

STUDENT RESEARCH & CREATIVE ACTIVITY SYMPOSIUM

2022

Recognizing the Pursuit of Research,
Scholarship and Creative Activities
by Our Students

Monday | March 7, 2022

University Union, 9:00 am –3:00 pm



STUDENT RESEARCH CENTER
SACRAMENTO STATE



*Presented by: Academic Affairs, The Student Research Center,
and The Offices of Research, Innovation, and Economic Development*

Event Schedule

*Jurors and student presenters, please check in at the Redwood Room on the 1st floor before heading to your session. Light refreshments will be served from 8:00 am to noon.

9:00 am – 10:40 am	Session 1: Arts & Letters (Cottonwood III Room, 2nd floor)
11:20 am – 1:00 pm	Session 2: Arts & Letters (Cottonwood III Room, 2nd floor)
9:00 am – noon	Session 3: Biological Sciences (Walnut Room, 2nd floor)
9:00 am – noon	Session 4: Biological Sciences (Oak Room, 2nd floor)
9:00 am – noon	Session 5: Engineering, Science, and Math (Cottonwood I Room, 2nd floor)
9:00 am – 11:40 am	Session 6: Engineering, Science, and Math (Cottonwood II Room, 2nd floor)
9:00 am – 11:40 am	Session 7: Social Sciences & Interdisciplinary Studies (Auburn Room, 3rd floor)
11:40 am – 1:40 pm	Session 8: Social Sciences & Interdisciplinary Studies (Folsom Room, 3rd floor)
9:00 am – 11:40 am	Session 9: Education (Maidu Room, 3rd floor)
9:00 am – 11:00 am	Session 10: Health & Human Services (Miwok Room, 3rd floor)



Welcome students, faculty, family, and friends!

On behalf of the Student Research Center and the Offices of Research, Innovation, and Economic Development (ORIED), we welcome you to the 2022 Sacramento State Student Research & Creative Activity Spring Symposium. This campus-wide event highlights and celebrates the research, scholarship, and creative activities of our students and their faculty mentors. The Spring Symposium provides a public forum for their work as well as an exciting experience for all. In addition, Spring Symposium awardees are selected to represent Sacramento State at the 36th CSU Student Research Competition.

At this year's event, approximately 90 students are presenting 68 original scholarly works. The top presentations will be awarded the Provost's Award for Research Excellence in recognition of their outstanding achievement in original scholarship. In addition, faculty mentors of student awardees will receive professional development awards in recognition of their contributions to these emerging scholars. We will also select up to 10 presentations to represent Sacramento State at the 36th CSU Student Research Competition, which will be held at San Francisco State University on April 29 and 30, 2022.

Thank you to all student presenters for sharing their work and to faculty, staff, family, and friends of our presenters for joining us today for this special event. It gives us great pride to celebrate these emerging scholars and their work.

With warm regards,

Dr. Ron Coleman,
Interim Director
Student Research Center

Session 1: Arts & Letters

9:00 am – 10:40 am

Cottonwood III Room, 2nd floor

- 9:05 am** **The Art of Death: A Look into the Lost Seventeenth-Century Baroque Polish Art of the Portret Trumienny – Coffin Portraits**
Anastasia Thompson
Undergraduate, Art History
Mentor: Rachel Miller, Ph.D.
- 9:25 am** **Who's to Blame For This? Free Will Skepticism and the Error of Punitive Justice**
Ethan Hekker
Undergraduate, Philosophy
Mentors: John Park, Ph.D. and Garret Merriam, Ph.D.
- 9:45 am** **The Supremacy of the Humanities: A Symbolurgical Manifesto**
Eric Winslow
Graduate, Humanities and Religious Studies
Mentor: Harvey Stark, Ph.D.
- 10:05 am** **#CommunicationSoWhite**
Elizabeth Ruyak, Sage Beamon, Brittney Grotz, Lucas Kaitsas-Wilson,
and Christine Shelby
Graduates, Communication Studies
Mentor: Andrea Terry, Ph.D.
- 10:25 am** **Assault on Women in Transit**
Megan Ugarte
Graduate, Communication Studies
Mentor: Sonya Castorena, Ph.D.

