



**CALIFORNIA STATE UNIVERSITY,  
LONG BEACH**

# **35th ANNUAL STUDENT RESEARCH COMPETITION**

Showcasing excellence in scholarly  
research, and highlighting creative  
activity

Friday, March 10, 2023 | 9 am - 1:15 pm  
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.*

**COB 110:** Engineering & Computer Science

**COB 114:** Behavioral & Social Sciences

**COB 112:** Behavioral & Social Sciences

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

**COB 217:** Physical & Mathematical Sciences

**COB 228:** Education

**COB 217:** Humanities & Letters

**COB 218:** Humanities & Letters

**COB 111:** Biological & Agricultural Sciences

**COB 113:** Creative Arts & Design

**COB 228:** Business, Economics, and Public Administration

**Room: COB-110**

**Friday, March 10, 2023**

**Engineering and Computer Science**

9:15AM-9:35AM

**Jack Hanson**, *Chemical Engineering*  
Faculty Sponsor: Sara Moghtadernejad  
Title: Droplet Behavior Upon Thermally Aged Benzoxazine Composite Materials

9:35AM-9:55AM

**Ricardo Bazurto**, *Electrical Engineering*  
Faculty Sponsor: Ava Hedayatipour  
Title: CMOS PPG Sensor with Correcting Feedback for Effects of Skin Pigmentation

9:55AM-10:15AM

**Changhee Song**, *Chemical Engineering*  
Faculty Sponsor: Yu Yang  
Title: System Optimization for Solid Oxide Electrolysis Cells

10:15AM-10:35AM

**Zachary Johnson**, *Chemical Engineering*  
Faculty Sponsor: Sara Moghtadernejad  
Title: Dynamics of Droplet Impact on a Superhydrophobic Disk

10:35AM-10:55AM

**Mandy Zhangying He**, *Computer Engineering*  
Faculty Sponsor: Hossein Sayadi  
Title: Breakthrough to Adaptive and Cost-Aware Hardware-Assisted Zero-Day Malware Detection: A Reinforcement Learning Based Approach

10:55AM-11:15AM

**Richard Nguyen**, *Electrical Engineering*  
Faculty Sponsor: Henry Yeh  
Title: Classifying Shark Behaviors using CNN and RNN in Time and Frequency Domain

11:15AM-11:35AM

**Luis Gutierrez**, *Biology*  
Faculty Sponsor: Roger Lo  
Title: A Mobile Phone-Based Device for Liquid Viscosity Measurements

**Room: COB-110**

**Friday, March 10, 2023**

**Engineering and Computer Science**

11:35AM-11:55AM

**Moses Villeda**, *Biomedical Engineering*

Faculty Sponsor: Siavash Ahrar

Title: Milifluidic Platforms for Cultivation and Biomechanics Studies of Dendroaster Eccentricus

11:55AM-12:15PM

**Gabriela Murrieta**, *Biomedical Engineering*

Faculty Sponsor: Ga-Young Kelly Suh

Title: Expandable Catheter-Deployable Impeller for Computational Fluid Dynamics Simulation

12:15PM-12:35PM

**Chelsea William Fernandes**, *Computer Science*

Faculty Sponsor: Hossein Sayadi

Title: A Machine Learning-Based Approach for Personalized and Adaptive Learning Experience

12:35PM-12:55PM

**Shilpa Divakara**, *Mechanical & Aerospace Engineering*

Faculty Sponsor: Navdeep Dhillon

Title: Heat Transfer Performance Enhancements Using Fundamental Studies of Liquid Drops and Vapor Bubbles in High Electric Fields

12:55PM-1:15PM

**Elizabeth Cotto**, *Aerospace Engineering*

Faculty Sponsor: Adeline Schmitz

Title: Permeability Testing on LMPAEK

**Room: COB-114**

**Friday, March 10, 2023**

**Behavioral and Social Sciences**

9:15AM-9:35AM

**Blake Krawl, *Psychology***

Faculty Sponsor: James Binnall

Title: Confusion in the Golden State: Californians with a Felony Conviction Contemplate Their Newfound Juror Eligibility

