



CALIFORNIA STATE UNIVERSITY
BAKERSFIELD™

Office of Grants, Research, and
Sponsored Programs

TWENTY-FIFTH ANNUAL
2024 STUDENT
RESEARCH
COMPETITION

FRIDAY, MARCH 1, 2024

8:00 AM - 2:00 PM

Dezember Leadership Center

SCHEDULE OF EVENTS

8:30 — 8:45 am

Welcoming Remarks

Dr. James L. Rodriguez Ph.D.

*Interim Provost and Vice
President for Academic Affairs*

Dr. Isabel Sumaya Ph.D.

*Interim Assoc. V.P. for Grants,
Research,
and Sponsored Programs*

9:00 am

Presentations

Session A

Biological & Agricultural Sciences
Dezember Leadership Center Room 409/411D
9:00 — 12:35 pm

Session B

Behavioral & Social Sciences
Dezember Leadership Center Room 402D
9:00 — 10:15 am

Session C

Physical & Mathematic Sciences
Business Development Center 154B
9:00 — 11:10 am

Session D

Business, Economics, & Public Administration
Business Development Center 156B
9:00 — 11:10 am

Session E

Humanities & Letters
Dezember Leadership Center Room 407D
9:00 — 10:00 am

Session F

Health, Nutrition, & Clinical Services
Business Development Center 165B
9:00 — 9:30 am

Purpose

The SRC is held to promote excellence in undergraduate and graduate scholarly research and creative activity by recognizing outstanding student accomplishments at California State University, Bakersfield.

Competition Guidelines

Students will present their work orally before a jury and audience. Students will compete by discipline and category. Each student will have ten minutes for an oral presentation of their work and three to four minutes to listen and respond to juror and audience questions. All students may use audiovisual material as appropriate, and presenters are encouraged to use delivery techniques that promote interaction with the audience.

Each entry will be judged on the following:

- Clarity of purpose
- Appropriateness of methodology
- Interpretation of results
- Value of the research or creative activity
- Ability of the presenter to articulate the research or creative activity
- Organization of the material presented
- Presenter's ability to handle questions from the jury and general audience

Student Research Presentation Jurors

Mary Bonilla

Lecturer of Public Administration

Mingwei (Max) Liang

Assistant Professor of Finance

Anthony Hinde

Lecturer of Chemistry & Biochemistry

Michele Engel

Lecturer of Biology

Zhongzhe Liu

Associate Professor of Engineering

Gladys Gillam

*Lecturer of Modern Languages &
Literatures*

David Melendez

Assistant Professor of Theatre

Joe Ren

Assistant Professor of Communications

Adeli Ynostroza Ochoa

Assistant Professor of Liberal Studies

Hwaheun Kim

Assistant Professor of Psychology

Leslie Kirstein

Assistant Professor of Nursing

Matthew Herman

Assistant Professor of Geological Sciences

Ashleigh Herrera

Assistant Professor of Social Work

Carl Kloock

Professor and Chair for Department of Biology

Nick Toothman

Assistant Professor of Computer Science

Heidi He

Associate Professor of Nursing

Pratigya Sigdyal

Assistant Professor of Management

Rhonda Dugan

Associate Professor of Management/Marketing

Student Research Presentation Moderators

John Tseh-Han Chen

Assistant Professor of History

Manuel Barrera

Director of Sponsored Programs Development

Isabel Sumaya

Interim Associate VP for GRASP

Natalie Thompson

Lecturer of Anthropology

Jahyun Kim

Assistant Professor of Kinesiology

Ehsan Reihani

*Assistant Professor for Computer and Electrical
Engineering/ Computer Science*

Session A

CSU Bakersfield 2024 Student Research Competition

Biological & Agricultural Sciences

(Dezember Leadership Development Center 409/411D)

Student Presentations

8:50 — 8:55 A.M.	Welcome
9:00 — 9:10 A.M.	Jonathan Juarez
9:15 — 9:25 A.M.	Isaac Owens
9:30 — 9:40 A.M.	Alexandra Brown
9:45 — 9:55 A.M.	Karnig Estenssoro
10:00 — 10:10 A.M.	Break
10:10 — 10:20 A.M.	Sarah Alame
10:25 — 10:35 A.M.	Mason Christian
10:40 — 10:50 A.M.	Julnar Al Azzam
10:55 — 11:05 A.M.	Chase Guide
11:10 A.M. — 11:20 A.M.	Break
11:20 A.M. — 11:30 A.M.	Abigail Sanchez
11:35 A.M. — 11:45 A.M.	Kristyn Delmar

