# 2018 ANNUAL PROVOST'S STUDENT RESEARCH & CREATIVE ACTIVITY

# FALL FORUM

Friday, November 9, 2018
University Union


*PRESENTED BY: STUDENT RESEARCH CENTER, THE OFFICE OF RESEARCH, INNOVATION, AND ECONOMIC DEVELOPMENT, AND ACADEMIC AFFAIRS*

## Program Schedule

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| 9:00 – 9:30 am | Student Check-in for Session 1 |
| 9:30 – 11:00 am | Session 1 Opening Remarks by Dr. Semarhy Quinones-Soto<br>*Director, Student Research Center* |
| 9:30 – 11:00 am | Session 1 Poster Presentations |
| 11:00 – 11:30 am | Session 1 poster removals<br>Student Check-in for Session 2 |
| 11:00 – 11:15 am | SRC Student Research Ambassadors Program &<br>Introduction to the 2019 Spring Symposium Event Changes |
| 11:20 – 11:50 am | *Communicate your Research through Storytelling*<br>By: Theron Sowers, SRC Research Ambassador, Geology |
| noon – 12:05 pm | Session 2 Opening Remarks by Dr. Yinfa Ma<br>*Associate Dean, Natural Sciences & Mathematics* |
| noon – 1:30 pm | Session 2 Poster Presentations |
| 1:35 – 2:00 pm | Session 2 poster removals |
| 2:00 pm | Event Ends |

# Welcome students, faculty, family and friends!

On behalf of the Student Research Center, the Office of Research, Innovation, and Economic Development, and Academic Affairs, we welcome you to the 5th annual Student Research and Creative Activity Fall Forum. This campus-wide event highlights and celebrates the research, scholarship, and creative activities of our students and their faculty mentors. The Fall Forum provides a vibrant public environment for the dissemination of their work and an exciting experience for all.

This campus-wide event highlights and celebrates the research and creative activities of our students and their faculty mentors. There are 82 posters being presented at this event, with 105 individuals contributing as presenters, and 42 research mentors. Student researchers represent 20 departments and programs across five colleges.

This event also allows students to practice their presentations skills in preparation for the campus-wide Student Research & Creative Activity Spring Symposium on Monday, March 4th, 2019. Top student oral presentations will be awarded the Provost's Award for Research Excellence, and move on to represent Sacramento State at the systemwide Annual CSU Student Research Competition on April 26-27, 2019. Awardees' Faculty Mentors will be granted professional development funds.

Thank you for joining us today for this special event. It gives us great pride to present these emerging scholars and their work to you, and we encourage you to share your enthusiasm and appreciation with them throughout the day.

With warm regards,

Dr. Semarhy Quinones-Soto
Interim Director, Student Research Center

## Session 1, 9:30 am – 11:00 am

**Zimmerman, William**, *Geology*
Hurricane Harvey Rainout

**Hughes, Christine**, *Geology*
Implications of Land Use Practices on Coastal Ecosystems as Determined via Geochemical Properties in Corals of Salt River Bay, St. Croix, USVI

**McDonald, Devin**, *Geology*
Folsom Lake Isotopic Model

**Davidson, Elizabeth**, *Geology*
Reconstructing Temperature and Carbonate Ion Concentration in the Santa Barbara Basin Using Planktic Foraminifera

**Difuntorum, Shyla** & **Herrmann, Jennifer**, *Biological Sciences*
Enrichment of Precursor Cells of Gene Amplification Mutants Prior to Selective Pressure in *Acinetobacter baylyi*

**Ghobashy, Rola** & **Awwad, Habeeba**, *Biological Sciences*
Iron-Limitation and Siderophore Formation Increase *cat* Gene Amplification Mutant Frequencies in *Acinetobacter baylyi*

**Vega, Mariela**, *Biological Sciences*
Additional Sup35 Reduces DMSO Mediated Curing in Weak [PSI+]

**Daud, Parwana** & **Tong, Michael**, *First-Year Experience*
The First Year Experience Space: Contributing to Academic Success

**De Jerez, Alyssabeth**, *Psychology*
Ethnicity and Its Association with Family Respect and University Belonging

**Braafladt, Joshua** & **Eid, Georges**, *Chemistry*
Organic Synthesis of Lorneic Acid

**Mudrenko, Pavel**, *Biological Sciences*
Synthesis of Bicyclic Derivatives of 3-Amino-1,2,4-triazole: Standard vs. Microwave Approaches