End of session

Session 2: Arts & Letters

11:20 am – 1:00 pm

Cottonwood III Room, 2nd floor

- 11:25 am UX - Civilian Climate Corps project**
Samantha Friend
Undergraduate, Graphic Design
Mentor: Lauren Kelly, Ph.D.
- 11:45 am Examining the Impact of a Class Hierarchy in America**
Caitlyn Le
Undergraduate, English
Mentor: Hellen Lee, Ph.D.
- 12:05 am Revolutionary Recluse: The Politics of Wanderer Above a Sea of Mist**
Elizabeth Hall
Alumna, Fine Arts
Mentor: Mya Dosh, Ph.D.
- 12:25 pm The Token Trope: Turning a Blind Eye to Documented Reality**
Mariam Abbas
Graduate, Communication Studies
Mentor: Michele Foss-Snowden, Ph.D.
- 12:45 pm Structuralism in Literary Studies and the Role That It Plays in 2022**
Mikaela Huang
Graduate, English
Mentor: Jonas Cope, Ph.D.

End of session

Session 3: Biological Sciences

9:00 am – noon

Walnut Room, 2nd floor

- 9:05 am The Effect of Egg Size and Female Parent Body Size on Fecundity in Substrate Spawning Cichlids in the Wild**
Olivia Sinclair
Graduate, Biological Sciences
Mentor: Ronald Coleman, Ph.D.

9:25 am Optimizing Methods to Quantify Metal Transporter Gene Expression in *Clostridioides difficile*

Amanda Ilang-Ilang
Undergraduate, Biological Sciences
Mentors: Chris Lopez, Ph.D.

9:45 am Egg Size Determines Fry Size in Cichlid Fishes

Jessica Hopper
Undergraduate, Biological Sciences
Mentor: Ronald Coleman, Ph.D.

10:05 am Investigating the Transcriptomic Responses to Heat Stress and Starvation in the Economically Important Red Abalone *Haliotis rufescens*

Hanna Franklin
Undergraduate, Biological Sciences
Mentor: Lani Gleason, Ph.D.

10:20 – 10:40 am BREAK

10:45 am Investigating the Relationship between Aggression and Longevity in Fruit Flies

Abigail McInnes
Undergraduate, Biological Sciences
Mentor: Johannes Bauer, Ph.D.

11:05 am Kismet Affects the Gut-Brain Axis in *Drosophila melanogaster*

Salma Elliessy
Undergraduate, Biological Sciences
Mentor: Kimberly Mulligan, Ph.D.

11:25 am Survey of Breeding Locations of Intertidal Fish

Bear Waymire
Undergraduate, Biological Sciences
Mentor: Ronald Coleman, Ph.D.

11:45 pm Assessing Contemporary & Future Implications of Gametophyte ecogeographic Divergence between Polyploid Ferns and Their Progenitors

Serena Blais
Undergraduate, Biological Sciences
Mentor: Clayton Visger, Ph.D.

End of session

Session 4: Biological Sciences

9:00 am – noon
Oak Room, 2nd floor

- 9:05 am** **Measuring Gene Amplification Frequencies and Investigating the Role of Starvation Stress Using the Model Organism *Acinetobacter baylyi***
Nancy Villanueva
Undergraduate, Biological Sciences
Mentor: Andrew Reams, Ph.D.
- 9:25 am** **Sources of *E. coli* and Mitigation of *E. coli* in the American River**
Broderick Whitford
Alumnus, Environmental Science
Mentors: Erik Porse, Ph.D.
- 9:45 am** **The Optimization of Mutant Collecting in *Acinetobacter baylyi* for Amplification Mutation Analysis**
Heidi Solis
Undergraduate, Biological Sciences
Mentors: Andrew Reams, Ph.D.
- 10:05 am** **Elucidating the Role of Selective Stress on Gene Amplifications in *Acinetobacter baylyi***
Agata Koprowska
Alumna, Biological Sciences
Mentor: Andrew Reams, Ph.D. and Semaarhy Quinones-Soto, Ph.D.
- 10:20 am – 10:40 am** **BREAK**
- 10:45 am** **Isolation and Screening of Soil Bacteria for their Antimicrobial Potential Against Relevant Pathogens**
Melanie Dibbell, Maria Benavides Uribe, and Robert Montoya
Undergraduates, Biological Sciences
Mentor: Enid Gonzalez-Orta, Ph.D.
- 11:05 am** **Bisphenol A Differentially Impacts Neurodevelopment in *Drosophila melanogaster* from Distinct Genetic Backgrounds**
Joseph Yull
Graduate, Biological Sciences
Mentor: Kimberly Mulligan, Ph.D.

- 11:25 pm** **Identifying Population-Specific DNA Methylation Patterns in the Marine Snail *Tegula funebris* to Examine Thermal Tolerance**
 Jazmine Harvey and Arianna Alamshahi
 Undergraduates, Biological Sciences
 Mentor: Lani Gleason, Ph.D.
- 11:45 pm** **Analyzing the Early and Subsequent Events of Gene Amplification Mutation Formation Using a Model System in *Acinetobacter baylyi***
 Staci Rocco
 Undergraduate, Biological Sciences
 Mentor: Andrew Reams, Ph.D.