Session A

Biological & Agricultural Sciences

(Dezember Leadership Development Center 409/411D)

Student Presentations

- | | |
|-------------------------|--------------------|
| 11:50 A.M. — 12:00 P.M. | Wefaq Alshami |
| 12:05 P.M. — 12:15 P.M. | Jugraj Randhawa |
| 12:20 P.M. — 12:30 P.M. | Katherine Kirstein |
| 12:35 P.M. | End of Session |

SESSION A

Biological & Agricultural Sciences –

(DezemberLeadershipDevelopmentCenter 409/411D)

9:00 — 9:10 A.M.

Jonathan Juarez (Biology)

*Terrestrial-Aquatic Connections: Invasive *Ailanthus altissima* leaf decomposition in freshwater ecosystems and impacts on macroinvertebrate communities*

Terrestrial-Aquatic Connections: Invasive *Ailanthus altissima* leaf decomposition in freshwater ecosystems and impacts on macroinvertebrate communities

9:15 — 9:25 A.M.

Isaac Owens (Biology)

From Headwaters to the Valley: Investigating the River Continuum Concept in the Arid Environment

We investigated if the River Continuum Concept is applicable to the river systems located in California's arid climate across an elevation gradient.

9:30 — 9:40 A.M.

Alexandra Brown (Biology)

Microplastic seasonal variation in coastal shellfish and sediments linked with estuary protection status and watershed anthropogenic development

Microplastic seasonal variation in coastal shellfish and sediments linked with estuary protection status and watershed anthropogenic development

9:45 — 9:55 A.M.

Karnig Estenssoro (Biology)

Effects of Artificial Light at Night on the Behavior of the San Joaquin Kit Fox

An investigation on the changes in foraging behavior of the San Joaquin kit fox in the presence of artificial light.

10:00 — 10:10 A.M. Break

10:10 — 10:20A.M.

Sarah Alame (Biology)

*The allelopathic effects of bracken fern, *Pteridium aquilinum*, on interspecific interactions*

Bracken fern, *Pteridium aquilinum*, is a successful competitor as it produces various toxic secondary metabolites which may influence interspecific interactions and community dynamics.

10:25— 10:35 A.M.

Mason Christian (Biology)

Cattle Grazing Impacts on Stream Nutrient Patterns at Tejon Ranch Conservancy

Impact of seasonal cattle grazing on stream nutrient concentrations and bank erosion at Tejon Ranch Conservancy.

10:40 — 10:50 A.M.

Julnar Al Azzam (Chemistry & Biochemistry)

Investigation into Enzymatic Sulfur Reduction in Fossil Fuels

Investigation into Enzymatic Sulfur Reduction in Fossil Fuels

10:55 — 11:05 A.M

Chase Gude (Biology)

The effects of microplastics on the symbiotic relationships between mycorrhiza and rhizobia with alfalfa

The effects of microplastics on the symbiotic relationships between mycorrhiza and rhizobia with alfalfa

11:10 — 11:20 A.M. Break

11:20 — 11:30 A.M.

Abigail Sanchez (Agriculture Business)

CSUB's Butterfly Garden

The purpose of developing a Butterfly Garden is to include many California native plant species and provide an ecological value for biodiversity for wildlife.

11:35 — 11:45 A.M.

Kristyn Delmar (Biology)

Investigations on the consistency of unken reflex behavior in Taricha granulosa

Investigations on the consistency of unken reflex behavior in *Taricha granulosa* using low-voltage electric stimulations.

11:50 — 12:00 P.M.

Wefaq Alshami (Biology)

Assessing the influence of The Water-dunk Feeding Mechanism of The Great Blue Heron on the Toxicity Levels of Newts

Great blue herons exhibit a behavior where they dunk newts few times before ingesting them; Therefore, we are investigating its relevance to the newts' toxicity.

12:05 — 12:15 P.M.

Jugraj Randhawa (Biology)

Identification of a potential new oomycete associated with carrot cavity spot

Identification of a potential new oomycete associated with carrot cavity spot

12:20 — 12:30 P.M.