## Session 1, 9:30 am – 11:00 am

**Bonham, Jessica** & **Heltzel, John**, *Civil Engineering*
Communicating with Maps: Using Maps in Water Quality Engineering

**Lagunas Guerrero**, **Yozantli**, *History*
Mexican-American Education Project, 1968-1973

**Sulaiman, Noor**, *Biological Sciences*
Intra and Inter tissue Somatic Instability in Fragile - X Syndrome

**Wani, Gaurav Dilip**, *Computer Science*
Text to Speech Normalization Using Deep Learning

**Albert, Diane**, *Speech Pathology & Audiology*
NF1, NF2, Schwannomatosis, and Dysphagia: A Systematic Review of the Literature

**Chapman, Alannah** & **Molinari, Alma**, *Anthropology*
Age Estimation of *Ursus americanus* through Epiphyseal Fusion

**Norton, Jason**, *Anthropology*
Differential Fragmentation at Kathy's Rockshelter

**de Anda, Elisa**, *Chemistry*
Exchange of Bridging Ligands and Synthesis of Rhodium Trimer Clusters

**Curtis, Samuel**, *Biological Sciences*
Preliminary Assessment of Host Age Factors in Host Choice by the Pupal Parasitoid *Spalangia cameroni*

**Maiquez, Vincent**, *Biological Sciences*
Insecticide Resistance Development in the Filth Fly Pupal Parasitoid, *Spalangia cameroni* (Hymenoptera: Pteromalidae), Using Laboratory Selections

**Navarro, Jessica**, *Biological Sciences*
Assessing the Effects of Commercially-available Adult House Fly (Diptera: Muscidae) Baits on Larval Development Under Laboratory Conditions

## Session 1, 9:30 am – 11:00 am

**Almazan, Michael** & **Mihalas, Angela**, *Biological Sciences*
Adult House Fly (Diptera: Muscidae) Insecticide Resistance Development Using Larval Population Selections with Commercially-available Bait Formulations

**Martinez, Christian**, *Chemistry*
Design and Synthesis of New Macrocycles for Host-guest Interactions

**Jacobs, Michaela**, *Chemistry*
Searching for New Chemical Reactions to Cleave DNA

**Heltzel, John** & **Shinneman, Joel**, *Civil Engineering*
Modeling Low Impact Development (LID) in an Urban Retrofit Scenario: A Case Study at Davis Manor

**Shinneman, Joel** & **Heltzel, John**, *Civil Engineering*
Hydraulic Testing of Friable Media

**Mishchenko, Michael**, *Chemistry*
Employing Light to Activate Anti-Cancer Pro-Drugs

**Rodriguez, Cristina**, *Biological Sciences*
Designing a Motion-capture System Used for Quantifying Glide Trajectories of Humboldt Flying Squirrels (*Glaucomys oregonensis*)

**Garnier, Christopher**, *Physics and Astronomy*
A Search for Emerging Jet Signatures with the ATLAS Detector at CERN

**Nestler, Danielle** & **Krebs, Allison**, *Biological Sciences* Assessing Phenotypic Effects of Heat Stress and Starvation in the Economically Important Red Abalone, *Haliotis rufescens*

**Medina, Kenia**, *Physics and Astronomy* Data Quality Monitoring Display for the FLIC Board in the ATLAS FAST TracKer Trigger at CERN

**Adame, Mayra** & **Fuentes, Cecilia**, *Sociology*
Parental Perspective: Afterschool Program's Impact on Under-resourced Parents and Children

## Session 1, 9:30 am – 11:00 am

**Stein, Jacqueline** & **Murphy, Lillian**, *Chemistry*
Investigating Neural Stem Cell Proliferation in *Drosophila* to Determine the Potential Neurodevelopmental Impacts of Bisphenol-A Exposure

**Tinsley, Brendan** & **Palacios, Yomira**, *Biological Sciences* Developmental Exposure to Bisphenol-A Causes Axon Outgrowth Defects in *Drosophila melanogaster*

**Nguyen, Uyen** & **Sen, Yen**, *Biological Sciences*
Analyzing *Drosophila* Courtship Behavior to Determine the Potential Neurodevelopmental Impacts of Bisphenol-A Exposure

**Tupikova, Angelina**, *Biological Sciences*
Examining How Bisphenol-A Affects Synapse Formation in a *Drosophila* Model of Autism

