2023 UCLA NATIONAL McNAIR CONFERENCE

MONDAY, JULY 31 - WEDNESDAY, AUGUST 2

UCLA McNAIR 20 YEARS

A forum for McNair Scholars to present their research, prepare for graduate school, and connect with each other

PROGRAM

For more information, please visit:
mcnair.aap.ucla.edu

BROUGHT TO YOU BY:

UCLA Undergraduate Education
Academic Advancement Program

TRiO UCLA Graduate Division

WELCOME

2023 UCLA NATIONAL McNAIR CONFERENCE

On behalf of the UCLA McNair Research Scholars Program, the Academic Advancement Program, and Graduate Division, welcome to the 2023 UCLA National McNair Conference. As UCLA celebrates 20 years of the Ronald E. McNair Research Scholars Program being on campus, we are honored to host over 400 McNair Scholars and staff from across the country representing over 50 institutions attending the Conference this year. This is our sixth year hosting the UCLA National McNair Conference.

Scholars, you will have the opportunity to present your research, network with graduate school recruiters, learn about various funding opportunities, including the NSF Graduate Research Fellowship Program, and connect with fellow McNair scholars from all across the country over the next few days. Program directors and staff, we are honored by your presence and grateful you have chosen to join us. We hope that you too can connect with your colleagues at other institutions, expand your network, and exchange ideas while supporting all the scholars in attendance. To our faculty, panelists, recruiters, and workshop presenters, we greatly appreciate your participation and contributions to this conference. Your presence and interest in these young scholars as they prepare for graduate school are invaluable.

There are representatives from over 40 different graduate schools and programs here at our Graduate School Fair waiting to connect with you. We hope that you can explore and chat with all of the recruiters. Please enjoy the conference, our beautiful UCLA campus, and the greater Los Angeles area!

UCLA McNAIR 20 YEARS

ABOUT McNAIR

DR. RONALD E. McNAIR

Dr. Ronald E. McNair was the second African American astronaut to join NASA. He was born to a family in racially segregated South Carolina and had an affinity for science and space early on in his childhood. He overcame many structural barriers to pursue his love of learning, major in Physics, and graduate magna cum laude from North Carolina A&T State University, Greensboro. Afterwards, he attended M.I.T. to attain his Ph.D. in Physics by the age of 26.

Dr. McNair was nationally recognized for his work in the field of laser physics. In addition, he received three honorary doctorates, a score of fellowships and commendations, a black belt in karate, and a reputation as an accomplished saxophonist. Dr. McNair flew his first mission as an astronaut in 1984 and was aboard the Challenger space shuttle that exploded on lift-off in January 1986. He died tragically at the age of 35.

The federal programs that carry his name seek to equip students with knowledge, courage, and an unshakable will to succeed. The program encourages first-generation, low-income, and historically underrepresented students to pursue post-baccalaureate studies specifically leading to doctoral degrees.

McNAIR RESEARCH SCHOLARS PROGRAM

Through a grant competition, funds are awarded to institutions of higher education to prepare eligible participants for doctoral studies through involvement in research and other scholarly activities. Participants are first-generation and low-income students and students historically underrepresented in graduate school who have demonstrated interest in and academic potential for doctoral programs. Institutions work closely with participants as they complete their undergraduate requirements. Institutions encourage participants to enroll in graduate programs and then track their progress through to the successful completion of advanced degrees. The goal is to increase the attainment of Ph.D. degrees by students from historically marginalized backgrounds.

All McNair projects must provide the following activities: opportunities for research or other scholarly activities; summer internships; seminars and other educational activities designed to prepare students for doctoral study; tutoring; academic counseling; and activities designed to assist students participating in the project in securing admission to and financial assistance for enrollment in graduate programs. McNair projects may also provide the following additional activities: education or counseling services designed to improve financial and economic literacy of students; mentoring programs involving faculty members at institutions of higher education or students, or any combination of such persons; and exposure to cultural events and academic programs not usually available to historically underrepresented students.

TRiO

RONALD E. McNAIR
POST-BACCALAUREATE
ACHIEVEMENT PROGRAM

WELCOME LETTER
DEAN OF UNDERGRADUATE EDUCATION

UNIVERSITY OF CALIFORNIA, LOS ANGELES

UCLA

BERKELEY • DAVIS • IRVINE • LOS ANGELES • MERCED • RIVERSIDE • SAN DIEGO • SAN FRANCISCO

SANTA BARBARA • SANTA CRUZ

ADRIANA GALVÁN
DEAN OF UNDERGRADUATE EDUCATION
(310) 206-3961
AGALVAN@COLLEGE.UCLA.EDU

COLLEGE OF LETTERS & SCIENCE
OFFICE OF THE DEANS
2300 MURPHY HALL
410 CHARLES E. YOUNG DR. E
LOS ANGELES, CA 90095-1438

July 10, 2023

Dear McNair Scholars:

The UCLA Division of Undergraduate Education extends a warm welcome to all of you attending and supporting the 2023 UCLA National McNair Conference. We are honored to host you at UCLA for the sixth time!

From its inception 20 years ago the McNair National Scholars Program has been an incubator of innovation, scholarship and mentorship that supports outstanding students from an array of disciplines. McNair Conferences have historically allowed scholars to hold space together to engage in ideas, share research findings and build community. Throughout the conference I encourage you to ask questions, seek answers, and enjoy lively discourse with the 450+ McNair community members from around the country who are in attendance.