Katherine Kirstein (Biology)

Unken reflex - a new defensive behaviour for Triturus dobrogicus (Kiritzescu, 1903)

Unken reflex - a new defensive behaviour for *Triturus dobrogicus* (Kiritzescu, 1903)

End of Session A

Behavioral and Social Sciences

(Dezember Leadership Development Center 402D)

Student Presentations

8:50 — 8:55 A.M.	Welcome
9:00 — 9:10 A.M.	Stephanie Durra
9:15 — 9:25 A.M.	Ashley Sevier
9:30 — 9:40 A.M.	Ainsley Nommensen
9:45 — 9:55 A.M.	Brookelynn Reed
10:00 — 10:10 A.M.	Kelbi Banducci & Nora Alammari
10:15 A.M.	End of Session

9:00 — 9:10 A.M.

Stephanie Durra (Kinesiology)

Factors Influencing Consistent Exercise Among Older Adults: A Qualitative Study

My study involves semi structured interviews to investigate motivations and barriers to sustained exercise in older adults to enhance strategies for long term health improvement.

9:15 — 9:25 A.M.

Ashley Sevier (Kinesiology)

The Effects of Mental Fatigue on Endurance Performance

We will be looking at the effects of mental fatigue on endurance performance.

9:30 — 9:40 A.M.

Ainsley Nommensen (Kinesiology)

The Effect of Music on Fatigue, Affect, and Recovery in Exercise

The Effect of Music on Fatigue, Affect, and Recovery in Exercise

9:45 — 9:55 A.M.

Brookelynn Reed (Psychology)

Effects of High Fat Diet on Reward Maximization Utilizing a Sequential Patch Depletion Paradigm in Rats

We investigate the effects of a high-fat diet on male rats' reward maximization using a sequential patch depletion paradigm.

10:00 — 10:10 A.M.

Kelbi Banducci & Nora Alammari (Psychology)

Sex differences in adult operant novelty seeking following long access to sucrose during adolescence

The effects of long access (12 hour) sucrose exposure on male and female operant novelty seeking in adulthood as a rodent model of sensation seeking.

End of Session B

Session C

Physical & Mathematical Sciences

(Business Development Center (154B))

Student Presentations

8:50 — 8:55 A.M.	Welcome
9:00— 9:10 A.M.	Lanie Jackson
9:15 — 9:25 A.M.	Kenya Espinoza
9:30 — 9:40 A.M.	Leslie Diaz
9:45 — 9:55 A.M.	Oscar Valle
10:00— 10:10 A.M.	Break
10:10 — 10:20A.M	George Boston
10:25— 10:35 A.M.	Julissa Chavana
10:40 — 10:50 A.M.	Jacob Roper
10:55 — 11:05 A.M.	Mitchell Alvarado
11:10 A.M.	End of Session

9:00— 9:10 A.M.

Lanie Jackson (Chemistry)

Quantification and Characterization of Phthalate Ester Products utilize phthalates to serve as plasticizers, gelling agents, and binders. The extensive use of phthalates in everyday products creates a high risk of exposure for consumers.

9:15 — 9:25 A.M.

Kenya Espinoza (Chemistry & Biochemistry)

Synthesis of Potential Inhibitors for Lysyl oxidase (LOX)

Synthesizing soluble potential inhibitors with good yield and purity for the enzyme known as Lysyl oxidase (LOX) which is associated with cancer metastasis.

9:30 — 9:40 A.M..

Leslie Diaz (Chemistry & Biochemistry)

Synthesis of heterocyclic derivatives of a lysyl oxidase inhibitor

Synthesis of heterocyclic derivatives of a lysyl oxidase inhibitor

9:45 — 9:55 A.M..

Oscar Valle (Engineering)

Computational Modeling of Ultra-Strength Glass Materials

The focus of this research involves simulating reinforced glass (silicone dioxide) with the addition of glass particles by using the AMS software.

10:00— 10:10 A.M. Break

10:10 — 10:20A.M

George Boston (Chemistry & Biochemistry)

Supercritical CO₂ Extraction and Purification of Marrubiin

Supercritical CO₂ Extraction and Purification of Marrubiin

10:25— 10:35 A.M.

Julissa Chavana (Chemistry & Biochemistry)

Degradation of hydroxyzine under solar and ultraviolet light in varying conditions.

Degradation of hydroxyzine under solar and ultraviolet light in varying conditions

10:40 — 10:50 A.M.