**Welch, Chloe**, *Biological Sciences*
The Autism-associated Chromatin Modifier, Chromodomain Helicase DNA Binding Protein 8, Affects Axon Guidance and Behavioral Phenotypes in *Drosophila*

**Kern, Afton**, *Anthropology*
Animals Past and Present

**Lacey, Savauna** & **Bryeans, Shelby**, *Psychology*
A Comparison of Preprinted and Write on Response Cards in a College Classroom

**Eid, Georges**, *Chemistry*
Synthesis of Lorneic Acid

**Taylor, Danielle**, *Physics and Astronomy*
Data Quality Monitoring for the Input Mezzanine Board on the Fast Tracker Trigger in the ATLAS Detector at CERN

## Session 2, noon – 1:30 pm

**Fabricante, Gino**, *Physics and Astronomy*
Simulating the Pulsars of our Galaxy

**Hu, Kai Siang**, *Physics and Astronomy*
Installation and Testing of the gFEX board for the ATLAS Calorimeter Trigger Upgrade

**Bedolla, Amanda** & **Ayala-Valdez, Lizvette**, *Biological Sciences*
Developing Tissue Sampling and RNA Extraction Methods to Study Genetic Mechanisms of Thermal Tolerance in the Marine Snail *Chlorostoma funebralis*

**Rabi, Mohammad**, *Electrical and Electronic Engineering* Optimized Bidding in a Mix-Energy Power Plant Consisted of Gas, Solar and Storage Units

**Chavez, Bernardo** & **Bautista, Erik**, *Chemistry*
Isolation of Cytotoxic Compounds from Oshála (*Ligusticum grayi*) Root

**Sanders, Nicholas**, *Physics and Astronomy*
Modeling Cells with Giant Vesicles Encapsulating Actin Networks

**Durbin, Dakota**, *Anthropology*
Relationship Between Behavior and Craniofacial Morphology: A Look at Domestication

**Visueta, Victoria**, *Ethnic Studies*
Understanding Language Loss and Its Relationship to Language Acquisition and Power in Multilingual Settings: A Case Study on How Identity Formation is Muted in Our Classrooms

**Estebanez, Andres** & **Telles, Eric**, *Computer Engineering* SParkSys: The Smart Parking System

**Peterson, Stephanie**, *Biological Sciences*
Optimization of DNA Extraction Methods for Analysis of Gut Microbiota in a *Drosophila* Model of Autism

## Session 2, noon – 1:30 pm

**Cummings, Ryan**, *Biological Sciences*
Characterization of Competitive and Cooperative Bacterial Ecology Mediated by Metabolite Sharing

**Hua, Thy**, *Biological Sciences*
Optimization of Growth for Prominent Skin-Associated Yeast Species

**Tran, Jennifer**, *Biological Sciences*
Antimicrobial Co-treatment of Fluoxetine and Probiotic *Lactobacillus plantarum* for Improved Wound Healing

**Valdez, Nico**, *Biological Sciences*
Optimization of Fluorescence *In Situ* Hybridization for Characterizing Biogeography of the Skin Microbiota

**Nguyen, Gloria**, *Biological Sciences*
Free Fatty Acid Interactions with Skin Microbes

**Buccola, Madison**, *Public Policy and Administration*
Effect of Foreclosure and Short sale on Home Price

**Shachar, Sonny**, *Physics and Astronomy*
Gamma-Ray Bursts: Unveiling the Mystery of the Gamma-Ray Emission

**DeRobertis, Summer** & **Stilleke, Andrew**,
*Biological Sciences*
Egg Size Determines Fry Size in Cichlid Fishes

**Hirano, Chad**, *Biological Sciences*
Sacramento Pikeminnow Predation of Juvenile Salmonids in the Sacramento River and Tributaries

**Delascagigas, Ayelet**, *Biological Sciences*
Using a Novel Optical Instrument to Characterize Algal Blooms and Determine Their Effects on Sacramento-San Joaquin Delta Smelt

## Session 2, noon – 1:30 pm

**Moore, Colleen**, *Biological Sciences*
Influence of Predatory-pair Size Asymmetry on Parental Investment Dynamics in a Biparental Cichlid Fish, the Convict Cichlid (*Amatitlania nigrofasciata*)

**Watkins, Alexandra**, *Biological Sciences*
Genetic Diversity and Population Structure of the Central American Cichlid, *Amatitlania septemfasciata*