End of session

Session 5: Engineering, Science, and Math

9:00 am – noon

Cottonwood I Room, 2nd floor

- 9:05 am** **Calculating the Gamma-Ray Luminosity from Neutron Star Mergers' Jets**
 Haley Steuber
 Undergraduate, Physics and Astronomy
 Mentor: Rodolfo Barniol Duran, Ph.D.
- 9:25 am** **Off Axis Jet Model in C++**
 Joseph Ceccarelli
 Undergraduate, Physics and Astronomy
 Mentor: Rodolfo Barniol Duran, Ph.D.
- 9:45 am** **Engineering Taxadiene Synthase for Improved Product Specificity to Enable a Microbial Host for Taxol Production**
 Adam Clapp
 Undergraduate, Chemistry
 Mentor: Mary McCarthy-Hintz, Ph.D.
- 10:05 am** **Injection Stratigraphy in the West Area of the Cat Canyon Oil Field, California**
 Alexander Ryan
 Undergraduate, Geology
 Mentor: David Shimabukuro, Ph.D. and Theron Sowers, MS

10:20 am – 10:40 am **BREAK**

- 10:45 am** **Depth and Volume of Oil Production and Water Injection into the Subsurface of the Lost Hills Oil Field**
 Jacqueline Betancourt
 Undergraduate, Geology
 Mentor: David Shimabukuro, Ph.D.
- 11:05 am** **Measurement of Endocrine Disrupting Chemicals in Invertebrates**
 Elizah Hernandez
 Undergraduate, Chemistry
 Mentor: Justin Miller-Schulze, Ph.D.
- 11:25 am** **The First Total Syntheses of Lorneic Acid J and An Alternative Total Synthesis of Lorneic Acid A**
 Jay Patel
 Alumnus, Chemistry
 Mentor: Claudia Lucero, Ph.D.
- 11:45 pm** **Chemometric Based Machine Learning to Characterize Self-Heating Polyunsaturated Fatty Acids in Fire Debris for Forensic Identification**
 Smith Purdum
 Graduate, Chemistry
 Mentor: Justin Miller-Schulze, Ph.D.

End of session

Session 6: Engineering, Science, and Math

9:00 am – 11:40 pm

Cottonwood II Room, 2nd floor

- 9:05 am** **Determining Flow Resistance and Shear Stress based on Measurements on the Flow, Hydraulic Radius, and Fall Between Two Cross Sections**
 Nelya Shevelenko
 Undergraduate, Civil Engineering
 Mentor: Cristina Poindexter, Ph.D.
- 9:25 am** **3-D Modeling of Stratigraphy and Injection in the Cat Canyon Oil Field, California**
 Laura Glaser
 Undergraduate, Geology
 Mentor: David Shimabukuro, Ph.D. and Theron Sowers, MS

- 9:45 am** **Analyzing the Effects of Pluton Size and Composition on Schlieren-Bound Magmatic Structures in the Sierra Nevada, California.**
 Ethan Dreger
 Undergraduate, Geology
 Mentor: Katie Ardill, Ph.D.
- 10:05 am** **Depth and Distribution of Shallow Offshore Oil and Gas Activity in the Wilmington Oil Field, Southern California**
 Kailah Jenkins
 Undergraduate, Geology
 Mentor: David Shimabukuro, Ph.D. and Theron Sowers, MS
- 10:20 am – 10:40 am** **BREAK**
- 10:45 am** **How the American River Levee Upgrades Ease Erosion and Shear Stress**
 Jack Graham
 Undergraduate, Civil Engineering
 Mentor: Cristina Poindexter, Ph.D.
- 11:05 am** **Effect of Sample Alignment on Porosity Development and Mechanical Properties During Selective Laser Melting (SLM)**
 Harjeet Gill
 Alumnus, Mechanical Engineering
 Mentor: Alan Meier, Ph.D.
- 11:25 am** **TopicGAN: Fake Online Review Detection Using Topic Modelling**
 Sirish Prabakar
 Graduate, Computer Science
 Mentor: Haiquan Chen, Ph.D.

End of session

Session 7: Social Sciences & Interdisciplinary Studies

9:00 am – 11:40 pm
 Auburn Room, 3rd floor

- 9:05 am** **Perceived Psychological Impacts of Wearing Face Masks**
 Alex Chan
 Undergraduate, Psychology
 Mentor: Jianjian Qin, Ph.D.