I also extend my gratitude to the students, mentors and alumni who are at the heart of the McNair Program. I commend your commitment to research as a means to achieve social justice and look forward to learning more about the new knowledge you have created.

Thank you for joining us at UCLA. I wish you a great conference!

Sincerely,

Adriana Galván, PhD
Dean, Division of Undergraduate Education
Professor, Department of Psychology
University of California, Los Angeles

WELCOME LETTER CONGRESS OF THE UNITED STATES

TED W. LIEU
36TH DISTRICT, CALIFORNIA

COMMITTEE ON THE JUDICIARY

COMMITTEE ON FOREIGN AFFAIRS

COMMITTEE ON SCIENCE, SPACE, & TECHNOLOGY

Congress of the United States
House of Representatives
Washington, DC 20515-0536

2454 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-3976

1645 CORINTH AVENUE, SUITE 101
LOS ANGELES, CA 90025
(323) 651-1040

1600 ROSECRANS AVENUE, 4TH FLOOR
MANHATTAN BEACH, CA 90266
(310) 321-7664

July 31, 2023

Dear Friends,

It is my honor and privilege to welcome you to the 2023 National McNair Conference at the University of California, Los Angeles (UCLA).

This federal TRIO program, inspired by the work of the late Dr. Ronald E. McNair, provides an opportunity for undergraduate students to prepare themselves for doctoral studies through rigorous training and involvement in research and other scholarly activities. The program was created with a goal of motivating and supporting students from disadvantaged backgrounds through an academic pipeline from primary to higher education. The McNair Research Scholars program would not be possible without the dedication and leadership of student scholars as they participate in this rigorous research program.

This conference provides the opportunity for students to experience a professional research event and bolster their research before an interdisciplinary community. The McNair program remains a true asset to the 36th Congressional District of California as well as to our nation.

Congratulations to all those participating and my best wishes for a successful conference.

Sincerely,

Ted W. Lieu

Ted W. Lieu
Member of Congress

WELCOME REMARKS

CHARLES J. ALEXANDER, PH.D.
Associate Vice Provost for Student Diversity
Director, Academic Advancement Program

A pioneer of pipeline programs designed to increase diversity in the health professions Charles J. Alexander, Ph.D., currently serves as the Associate Vice Provost for Student Diversity and Director of the Academic Advancement Program at the University of California, Los Angeles (UCLA). He provides full-time executive and intellectual leadership for a collection of programs designed for nearly 5,000 undergraduates from diverse populations, who have been historically underserved by higher education; these include students from low-income families, first-generation college students, and students from historically underrepresented groups. In addition to his role as Associate Vice Provost, he is an Adjunct Associate Professor in the School of Dentistry's Division of Public Health and Community Dentistry.

He has been a consultant and peer reviewer for federal agencies, foundations, universities, and scholarly journals; published in the area of non-cognitive factors in the selection and admissions process, workforce diversity in the health professions, and health profession pipeline programs. He recently contributed to the 2020 Surgeon General's Report on Oral Health. He has also been a faculty member and guest lecturer at a number of universities and colleges, as well as a presenter at national and international conferences. He was the past Chair of the Robert Wood Johnson Foundation's Dental Pipeline Project II Advisory Committee, and a past President of the National Association of Medical Minority Educators (NAMME). In February of 2013, the Governor of the State of California appointed him to the Medical Board of California, Physician Assistant Board for a four-year term, which was recently renewed in August of 2020.

He has received numerous awards and honors including the Martin Luther King, Jr award from the University of California, San Francisco, the Dr. Joseph J. Krahewski Award from the Northern California Section of the American College of Dentists, a Presidential Citation from the American Dental Education Association (ADEA) for his significant contributions to dental education, a Distinguished Alumnus of the Year award by the College of Education at Marquette University, the Champions of Health Professions Diversity Award from The California Wellness Foundation, and commendations and citations from the California Society of Pediatric Dentistry, California State Legislators, and the Governors of California, Kentucky and Wisconsin.

Dr. Alexander received his Bachelors of Arts (B.A.) degree in Sociology from the State University of New York (SUNY), College at Cortland; a Masters of Arts (M.A.) degree in Sociology from the University of Nebraska at Omaha, and; a Doctorate (Ph.D.) in the Sociological Foundations of Education from Marquette University in Milwaukee, Wisconsin. He has also studied at The Ohio State University in Columbus, Ohio.

MARISSA LÓPEZ, PH.D.
Associate Dean, UCLA Division of Graduate Education
Professor, UCLA Department of English
Professor, UCLA Department of Chicana/o Studies