9:35AM-9:55AM

**Isabella Di Lauro, *Psychological Research***

Faculty Sponsor: Bill Pedersen

Title: Upset Over the Threat of Climate Change: Worry and Anger Mediate the Relationship Between Fear and Collective Action Intentions

9:55AM-10:15AM

**Maya Shankar, *Psychology, Psychological Research***

Faculty Sponsor: Bill Pedersen

Title: Love Thy Neighbor and Not Thy Group: State Anger and Perceptions of Target Hostility Mediate the Relationship Between Collective Narcissism and Aggression

10:15AM-10:35AM

**Genecy Chopin, *Criminal Justice/Criminology***

Faculty Sponsor: Connie Ireland

Title: A Qualitative Study: The Impact of Homelessness Criminalization on Individuals Experiencing Homelessness in Los Angeles

10:35AM-10:55AM

**Francisco Hernandez, *Psychological Research***

Faculty Sponsor: Bill Pedersen

Title: Two is Trouble, Six is Worse: The moderating Effect of Temporal Distance, Social Exclusion, and Group Size on Anger

10:55AM-11:15AM

**Alina Tran, *Psychology***

Faculty Sponsor: Kim Vu

Title: Evaluation of Pedometer Interfaces for Mobile Apps

**Room: COB-114**

**Friday, March 10, 2023**

**Behavioral and Social Sciences**

11:15AM-11:35AM

**Maeve Allen, *Psychology***

Faculty Sponsor: Courtney Ahrens

Title: How Low Hope Impacts the Depressive Symptoms of Trauma Survivors

11:35AM-11:55AM

**Mario Rodriguez Jr., *Psychology***

Faculty Sponsor: Yada Treesukosol

Title: The Effects of Alternate Day Fasting on Number of Taste Buds in Female and Male Rats

11:55AM-12:15PM

**Julia Jensen, *Human Development***

Faculty Sponsor: Kristy Shih

Title: Shifting Religious Ideologies: Exploring the Impacts of Childhood Family Dynamics on Adulthood Religious Change and Mental Health Outcomes

12:15PM-12:35PM

**Kayleigh Hart, *Kinesiology - Sport and Exercise Psychology***

Faculty Sponsor: Leilani Madrigal

Title: The Impact of Learning Styles on Academic and Athletic Motivation in Collegiate Athletes

12:35PM-12:55PM

**Kalani Lopez, *Criminology & Criminal Justice***

Faculty Sponsor: Christine Scott-Hayward

Title: Evaluating GUIDES: Results from Officer Focus Group

**Room: COB-112**

**Friday, March 10, 2023**

**Behavioral and Social Sciences**

9:15AM-9:35AM

**Rozaaluwi Neak, *Social Work***

Faculty Sponsor: Janaki Santhiveeran

Title: Interaction Effect of Heart Disease and Psychological Distress

9:35AM-9:55AM

**Camryn McInerney, *Social Work***

Faculty Sponsor: Janaki Santhiveeran

Title: Impact of Sociodemographic Disadvantages on a Cross Ethnoracial Sample of Adolescents

9:55AM-10:15AM

**Leah Keen, *Social Work***

Faculty Sponsor: Janaki Santhiveeran

Title: Stress Among Healthcare Workers in California During the COVID-19 Pandemic

10:15AM-10:35AM

**Victoria Min, *Health Science-Community Health Education***

Faculty Sponsor: Virginia Gray

Title: The Impact of COVID on Nutrition Educators' Efforts on Maintaining Rigor & Grace

10:35AM-10:55AM

**Sharon Tran, *Social Work***

Faculty Sponsor: Janaki Santhiveeran

Title: Gender-Based Healthcare Disparities Among Asians During the COVID-19 Pandemic

