35PM-12:55PM**

**Alyssa Rowland, *Psychology***

Faculty Sponsor: Keith Claybrook

Title: A Study for the Advancement of Diversity,  
Equity, Inclusion, and Accessibility Initiatives at Cal State  
University, Long Beach: A Case Study on Academic Affairs

**Room: COB-227**

**Friday, March 7, 2025**

**Biological and Agricultural Sciences**

**9:15AM-9:35AM**

**Bridgett Do, *Molecular Cell Biology/Physiology***

Faculty Sponsor: YuanYu Lee

Title: Molecular Docking Analysis of A Novel Interaction between Bisphenol A and the full length of Human Androgen Receptor

**9:35AM-9:55AM**

**Youn Han, *Biochemistry***

Faculty Sponsor: Vasanthy Narayanaswami

Title: COMPARATIVE CONFORMATIONAL ANALYSIS OF RECONSTITUTED DISCOIDAL AND SPHERICAL HDL BEARING APOLIPOPROTEIN E3 AND E4

**9:55AM-10:15AM**

**Danny Herrera-Lopez, *Molecular Cell Biology/Physiology***

Faculty Sponsor: Varenka Lorenzi

Title: Organochlorine Contaminants in Sharks and Rays of Southern California

**10:35AM-10:55AM**

**Charley Moeller, *Marine Biology***

Faculty Sponsor: Michael Carlson

Title: Quantification of diatom-infecting ssDNA viruses using the polony method

**10:55AM-11:15AM**

**Fabiana Paredes, *Biology***

Faculty Sponsor: Michael Carlson

Title: A Genomic Exploration Into dsRNA Viruses in the Southern California Coast: A Polony Approach

**11:15AM-11:35AM**

**Anthony Rios, *Biochemistry***

Faculty Sponsor: Deepali Bhandari

Title: Understanding stress survival signaling in colorectal cancer cells

**11:35AM-11:55AM**

**Keira Spiller, *Marine Biology***

Contributor: Dylan Baldiviezo

Faculty Sponsor: Benjamin Perlman

Title: Buried Alive: Sand Burial Behaviors of the Round Stingray (*Urobatis halleri*)

**Room: COB-229**

**Friday, March 7, 2025**

**Creative Arts and Design**

**9:15AM-9:35AM**

**Aleyna Akkan, *Human Experience Design Interactions***

Faculty Sponsor: Heather Barker

Title: Epistellar, a healthcare wearable

**9:35AM-9:55AM**

**Alana Loinaz, *Cinematic Arts***

Contributor: Sungbin Moon

Faculty Sponsor: Susan Bloom

Title: Resonance and Remembrance

**9:55AM-10:15AM**

**Luis Lara, *Human Factors***

Contributor: Polo-Zahir Rodriguez

Faculty Sponsor: Sam Anvari

Title: Blurred, Bright, or Just Right? How Screens Impact Your Drive





# Special Thanks

## Committee

Natasha Amanda, Elyzza Aparicio, Carlos Guijarro, Joy Hansen, Destiny Holmes, Daniela Martinez, Victoria Min, Jackie Morales, Zahra Muthalip, Ammisha Opoku-Boamah, Ellyssa Paik, Dina Perrone, Nakiya Rosser, Rishik Shinh, Barbara Taylor

## Partners

Academic Affairs, Graduate Center, Office of the Provost, Office of Research and Economic Development, Office of Undergraduate Research Services, Undergraduate Research Opportunity Program, VP of Graduate Studies

## Moderators & Volunteers

Daisy Aguirre, Srujana Caitlin Below, Swathi Botcha, Robert Garcia, Drashti Gorakhiya, Shiv Karthee Janardhanan, Surya Mahesh, Juan Mendoza, Vincent Miramontes-Andrade, Kevin Mora, Nikki Nadler, Abhishek Nirmal, Oluwaseun Oriretan, Cecilia Paredes, Varun Patil, Roshni Rabindra Sahoo, Joyli Rumao, Brandon Shane, Noppakan Sirikul, Sahil Vanjara, Sarah Velasco, Margaret Welch

## Jurors

Juror names are not revealed, they are sent a special thanks and signed certificate from Associate Vice President of Research and Sponsored Programs, Dr. Barbara Taylor