Dr. López is Associate Graduate Dean for Diversity, Inclusion, and Admissions as well as Professor of English and Chicana/o and Central American Studies at UCLA. She earned both her BA and her PhD from UC Berkeley. As Associate Dean, Dr. López is a key part of UCLA's graduate education leadership team, developing university policy and advocating for graduate students across campus. As a professor, Dr. López researches Chicanx literature from the 19th century to the present with an emphasis on 19th century Mexican California. She has written two books: Chicano Nations (NYU 2011) is about nationalism and Chicanx literature from the early-1800s to post-9/11; Racial Immanence (NYU 2019) explores uses of the body and affect in more contemporary Chicanx cultural production. Dr. López has published articles in literary studies' leading journals and is the recipient of grants from the National Endowment for the Humanities, the American Council of Learned Societies, and the Institute for Citizens and Scholars. She recently completed a year-long residency at the Los Angeles Public Library where she worked to collaboratively develop a mobile app, "Picturing Mexican America," that uses geodata to display images of Mexican California relevant to a user's location (@picturingmexicanamerica on Instagram). A prominent scholar as well as a national leader in her field, Dr. López is past Vice President of the Latina/o Studies Association and past chair of the Modern Language Association's prize committee for the best book in Chicana/o and Latina/o Literary and Cultural Studies. She is also past chair of both the MLA's Executive Committee on Chicana/o Literature and its Committee on the Literature of People of Color of the US and Canada. At UCLA Dr. López is past Director of UCLA's Chicano Studies Research Center, past chair of UCLA's Committee on Diversity and Equal Opportunity, and a proud, longstanding member of the Faculty Advisory Committee for UCLA's Academic Advancement Program, which houses the McNair Research Scholars program.

KEYNOTE SPEAKER

KEYNOTE SPEAKER

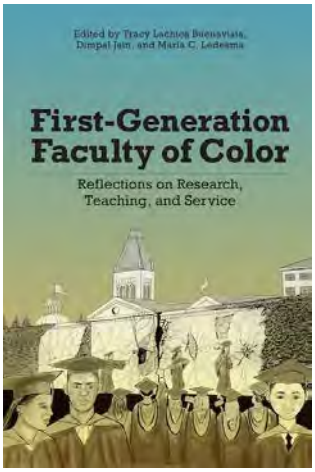
CELIA LACAYO, PH.D.
Assistant Director,
UCLA Chicana/o Studies Research Center

Celia Lacayo earned her PhD in Ethnic Studies at UC Berkeley. She is the UCLA Assistant Director of the Chicana/o Studies Research Center. In her administrative capacities she collaborates with leaders at CSRC and LPPI specifically with the Latina Futures Lab 2050 and campus-wide HSI initiatives. Celia is working towards institutionalizing support for youth participatory action research at the UC, and helping coordinate a network of junior scholars from low-income BIPOC communities who are collaborating with grassroots youth organizing groups across California.

She is the former UCLA Associate Director of Community Engagement for the Social Science Division, where she was the associate editor and contributor to LA Social Science. She also teaches in the Chicana/o & Central American Studies and African American Studies Department.

Her research and teaching expertise include Race, Ethnicity, and Immigration. Her article "Perpetual Inferiority: Whites' Racial Ideology toward Latinos," in the Sociology of Race & Ethnicity journal interrogates how external racial ascription affects the racial group formation process for Latinos. It won the Distinguished Contribution to Research Article award by the American Sociological Association Latino/s Section. Moreover, her article "Latinos Need to Stay in Their Place: Differential Segregation in a Multi-Ethnic Suburb" garnered attention. This article, which contributed to the literature on Latino segregation, was featured in The Guardian, OC Weekly, CityLab Latino, and ImmigrationProf Blog. Celia is constantly sought by Spanish and English media to discuss her research. Her participation in the PBS Documentary, "187: The Rise of the Latino Vote" (2020) heavily relied on her research contributions. Her next research projects include Latinx racial socialization and political behavior as well as examining Afro-Latinx experience and relations between African Americans and Latinos.

KEYNOTE PANEL



FIRST-GENERATION FACULTY OF COLOR
BOOK TALK
TUESDAY, AUGUST 1
12:00 - 1:30 PM PDT

TRACY BUENAVISTA, PH.D.
Professor, Asian American Studies and Educational Leadership and Policy Studies
California State University, Northridge

Tracy Lachica Buenavista (she/her/isuna) is Professor of Asian American Studies and a core faculty member of the Doctoral Program in Educational Leadership at California State University, Northridge (CSUN). She is the co-principal investigator and co-founder of the CSUN DREAM Center, Asian American Studies Pathways Project, Ethnic Studies Education Pathways Project, and the Faculty of Color Wellness Collective; and serves as a member of the Project Rebound Community Advisory Committee. In her research she utilizes critical race theory to examine how race, (im)migration, militarism, and carcerality shape the educational access, retention, and experiences of People of Color. She is co-editor of the books First-Generation Faculty of Color Narratives: Reflections on Research, Teaching, and Service (Rutgers, 2022), Education at War: The Fight for Students of Color in America's Public Schools (Fordham, 2018), "White" Washing American Education: The New Culture Wars in Ethnic Studies (Praeger, 2016), and Navigating the Great Recession: Immigrant Families' Stories of Resilience (Kendall-Hunt, 2011). Dr. Buenavista earned a Ph.D. and M.A. in Education at University of California, Los Angeles, M.A. in Asian American Studies at San Francisco State University, and a B.A. in Integrative Biology and minor in Ethnic Studies at University of California, Berkeley.

DIMPAL JAIN, PH.D.
Professor, Educational Leadership and Policy Studies California State University, Northridge

Dr. Dimpal Jain (she/her/hers) is a Professor of Educational Leadership and Policy Studies and core faculty within the Doctoral Program in Educational Leadership at California State University, Northridge (CSUN). She received her Masters and Ph.D. in Higher Education and Organizational Change at the University of California, Los Angeles and her B.A. in History along with minors in English, Spanish, and Art History from Western Washington University. Her work centers on the relationship between community colleges and universities through a critical race framework, most notably how universities can develop and maintain a transfer receptive culture for students of color. She is the co-principal investigator for the National Science Foundation funded grant STEM Training and Research Training (START) Planning Project that enhances the quality of first-year experiences among incoming STEM transfer students at CSUN. She has co-authored the book Power to the Transfer: Critical Race Theory and a Transfer Receptive Culture (Michigan State University, 2020) and co-edited First-Generation Faculty of Color Narratives: Reflections on Research, Teaching, and Service (Rutgers, 2022). Dr. Jain is the daughter of South Asian immigrants and the first in her family to earn a Ph.D.. She is proud of her family title of "Book Doctor."