10:55AM-11:15AM

**Diana Than, *Psychology***

Faculty Sponsor: Courtney Ahrens

Title: Reasons Why IPV Survivors' Request Restraining Orders and the Complications Encountered

11:15AM-11:35AM

**Julie Nguyen, *Social Work***

Faculty Sponsor: Janaki Santhiveeran

Title: Prevalence and Determinants of Depression among Diversity Asian American Women during COVID-19

**Room: COB-112**

**Friday, March 10, 2023**

**Behavioral and Social Sciences**

11:35AM-11:55AM

**Nick Brewster**, *Psychological Research*

Faculty Sponsor: Araceli Gonzalez

Title: Perceived Family Treatment Stigma Across Latinx, Asian American, and White College Students: Relationship to Attitudes Toward Help-Seeking

12:15 PM-12:35PM

**Donald Davis**, *Psychology/Philosophy*

Faculty Sponsor: Ann Kim

Title: Social Media and Anxiety of Gen Z during the COVID 19 Pandemic

12:35 PM-12:55PM

**Elizabeth Rangel**, *Sociology*

Faculty Sponsor: Chantrey Murphey

Title: A Critical Assessment of Mandatory Reporting Policy and Practice

**Room: COB-113**

**Friday, March 10, 2023**

**Health, Nutrition, and Clinical Sciences**

9:15AM-9:35AM

**Cecilia Flores**, *Physical Education - Teacher Education*  
Faculty Sponsor: Melissa Bittner  
Title: Nutrition Intervention at a Summer Camp for Children with Disabilities

9:35AM-9:55AM

**Madeleine Phan**, *Biochemistry*  
Faculty Sponsor: Jackie Dawson  
Title: Examining Levels of Behavioral Support in a Mobile Health (mHealth) Exercise Intervention for Cardiometabolic Disease Based on Participant Exercise Adherence

9:55AM-10:15AM

**Daniela Martinez**, *Nutrition & Dietetics*  
Faculty Sponsor: Michelle Barrack  
Title: Drive for Muscularity and Dietary Supplement Use Among a Multiethnic Sample of University Students

10:15AM-10:35AM

**Elizabeth Avila**, *Kinesiology Exercise Science*  
Faculty Sponsor: Jennifer Bagwell  
Title: Kinematics, Kinetics, and Muscle Activation During and After Pregnancy While Running Compared to Nulligravida Females

10:35AM-10:55AM

**Tammy Nguyen**, *Psychology*  
Faculty Sponsor: Arturo Zavala  
Title: Pretreatment with Liraglutide Attenuates the Acquisition of Methamphetamine Preference in Female Adolescent Rats

10:55AM-11:15AM

**Emma Rosas**, *Health Care Administration*  
Faculty Sponsor: Young-Hee Cho  
Title: The Effectiveness of Dual-Task Training in Improving Balance, Strength, and Executive Function of Community Dwelling Older Adults

**Room: COB-217**

**Physical and Mathematical Sciences**

12:15PM-12:35PM

**Lauren Tran**, *Applied Statistics*

Faculty Sponsor: Hojin Moon

Title: Identification and Validation of Prognostic Genomic  
Predictive Signature for Lung Cancer Patients in  
Personalized Medicine