Jacob Roper (Chemistry & Biochemistry)

Synthesis and Investigation of Organo-Metallic Redox Mediators for Solar Energy Conversion and Storage

Synthesis and characterization of 4,7-di-[2-bromoethoxy]-1,10-phenanthroline and 4,7-dimethoxy-1,10-phenanthroline cobalt complex are conducted to be used as potential redox mediators in biohybrid dye-sensitized solar energy cells.

10:55 — 11:05 A.M.

Mitchell Alvarado (Mathematics)

Refining Undergraduate Student Self-Assessment Criteria of Successful Proof Writing

This project leverages past research of student self-monitoring and how it may affect students' criteria for successful proof-writing in upper-level mathematics classroom settings.

End of Session C

Session D

CSU Bakersfield 2024 Student Research Competition

Business, Economics, & Public Administration

(Business Development Center 156D)

Student Presentations

9:00 — 9:10 A.M. Erfaneh Varastehjonoush

9:15 — 9:25 A.M. Zachary Federici

9:30 — 9:40 A.M. Jonathan Bong & Norma Federici

9:45 — 9:55 A.M. America Hernandez, Ana
Cabrera Ortiz, & Janelle Ortega

10:00 — 10:10 A.M. Break

10:10 — 10:20 A.M. Sonia Gomez

10:25 — 10:35 A.M. Michael Romero

10:40 — 10:50 A.M. Break

10:55 — 11:05 A.M. Justin Lo

11:10 A.M. End of Session

SESSION D

Business, Economics, & Public Administration

(Business Development Center 156 B)

9:10 — 9:10 A.M.

Erfaneh Varastehjonoush (*Public Administration*)

Challenges of Assisted Living Organizations

Challenges of Assisted Living Organizations: Assessing Healthcare Policies Impact on Assisted Living Quality: A Qualitative Case Study Approach.

9:15 — 9:25 A.M.

Zachary Federici (*Management & Marketing*)

CEO Regulatory Focus and Firm Performance: A Meta-Analysis

This review conducts a meta-analysis to investigate the relationship between the regulatory focus of Chief Executive Officers (CEOs) and firm performance metrics such as market-to-book ratio and Return on Assets (ROA).

9:30 — 9:40 A.M.

Jonathan Bong & Norma Federici (*Management & Marketing*)

Leader Workaholism and Withdrawal Behaviors among Working Students: The Mediating Role of Exhaustion and the Moderating Effect of Full-time Job Status

This study investigates the impact of leader workaholism on work and school withdrawal among working students, focusing on the mediating role of exhaustion and the moderating effect of full-time job status. Data from 149 working students provided support for the hypotheses.

9:45 — 9:55 A.M.

America Hernandez, Ana Cabrera Ortiz & Janelle Ortega (*Management & Marketing*)

Leader Workaholism and Employee Turnover: The Mediating Effects of Challenge and Hindrance Appraisals and the Moderating Role of Menstrual Difficulties

This study examined the impact of leader workaholism on organizational turnover intentions, focusing on the roles of challenge and hindrance appraisals and the moderating effect of menstrual difficulties.

10:00 — 10:10 A.M. Break

10:10 – 10:20 A.M.

Sonia Gomez (Economics)

A Proposal to Estimate Marginal Propensity to Consume Based on Responses to Questions about the 2001 Tax Rebate

Re Estimating Marginal Propensity to Consume based on the 2001 Tax Rebate

10:25– 10:35 A.M.

Michael Romero (Business Administration)

"AI Revolution: Unleashing the Power of Sentiment-Driven Trading Strategies"

Leveraging AI for real-time sentiment analysis to enhance market predictions, inform investment strategies, and prevent financial crises.

10:40 – 10:50 A.M. Break

10:40 – 10:50 A.M.

Justin Lo (Biology)

Retroactive Study of Water Allocation After the COVID-19 Epidemic

Comparative and trend analysis of CSUB's water allocation using SARIMA, as well as implications of nonsignificant similarity towards landscaping water allocation on campus after COVID-19.

End of Session D

Session E

CSU Bakersfield 2024 Student Research Competition

Humanities & Letters

(Dezember Leadership Center 407D)

Student Presentations

8:50 — 8:55 A.M. Welcome

9:00— 9:10 A.M. Jessica Price

9:15 — 9:25 A.M. Carmen Tomshack

9:30 — 9:40 A.M. Gabriel Moore

9:45 — 9:55 A.M. Karina Hurtado

10:00 A.M. End of Session

9:00— 9:10 A.M.