MARÍA C. LEDESMA, PH.D.
Chair and Professor, Educational Leadership
San José State University

María C. Ledesma (she/her/ella) is a first-generation Professor of Educational Leadership and founding Director of the Higher Education Leadership Master's Program at San José State University, where she is also Department Chair. As a critical race scholar, Dr. Ledesma's research broadly examines the sociology of race-conscious policy in higher education, including contextualizing and historicizing the history and application of race-conscious affirmative action in university admissions. She also studies the experiences of faculty of color who identify as first-generation. Her work has appeared in the Association of Mexican American Educators Journal, Equity and Excellence in Education, Review of Higher Education, and Qualitative Inquiry. She is the co-editor of the books First-Generation Faculty of Color Narratives: Reflections on Research, Teaching, and Service (Rutgers, 2022) and Critical Race Theory and Qualitative Methods, Routledge (forthcoming). Dr. Ledesma earned her Ph.D. in Education at UCLA, and an M.Ed. in Administration, Planning, and Social Policy from Harvard's Graduate School of Education. Dr. Ledesma received her B.A. in English with an Ethnic Studies Minor from UC Berkeley.

GRADUATE WORKSHOPS

GRADUATE WORKSHOPS

FINANCING YOUR GRADUATE EDUCATION

Tuesday, August 1st | 9:30 - 10:30 AM PDT

Ross Fenimore, Ph.D.
Senior Fellowships Officer, Office of Fellowships and Financial Services, UCLA Graduate Division

Before you say yes to that student loan, attend this session to find out other ways to finance your graduate education. From fellowships to grants and everything in between, learn how to seek out funding opportunities to support your graduate education. This session will focus on the resources available to finance your graduate education. Special emphasis will be placed on campus-based and external fellowship support available as students advance in their graduate programs. Included in this workshop are ways in which students can effectively negotiate their financial awards and options available at the application stage of the graduate experience.

UCLA Graduate Division

NATIONAL SCIENCE FOUNDATION

Graduate Research Fellowship Program
Tuesday, August 1st | 2:45 - 3:45 PM PDT

Wren Aye
Outreach and Communications Specialist

Jerry Gebremeskel
Program Analyst

Please join the National Science Foundations Operations Center for the Graduate Research Fellowship Program to learn more about this six-figure funding opportunity.

NSF

SPONSORS

SPONSORS | LOCATION: PRE-FUNCTION AREA

UNIVERSITY OR ORGANIZATION NAME	DEPARTMENT OR PROGRAM
Columbia University	School of Social Work
Educational Testing Service (ETS)	Graduate Record Exam (GRE)
Johns Hopkins University	Whiting School of Engineering
Oregon State University	Graduate School
University of California Los Angeles	Division of Graduate Education
University of California Merced	Graduate Division
University of North Texas Health Science Center	Admissions & Recruitment
University of Pittsburgh	School of Education
University of Rochester	Arts, Science and Engineering Office of Graduate Education
University of St. Augustine for Health Sciences	Enrollment Office

GRADUATE SCHOOL FAIR

RECRUITERS | LOCATION: CENTENNIAL BALLROOM

UNIVERSITY OR ORGANIZATION NAME	DEPARTMENT OR PROGRAM
Arizona State University	College of Health Solutions
Baylor College of Medicine	Graduate School of Biomedical Sciences
Boston College	Graduate School of Arts & Sciences
California Health Science University	Admissions
Columbia Climate School	Graduate Admissions
Emory University	Laney Graduate School
Johns Hopkins University	Krieger School of Arts and Sciences
NYU Robert F Wagner	School of Public Service
National GEM Consortium	GEM Fellowship
New York University	Tandon School of Engineering Graduate Enrollment Management & Admissions
North Carolina A&T State University	The Graduate College
Rutgers University	School of Public Health
SUNY University at Albany	The Graduate School
Southern Methodist University	Lyle School of Engineering
Stanford University	School of Humanities and Sciences
Stony Brook University	Department of Economics
Tulane School of Public Health & Tropical Medicine	Enrollment Management and Admissions
University of Arizona	Graduate College
University of California Davis	Graduate Studies
University of California Los Angeles	Anderson School of Management, Master of Financial Engineering (MFE) Program
University of California Los Angeles	Luskin School of Public Affairs
University of California San Diego	Division of Graduate Education
University of Chicago	UChicagoGRAD
University of Colorado Boulder	Office of Admissions
University of North Texas	Graduate Admissions
University of Notre Dame	The Graduate School Admissions and Recruitment
University of Southern California	Leonard Davis School of Gerontology
University of Southern California	Rossier School of Education
University of Utah	Graduate School Diversity Office

UCLA McNAIR CONFERENCE

DAY 1 SCHEDULE
MONDAY, JULY 31

Unless otherwise noted, all conference programming will take place at the **UCLA Meyer & Renee Luskin Conference Center**, 425 Westwood Plaza, (855) 522-8252.