**Room: COB-228**

**Friday, March 10, 2023**

**Education**

9:15AM-9:35AM

**Brenda Avalos**, *School Psychology*

Faculty Sponsor: Kristin Powers

Title: Covid 19 Impact on Social Emotional Wellness in Latinx Students

9:35AM-9:55AM

**Tuyet-Suong Sabrina Nguyen**, *Counseling*

Faculty Sponsor: Paul Ratanasiripong

Title: Asian American and Pacific Islander Social Justice Attitudes

**Room: COB-217**

**Friday, March 10, 2023**

**Humanities and Letters**

9:35AM-9:55AM

**Shane Jacobson, *Journalism***

Faculty Sponsor: Madeleine Liseblad

Title: "The Father of Baseball:" - Henry Chadwick,  
Baseball's First Promoter

9:55AM-10:15AM

**Raley Zurcher, *Philosophy***

Faculty Sponsor: Cory Wright

Title: Color as Form: Segmentation as the Primary Role  
of Color Vision

10:15AM-10:35AM

**Samantha O'Mara-Mezzano, *French***

Faculty Sponsor: Clorinda Donato

Title: The Adulteress and the Skull

10:35AM-10:55AM

**Raya Torres, *Journalism***

Faculty Sponsor: Madeleine Liseblad

Title: Importance of Radio Journalism During and  
After the Japanese Attack on Pearl Harbor

10:55AM-11:15AM

**Jassica Halim, *French and Francophone Studies***

Faculty Sponsor: Clorinda Donato

Title: Hypocrisy of Clerics in Marguerite de Navarre's  
Heptaméron

11:15AM-11:35AM

**Yahui Chen, *Philosophy***

Faculty Sponsor: Max Rosenkrantz

Title: Aristotle on Goodwill in Friendships

11:35AM-11:55AM

**Michelle Rivera, *Creative Writing***

Faculty Sponsor: Stephen Cooper

Title: Ask Camilla: Racial and Ethic Tensions in John  
Fante's Ask the Dust

**Room: COB-218**

**Friday, March 10, 2023**

**Humanities and Letters**

9:15AM-9:35AM

**Danny Pham**, *French and Francophone Studies*

Faculty Sponsor: Clorinda Donato

Title: The Evolution of Michel de Montaigne's Feminist Thought

9:35AM-9:55AM

**Gabriela Mayoral**, *French and Francophone Studies*

Faculty Sponsor: Clorinda Donato

Title: The Role of Female Homosexuality in the Deconstruction of Virile Honor: Female Bonds in the Eighth Novella of Marguerite de Navarre's Heptameron

9:55AM-10:15AM

**Cody Spjut**, *Philosophy*

Faculty Sponsor: Cory Wright

Title: The Complexity of Meaning in the Philosophy of Language

10:15AM-10:35AM

**Peden Sager**, *Philosophy*

Faculty Sponsor: Patrick Dieveney

Title: An Expansion of Instrumental Value

10:35AM-10:55AM

**Toko Dougherty**, *Philosophy*

Faculty Sponsor: Cory Wright

Title: Brute Facts and Understanding

10:55AM-11:15AM

**Mikayla Winfrey**, *History*

Faculty Sponsor: Keith Claybrook

Title: Exploring the Practice of Anti-Black Colorism in Anime - A Case Study

11:35AM-11:55AM

**Chavva Olander**, *Philosophy*

Faculty Sponsor: Marie Jayasekera

Title: Deciding Under the Influence: The Relevance of Perceived Access to Influential Factors on Our Decisions

11:55AM-12:15PM

**Evelyn Ortiz Soto**, *Political Science*

Faculty Sponsor: Kathryn Perkins

Title: Binary by Law: Sexism and the Legal Construction of Gender and Sexuality in *Bostock v. Clayton Co. (2020)*

**Room: COB-111**

**Biological and Agricultural Sciences**

10:35AM-10:55AM

**Zahraa Hagar**, *Molecular Cell Biology and Physiology*  
Faculty Sponsor: Vasanthi Narayanaswami  
Title: Structure-Function Relationship in Apolipoproteins and Application of Nanolipoproteins in Targeted Drug Delivery

10:55AM-11:15AM

**Alexandra Bland**, *Biology*  
Faculty Sponsor: Raisa Hernández-Pacheco  
Title: Multiple Levels of Density Regulation in a Social Primate