Jessica Price (*Religious Studies*)

Veiled Threats: Human Rights and Russian Criminalization of Dagestani Women

This paper explores how Dagestani women employ religion as a means of resistance to Russia's shifting policies only to be labeled and treated as extremists.

9:15 — 9:25 A.M.

Carmen Tomshack (*Religious Studies*)

Narayana's New Braj: An Ethnography of the Western Gaudiya Vaishnava Experience of Charismatic Leadership in the Hare Krishna Movement

Exploration of Max Weber's "routinization of charisma" within a transplanted Hindu tradition, and academic response to Irvin Collins's research on this same tradition's post-charismatic phase.

9:30 — 9:40 A.M.

Gabriel Moore (*History*)

Kern County's Chinese Question: Discrimination and Racial Violence in Local History, 1854-1901

This research provides an in-depth view into the unfortunate history of anti-Chinese discrimination within a local community, and how it has been remembered.

9:45 — 9:55 A.M.

Karina Hurtado (*Spanish*)

Terms of address in the linguistic escape of San Jose, Costa Rica

During a trip to Costa Rica in May 2024 we will collect data for a sociolinguistic research study.

Session F

CSU Bakersfield 2024 Student Research Competition

Health, Nutrition, & Clinical Services

(Business Development Center 165B)

Student Presentations

9:00 — 9:10 A.M. Money Ghimire

9:15 — 9:25 A.M. Jesse Okoli

9:30 A.M. End of Sessions

SESSION F

Health, Nutrition, & Clinical Services

(Business Development Center 165B)

9:00 — 9:10 A.M.

Money Ghimire (Kinesiology)

Chronic creatine supplementation improves strength but not arterial stiffness: a case study

Chronic creatine supplementation improves strength but not arterial stiffness: a case study.

9:15 — 9:25 A.M.

Jesse Okoli (Kinesiology)

Remote Ischemic Preconditioning Effects on Muscular Strength and Endurance in Healthy Adults

Remote Ischemic Preconditioning Effects on Muscular Strength and Endurance in Healthy Adults.

End of Session F

A SPECIAL THANKS

Students - Faculty Mentors

Ashley Sevier	Zachary Zenko
Ainsley Nommensen	Zachary Zenko
Stephanie Durra	Zachary Zenko
Brookelynn Reed	Amy Gancarz-Kausch
Kelbi Banducci	Amy Gancarz-Kausch
Nora Alamdari	Amy Gancarz-Kausch
Jugraj Randhawa	Isolde Francis
Wefaq Alshami	Amber Stokes
Jonathan Juarez	Rae McNeish
Isaac Owens	Rae McNeish
Alexandra Brown	Rae McNeish
Lanie Jackson	Lance Talbert
Julnar Al Azzam	Karlo Lopez
Kristyn Delamar	Amber Stokes
Abigail Sanchez	Antje Lauer
Chase Gude	Kane Keller
Karnig Estenssoro	Lucas Hall
Mason Christian	Rae McNeish
Sarah Alame	Kane Keller
Jonathan Bong	Sunjin Pak
Norma Federici	Sunjin Pak
Erfaneh Varastehjonoush	Anthony Pallitto

Students - Faculty Mentors

America Hernandez	Sunjin Pak
Janelle Ortega	Sunjin Pak
Ana Cabrera Ortiz	Sunjin Pak
Zachary Federici	Sunjin Pak
Sonia Gomez	Richard Ryan
Michael Romero	Jeremy Woods
Money Ghimire	Jahyun Kim
Jesse Okoli	Jahyun Kim
Jessica Price	Joseph Florez
Carmen Tomshack	Jonathan Young
Gabriel Moore	John Chen
Karina Hurtado	Maryann Parada
George Boston	Roy LaFever
Julissa Chavana	Hanoz Santoke
Kenya Espinoza	Danielle Solano
Leslie Diaz	Danielle Solano
Jacob Roper	Jesse Bergkamp
Mitchell Alvarado	Aubrey Kemp
Oscar Valle	Sungwook Hong
Justin Lo	Antje Lauer
Katherine Kirstein	Amber Stokes

Special thanks to:

The
**PRESIDENT'S
ASSOCIATES**

California State University, Bakersfield

Thank You

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Office, & The Office of Grants, Research, and Sponsored
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