Please consult the venue maps (pages 16-18) for specific session locations.

TIME	SCHEDULE	LOCATION
9:00 am – 4:00 pm	**Registration and Check-In**	1st Floor: Luskin Entry Courtyard
9:30 am	Bus loads for **California Institute of Technology campus visit**	Bus Loading Zone (in front of Luskin Conference Center)
10:00 am	Bus loads for **University of Southern California campus visit**	Bus Loading Zone (in front of Luskin Conference Center)
11:00 am – 4:00 pm	**University of Southern California campus visit**	University of Southern California
	California Institute of Technology campus visit	California Institute of Technology
1:00 pm – 3:00 pm	**UCLA Campus Tour**	Meet in front of Luskin Conference Center
4:30 pm – 6:00 pm	**Welcome Reception** Dr. Charles J. Alexander *Associate Vice Provost for Student Diversity* *Director, Academic Advancement Program* Dr. Marissa López *Associate Dean, UCLA Division of Graduate Education* *Professor, UCLA Department of English* *Professor, UCLA Department of Chicana/o Studies*	1st Floor: Centennial Ballroom

UCLA McNAIR 20 YEARS

** Scan to view full program and presentation abstracts at mcnair.aap.ucla.edu.*

** For conference WIFI connect to "Luskin_Meeting" with password "LCC2023"*

DAY 2 SCHEDULE
TUESDAY, AUGUST 1

UCLA McNAIR CONFERENCE

Please consult the venue maps (pages 16-18) for specific session locations.

TIME	SCHEDULE	LOCATION
8:00 am – 12:00 pm	**Registration and Check-In**	1st Floor: Prefunction Area (in front of Centennial Ballroom)
8:00 am – 9:15 am	**Keynote and Breakfast** Dr. Celia Lacayo Assistant Director, UCLA Chicana/o Studies Research Center	1st Floor: Centennial Ballroom
9:30 am – 10:30 am	**Breakout Session I** Oral Presentations	*[Floor: Room (Panel)]* 1st Floor: Pinnacle (I-A), Odyssey (I-A), Pathways (I-A), Innovation (I-A) 2nd Floor: Discovery (I-A), Catalyst (I-K)
9:30 am – 10:30 am	**Financing Your Graduate Education Workshop** Dr. Ross Fenimore Senior Fellowships Officer, Office of Fellowships and Financial Services, UCLA Division of Graduate Education	1st Floor: Centennial Ballroom
10:00 am – 2:00 pm	**Graduate Opportunities Fair - Sponsors Showcase** Recruiters representing universities & programs	1st Floor: Prefunction Area (in front of Centennial Ballroom)
10:45 am – 11:45 am	**Breakout Session II** Oral Presentations Poster Session 1	*[Floor: Room (Panel)]* 1st Floor: Pinnacle (II-B), Odyssey (II-B), Pathways (II-B), Innovation (II-B) 2nd Floor: Discovery (II-B), Catalyst (II-I) 2nd Floor: Optimist
12:00 pm – 1:30 pm	**Keynote Panel and Lunch** *First-Generation Faculty of Color* Book Talk Dr. Tracy Lachica Buenavista, Dr. Dimpal Jain, Dr. María C. Ledesma	1st Floor: Centennial Ballroom
1:30 pm – 2:30 pm	**Breakout Session III** Oral Presentations Poster Session 2	*[Floor: Room (Panel)]* 1st Floor: Pinnacle (III-C), Odyssey (III-C), Pathways (III-C), Innovation (III-C) 2nd Floor: Discovery (III-C), Catalyst (III-J) 2nd Floor: Optimist
2:45 pm – 3:45 pm	**NSF Graduate Research Fellowship Program** Wren Aye Outreach and Communications Specialist Jerry Gebremeskel Program Analyst	1st Floor: Centennial Ballroom
2:45 pm – 3:45 pm	**Breakout Session IV** Oral Presentations	*[Floor: Room (Panel)]* 1st Floor: Pinnacle (IV-D), Odyssey (IV-A), Pathways (IV-A), Innovation (IV-B) 2nd Floor: Discovery (IV-C), Catalyst (IV-E)
4:00 pm – 5:00 pm	**Breakout Session V** Oral Presentations Poster Session 3	*[Floor: Room (Panel)]* 1st Floor: Pinnacle (V-E), Odyssey (V-D), Pathways (V-D), Innovation (V-A) 2nd Floor: Discovery (V-A), Catalyst (V-A) 2nd Floor: Optimist
5:00 pm – 6:30 pm	**UCLA Sunset Campus Tour**	1st Floor: Front of Luskin Conference Center

** Scan to view full program and presentation abstracts at mcnair.aap.ucla.edu.*

** Break refreshments will be available throughout the day at various "Snack Bar" locations, see venue maps.*

UCLA McNAIR CONFERENCE

DAY 3 SCHEDULE
WEDNESDAY, AUGUST 2

Please consult the venue maps (pages 16-18) for specific session locations.