11:15AM-11:35AM

**Megan Dinh**, *Molecular Cell Biology & Physiology*  
Faculty Sponsor: Yuan Yu Lee  
Title: Identification of Species-Specific Bisphenol A Binding Sites on Estrogen Receptor Beta By Computer Simulation

11:35AM-11:55AM

**Sean Ono**, *Marine Biology*  
Faculty Sponsor: Benjamin Perlman  
Title: Urobatis Halleri Strikes Back!: 3D Tail Kinematics of the Round Stingray

11:55AM-12:15PM

**Katrina Jensen**, *Biochemistry*  
Faculty Sponsor: Jason Schwans  
Title: The Synthesis and Inhibition of Fmoc-Lys(CH<sub>3</sub>)<sub>2</sub>-O- in Butyrylcholinesterase and Acetylcholinesterase

12:15PM-12:35PM

**Jacob Sobol**, *Marine Biology*  
Faculty Sponsor: Benjamin Perlman  
Title: Watch Your Step! Stingray Sting Prevention

12:35PM-12:55PM

**Adren Blanco**, *Psychology*  
Faculty Sponsor: Houg-Wei Tsai  
Title: Effects of Androgen Receptor on Sexual Dimorphism in Mouse Behavior

12:55PM-1:15PM

**Joyce Choi**, *Cell and Molecular Biology/Physiology*  
Faculty Sponsor: Yuan Yu Lee  
Title: DIY - A Low Cost 3D Printed Molecular Biology Grade Electrophoresis Device

**Room: COB-113**

**Friday, March 10, 2023**

**Creative Arts & Design**

11:35AM-11:55AM

**Alvaro Caceres Munoz**, *Music Composition*

Faculty Sponsor: Martin Herman

Title: Living Coding in Western Classical Music

11:55AM-12:15PM

**Mary Catherine Wilbur**, *Animation*

Faculty Sponsor: Soyeon Kim

Title: Production of Across the DMZ: The Land  
we Lost and Found

**Room: COB-228**

**Friday, March 10, 2023**

**Business, Economics, & Public Administration**

12:15PM-12:35PM

**Jakob Madsen**, *Finance*

Faculty Sponsor: Laura Gonzalez

Title: How a US Central Bank Backed Digital Dollar Can Facilitate a Better Economy and Society

12:35PM-12:55PM

**Justin Gamoras**, *Business Economics*

Faculty Sponsor: Yutian Chen

Title: Application of Economic Game Theory and Nash-Q Reinforcement Learning in Studying Data Preservation Sensor Nodes



# Special Thanks

## Committee

Natasha Amanda, Elyzza Aparicio, Ammarah Bashir, Miranda Bates, Jody Cormack, Mae DeBruin, Emily Doffing, April Estrada, Penelope Gaibor, Andee Gonzalez, Simon Kim, Pauline Menchavez, Odalis Perez, Daniela Martinez, Tanya Nguyen, Michelle Phan, Giovanni Quevedo, Michelle Ramirez, Kim Scatton

## Partners

Academic Affairs, Graduate Center, Office of the Provost, Office of Research and Economic Development (ORED), Office of Undergraduate Research Services (OURS), Undergraduate Research Opportunity Program (UROP)

## Moderators

Natasha Amanda, Ammarah Bashir, Omar Hussein, Pauline Menchavez, Andie Niederecker, Ellyssa Paik, Paola Plascencia, Erica Snelgrove

## Jurors

Juror names are not revealed, they are sent a special thanks and signed certificate from Associate Vice President of Office of Research and Economic Development of Dr. Simon Kim

A B C D E F G H



**LEGEND**

- Building
- CSULB Campus Shuttle Stop
- Long Beach Transit Bus Stop
- Metro Stop
- Parking Pay Station
- University Police
- Amazon @ The Beach

**PARKING**

- Student/General Parking
- Short-Term Parking
- Resident Parking
- Employee/Restricted Parking
- Lot 10A Permit Parking
- 15-Min Loading Zone
- Motorcycle Praking