**Benitez, Breann**, *Biological Sciences*
The Evolution of Mouthbrooding: Are Mouthbrooder Eggs Different?

**LeFevre, Jamie M.,** *Biological Sciences*
Mapping the Distribution of a Fog Lichen in Northern California

**Schulte, Kristyn**, *Biological Sciences*
Comparative Landscape Genetics of Two North American Mesocarnivores

**Rederer, Hali**, *Biological Sciences*
Comparisons of Tidepool Fish Assemblages at Isla Natividad, Baja California Sur (BCS): Effects of Tidal Height, Geomorphology, and Other Tidepool Characteristics

**Pacheco Enamorado, Yajenny**, *Mathematics and Statistics*
Pre-service Teachers' Conceptions of Area of a Rectangle

**Bartley, Trevor & Crandall, Adam R.,** *Psychology*
Assessing the Function of the Perirhinal Cortex: Affective Stimulus Processing Across Modalities

**Sparling, Stephen** & **Vang, Nou**, *Psychology*
Assessing the Function of the Perirhinal Cortex: Developing a Perceptual Visual Task

**Immeker, Amanda** & **Camacho, Tiffany**, *Design*
CSUS Tiny Houses: The Nest

## Session 2, noon – 1:30 pm

**Nunes, Seth**, *Chemistry*
Determining Solid State Diffusion Coefficient Kinetics of Metal Cations in Zeolites

**Soehn, Ryan**, *Chemistry*
Dealumination and Metal Atom Planting of Natural Zeolite Mordenite for Catalytic Applications

**Tran, Steven**, *Chemistry*
Photocatalytic Decomposition of Chlorinated Compounds with Zeolite Titanium Silicalite

**Quezada, Alejandra** & **Mejia, Brian C.**, *Biological Science*
Detecting Enzymes Involved with the Production of Catecholamines in Diabetic Chronic Wounds

**Ziba, Anthony**, *Biological Sciences*
Pattern of Herbivory & Predation by Crabs in a Florida Mangrove

**Albright, Sarah**, *Biological Sciences*
Impacts of Water Movement on Fragmentation of Algae in San Francisco Bay

**Johnson, Kathrine**, *Psychology*
The Impact of Atypical Development and Trauma History on Brain Structure in First Episode Psychosis

**Diehl, Cory** & **Miller, Aaron**, *Electrical and Electronic Engineering*
Piezoelectric Power Generation

**Kumar, Sheelta** & **Truong, Catalina**, *Biological Sciences* Analysis of Pre-Sequencing Methodologies for Determining Bacterial Species and Relative Abundance in Gut and Skin Microbiome Communities

**Czar, Roshelle**, *Women Studies*
Religion: Survival of the Fittest

## Session 2, noon – 1:30 pm

**Ornouski, Erika**, *Geography*
Identifying Stable Isotopic Signatures of Atmospheric River Storms Along a Transect of the Sacramento Valley

**Pino, Christina**, *Physics and Astronomy*
Improving the Data Formatter's Data Quality Monitoring Display for the Fast Tracker Trigger at CERN

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## Student Research Center (SRC) Staff

Hanh Tran (SRC Program Coordinator)
Alyssabeth de Jerez (Graduate Student Assistant & Lead Student Research Ambassador)
Bernardo Chavez (Student Research Ambassador & CSU-LSAMP/SEE Liaison)
Michael Pisias (Student Research Ambassador)
Joel Rogers (Student Research Ambassador)

# SACRAMENTO STATE
## STUDENT RESEARCH & CREATIVE ACTIVITIES
# SPRING SYMPOSIUM

The annual Spring Symposium is a campus-wide event to celebrate and recognize the outstanding scholarly accomplishments of Sacramento State students.

- Monday, March 4th, 2019 at the University Union
- Open to all students in all disciplines
- Monetary awards for top student participants and their faculty mentors
- Oral presentations only (no poster presentations)
- Up to ten oral presentations will be selected to represent Sacramento State at the 33rd annual CSU Student Research Competition (April 26-27, 2019 | CSU Fullerton)

For More Information, visit the 2019 Spring Symposium website.

## Important Dates

January 31th, 2019
Registration Opens for the Spring Symposium

February 8th, 2019
Registration Deadline for the Spring Symposium

March 4th, 2019
Sacramento State Student Research Symposium at the University Union

April 26-27th, 2019
33rd Annual CSU Student Research Competition at CSU Fullerton