- 9:25 am** **The Roles Risk Perception, Cooperation, and Information Confidence Play in Confronting an Incurable Infectious Disease: The Case of Huanglongbing in California**
 Samuel Haynes
 Graduate, Economics
 Mentor: Jonathan Kaplan, Ph.D. and Ajay Singh, Ph.D.
- 9:45 am** **Mothers' Gender Role Attitudes Relate to Daughters' but Not Sons' Gender Role Attitudes**
 Samantha Waters
 Graduate, Psychology
 Mentor: Jianjian Qin, Ph.D.
- 10:05 am** **The Soul's Legacy: A Wholistic EOL Planning Program Empowering Healthy Older Adults to Prepare for Existential Suffering**
 Marcia Brim
 Graduate, Gerontology
 Mentors: Donna Jensen, Ph.D., Catheryn Koss, Ph.D., and David Cook, Ph.D.
- 10:20 am – 10:40 am** **BREAK**
- 10:45 am** **Discussing Differences: A Simple Activity to Foster Faculty Collaborations Across Diverse Disciplines and Institutions**
 Ethan Roberts
 Graduate, Biological Sciences
 Mentors: Kelly McDonald, Ph.D., Cathy Ishikawa, Ph.D., and Bailey Von der Mehden, Ph.D.
- 11:05 am** **Where to Bring Your Good News: Perceived Responses to Capitalization Attempts Across Close Relationships and Happiness Among Emerging Adults**
 Hayden Jungling
 Undergraduate, Psychology
 Mentor: Meliksah Demir, Ph.D.
- 11:25 am** **Demystifying Undergraduate Research Experiences to Increase Access and Equity for Four-Year and Community College Students**
 Eric Pennino
 Graduate, Biological Sciences
 Mentor: Kelly McDonald, Ph.D.

End of session

Session 8: Social Sciences & Interdisciplinary Studies

11:40 am – 1:40 pm
Folsom Room, 3rd floor

- 11:45 am** **Examining Faculty Use of Inclusive and Equitable Language Through the Lens of course Syllabi**
Shelby Chandar and Ryan Crum
Undergraduates, Kinesiology
Mentors: Sayonita Ghosh Hajra, Ph.D., Cathy Ishikawa, Ph.D., and Kelly McDonald, Ph.D.
- 12:05 pm** **Memories Through Tinted Glass: How Attachment Styles Influence Relationship Memories**
Cristian Valencia
Graduate, Psychology
Mentor: Jianjian Qin, Ph.D.
- 12:25 pm** **Impact of Scientist Spotlights in Bio2**
Ryan Harris
Graduate, Mathematics and Statistics
Mentor: Joya Mukerji, Ph.D.
- 12:45 pm** **A Regression Analysis Exploring the Causal Factors of Type 2 Diabetes**
Alexandria Torres
Graduate, Public Policy and Administration
Mentor: Rob Wassmer, Ph.D.
- 1:05 pm** **Beyond Partisan Identity Polarization: How Politician-Specific Polarization Influences Media Trust**
Sebastian Cambrey
Graduate, Political Science
Mentor: Danielle Martin, Ph.D.
- 1:25 pm** **How People with Disabilities Navigate Intimacy and Sexuality During a Global Pandemic**
Deborah Bruffett
Graduate, Anthropology
Mentor: Megan Raschig, Ph.D.

End of session

Session 9: Education

9:00 am– 11:40 pm
Maidu Room, 3rd floor

- 9:05 am** **Discrepancy Model: Qualifying Students for Special Education Services Under SLDs**
Noemi Zavala Lopez
Graduate, Graduate and Professional Studies
Mentor: Eric Claravall, Ph. D
- 9:25 am** **Immigrant Parent Engagement**
Prisila Isais
Graduate, Doctorate in Educational Leadership
Mentor: Amber Gonzalez, Ph.D.
- 9:45 am** **Using Social Justice Poetry to Develop Critical Thinking Skills Among Students with Learning Differences**
Patricia Garcia
Graduate, Teaching Credentials
Mentor: Eric Claravall, Ph.D.
- 10:05 am** **Exploring How Preschool Students with Disabilities Engage with Books That Feature Racially Diverse Characters**
Erica Walthall
Graduate, Teaching Credentials
Mentor: Eric Claravall, Ph.D
- 10:20 am – 10:40 am** **BREAK**
- 10:45 pm** **Examining How Undocumented Student Resource Centers in California Motivate Social Change**
Ashtin Olin
Undergraduate, Undergraduate Studies
Mentor: Basia Ellis, Ph.D.
- 11:05 pm** **Adolescents’ Relationship with Food During the COVID-19 Pandemic**
Pamela Corona
Undergraduate, Undergraduate Studies
Mentor: Alicia Herrera, Ph.D

11:25 pm **Visible or Invisible Web Content Analysis of Women's Resource Centers**
Aisha Engle
Graduate, Graduate and Professional Studies
Mentor: Sherrie Carinci, Ph. D.