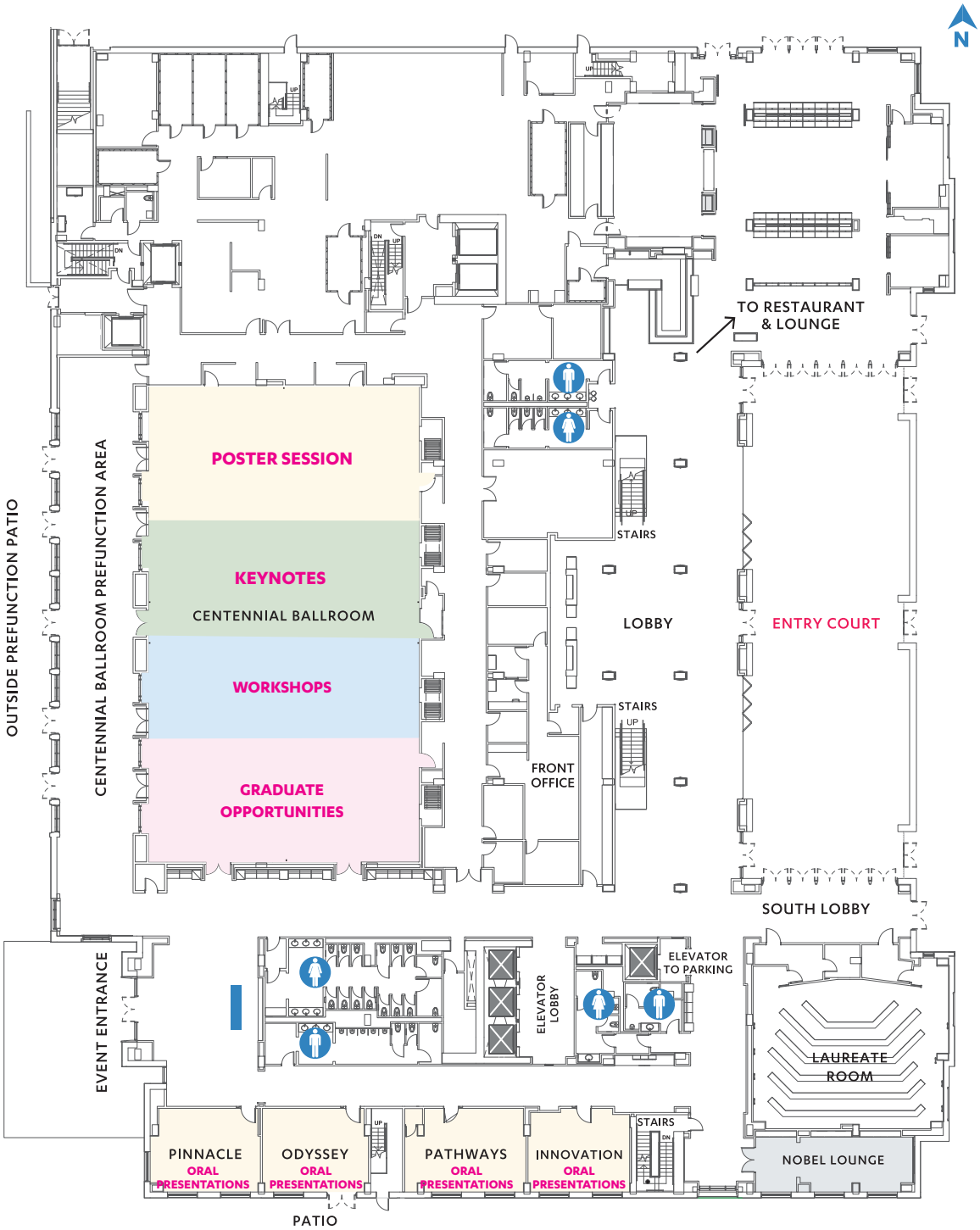
TIME	SCHEDULE	LOCATION
8:00 am – 9:00 am	**Networking Breakfast** Network with Conference Sponsors and Recruiters	3rd floor: Centennial Terrace
9:00 am – 10:00 am	**Breakout Session VI** Oral Presentations	*[Floor: Room (Panel)]* 1st Floor: Pinnacle (VI-E), Odyssey (VI-B), Pathways (VI-B), Innovation (VI-B) 2nd Floor: Discovery (VI-C), Optimist A (VI-B), Optimist B (VI-E)
10:00 am – 2:00 pm	**Graduate Opportunities Fair** Recruiters representing universities & programs Sponsor Showcase	1st Floor: Prefunction Area, Centennial Ballroom
10:15 am – 11:15 am	**Breakout Session VII** Oral Presentations Poster Session 4	*[Floor: Room (Panel)]* 1st Floor: Pinnacle (VII-F), Odyssey (VII-F), Pathways (VII-C), Innovation (VII-C) 2nd Floor: Discovery (VII-D), Optimist A (VII-C), Optimist B (VII-F) 1st Floor: Centennial Ballroom
11:30 am – 1:30 pm	**Lunch** Graduate Fair	ASUCLA Campus Restaurants asucla.ucla.edu/locations
1:30 pm – 2:30 pm	**Breakout Session VIII** Oral Presentations Poster Session 5	*[Floor: Room (Panel)]* 1st Floor: Pinnacle (VIII-A), Odyssey (VIII-A), Pathways (VIII-A), Innovation (VIII-A) 2nd Floor: Discovery (VIII-A), Optimist A (VIII-D), Optimist B (VIII-G) 1st Floor: Centennial Ballroom
2:45 pm – 3:45 pm	**Breakout Session IX** Oral Presentations	*[Floor: Room (Panel)]* 1st Floor: Pinnacle (IX-B), Odyssey (IX-B), Pathways (IX-B), Innovation (IX-B) 2nd Floor: Discovery (IX-B), Optimist A (IX-A), Optimist B (IX-H)
3:45 pm – 4:00 pm	**Conference Closing** Dr. Alice Ho Director, McNair Research Scholars Program Director, Research, Assessment and Evaluation Academic Advancement Program	1st Floor: Centennial Ballroom
5:00 – 5:15 pm	Bus loads for **Cultural Activity** *Check-in and pick up boxed dinner* *Bus boarding*	Bus Loading Zone (in front of Luskin Conference Center)
7:00 pm – 11:59 pm	**Cultural Activity** - *Sold out*	Griffith Observatory, Hollywood, CA Report to Bus Pick-Up Zone at 10:30pm

UCLA McNAIR 20 YEARS

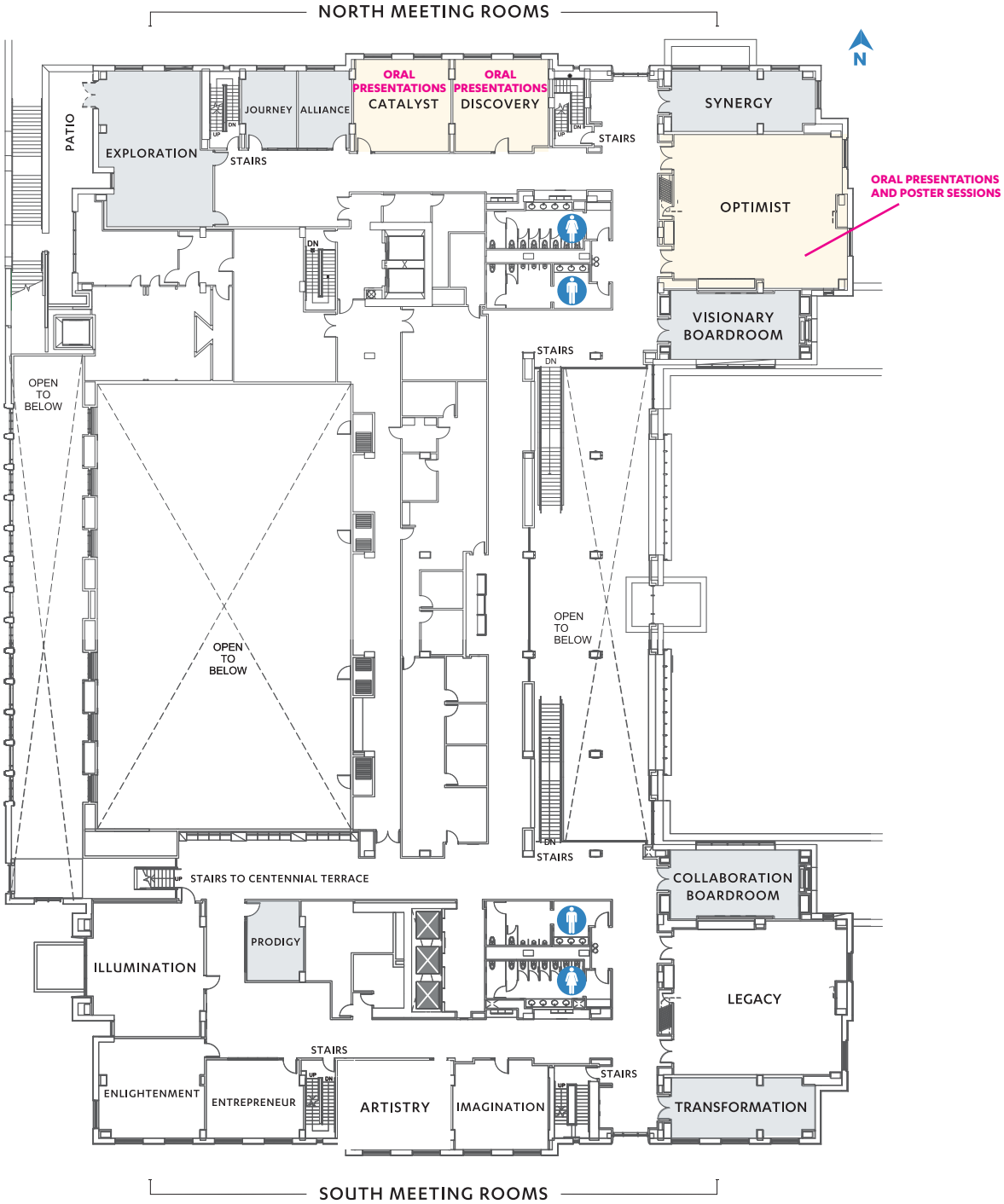
** Scan to view full program and presentation abstracts at mcnair.aap.ucla.edu.*