End of session

Session 10: Health & Human Services

9:00 am – 11:00 am
Miwok Room, 3rd floor

9:05 am **Hearing Status and Cognition in Gerontology Journals**
Bella Brown-Quigley
Graduate, Communication Sciences & Disorders
Mentor: Laura Gaeta, Ph.D.

9:25 am **Developing a Measure of Spanish Health Literacy in Audiology**
Joseph Arquette
Graduate, Communication Sciences & Disorders
Mentor: Laura Gaeta, Ph.D.

9:45 am **Effects of Communication and Language Problems on Anxiety and Depression Symptoms in TBI Patients Post-Injury**
Lauren Achen, Melissa Abramson, Alex Douglass, and Megan Rogers
Undergraduates, Communication Sciences & Disorders
Mentor: Tonia Davis, Ph.D.

10:05 am **Project Withdrawn**

10:25 am **Acute Physical Therapy Management of An Individual Following Posterior Fossa Hemangioblastoma Resection in The Context of Von-Hippel Lindau Disease**
Samantha Conway
Graduate, Physical Therapy
Mentor: Katrin Mattern-Baxter, Ph.D.

10:45 am **Health and Wellness Resource Fair**
Roya Zaki, Makenzie Pierce, and Nina Vu
Undergraduates, Biological Sciences
Mentors: Jennifer Lundmark, Ph.D., Julie Fogarty, Ph.D., Robin Altman, Ph.D., and Reva Wittenberg, Ph.D.

End of session

Acknowledgments

This event would not be possible without the guidance and support of our faculty mentors and jurors. We would like to thank the following:

Faculty Mentors

Robin Altman	Amber Gonzalez	Justin Miller-Schulze
Katie Ardill	Enid Gonzalez-Orta	Joya Mukerji
Rodolfo Barniol Duran	Alicia Herrera	Kimberly Mulligan
Johannes Bauer	Cathy Ishikawa	John Park
Sonya Castorena	Donna Jensen	Cristina Poindexter
Haiquan Chen	Jonathan Kaplan	Erik Porse
Eric Claravall	Lauren Kelly	Jianjian Qin
Ronald Coleman	Catheryn Koss	Megan Raschig
David Cook	Hellen Lee	Drew Reams
Jonas Cope	Chris Lopez	David Shimabukuro
Tonia Davis	Claudia Lucero	Ajay Singh
Meliksah Demir	Jennifer Lundmark	Harvey Stark
Mya Dosch	Danielle Martin	Andrea Terry
Basia Ellis	Katrin Mattern-Baxter	Lindy Valdez
Julie Fogarty	Mary McCarthy-Hintz	Clayton Visger
Michele Foss-Snowden	Kelly McDonald	Rob Wassmer
Laura Gaeta	Alan Meier	Reva Wittenberg
Sayonita Ghosh Hajra	Garret Merriam	
Lani Gleason	Rachel Miller	

Faculty Jurors

Jaime Jackson

Nikolaos Lazaridis

Thuy Lindsay Dao

David Sledge

Rachel Miller

Kimberly Aguilar

Matthew Krauel

Paolo Taboga

Drew Reams

Chris Lopez

Nandini Singh

Ronald Coleman

Lani Gleason

Katie Ardill

Shannon McClorry

Kimberly Mulligan

Amy Wagner

Mary-Kate Finnegan

Atousa Yazdani

Danielle Martin

Jacob Fisher

Adam Berrey

Serpil Atamaz-Topcu

Jai Joon Lee

Brian DiSarro

Alan Meier

Briana Zaragoza

Patrick Pieng

Alexa Sardina

Gwenaelle Begue

Mary Breunig

Important Dates

April 29 & 30, 2022
36th CSU Student Research Competition
San Francisco State University

For more information, please contact:
Student Research Center
California State University, Sacramento
6000 J Street, Library 2026
Sacramento, CA 95819-6149

Website: csus.edu/studentresearchcenter
Phone: (916) 278 – 6629
Email: student.research@csus.edu



SACRAMENTO STATE