** Break refreshments will be available throughout the day at various "Snack Bar" locations, see venue maps.*

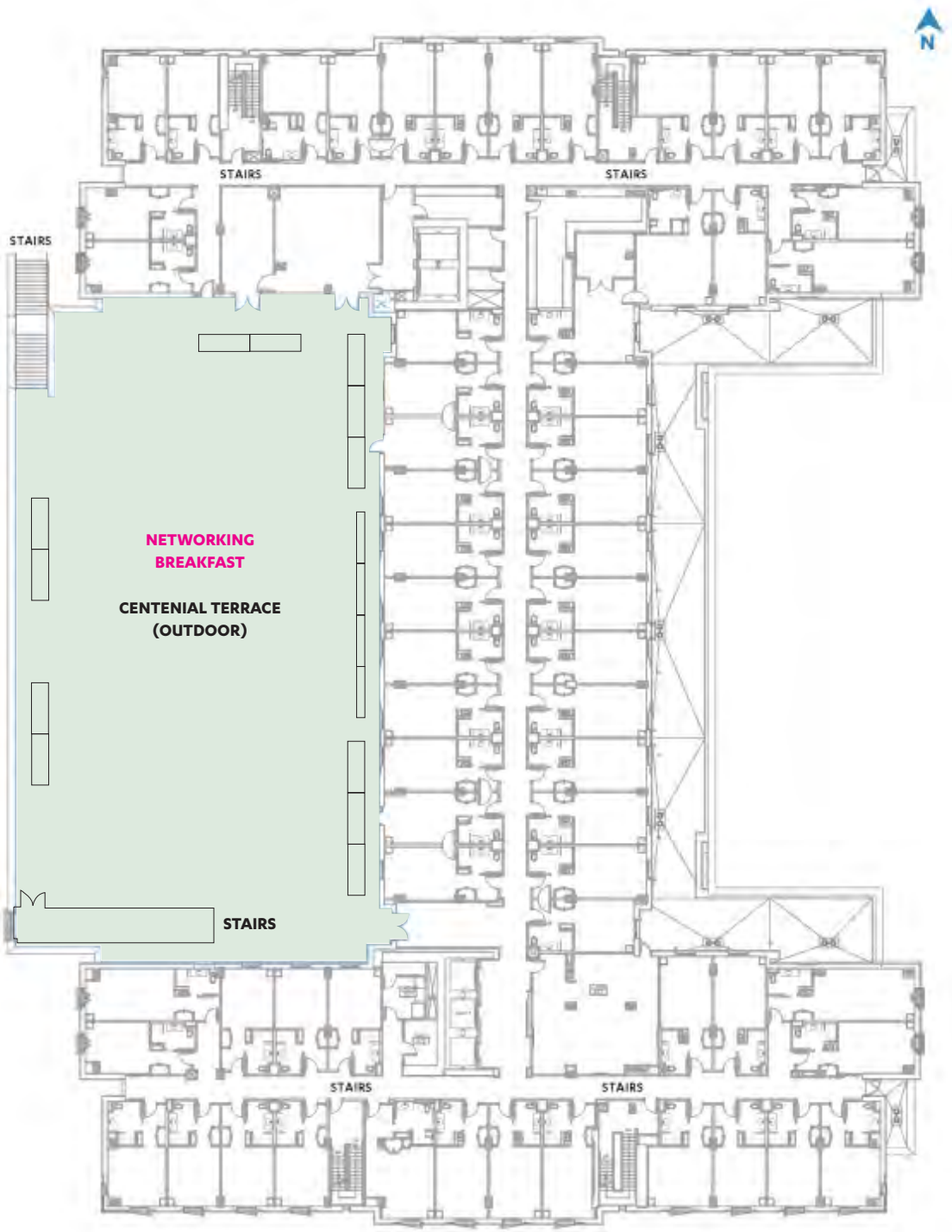
LUSKIN CENTER
1ST FLOOR



LUSKIN CENTER
2ND FLOOR



LUSKIN CENTER
3RD FLOOR



ABSTRACTS

ORAL & POSTER PRESENTATIONS

Scan to view at mcnair.aap.ucla.edu.

August 1, 2023 - 9:30 AM Anthropology, Gender, and Ethnic Studies Breakout I: Panel A

SARAÍ CANTÚ
University of Texas at Austin
Rebellious Daughters in Ana Castillo's and Sandra Cisneros's Poetry
Location: Pinnacle

In the poetry of Ana Castillo and Sandra Cisneros, the bicultural struggle for a liberated personhood is reflected in the interpersonal relationships with their parents and the traditional values of the culture. Often, women in Mexican culture are confined to be mothers and wives; an inheritance meant for the daughter as well. Nonetheless, in U.S. society, women are not as limited by their familial relationships, rather are encouraged to leave home and pursue their passions. This support is rarely seen in Mexican families who expect their women to follow the traditional roles and oftentimes reprimand their daughters for choosing a different future. Situated between the U.S. society and the patriarchal Mexican culture, Cisneros and Castillo attempt to forgo the expectations and espouse their own passions as writers. These acts of defiance, such as leaving the household and refusing to marry, are treated as rebellions that insult the standard, causing the poets to experience consequences like rejections and oppressive loneliness from their family. This presentation argues that the works of Cisneros and Castillo serve as bridges for understanding the complexities of traditional parental relationships in U.S. society in relation to the daughter's perceived personhood. In analyzing the works of the poets, the presentation investigates their influence towards other Mexican-American women who may find their situations mirrored in these women's work. With the poetry of Castillo and Cisneros, other daughters can look at this 'rebellion' and recognize their own capacity to embrace their dreams regardless of the limits.

CORINA GONZALEZ
University of California, Los Angeles
Decolonizing Colorism in the Mexican Diaspora with Mexican American Women
Location: Pinnacle

Colorism among individuals of Mexican descent originates from the racial hierarchies of the Spanish colonial period (fifteenth to the early nineteenth century). Subsequently, colorism has been resurrected, reinstated, and perpetuated among Mexican Americans, who retained gendered connotations of colorism. Current literature indicates that Mexican American women experience colorism through generational trauma, patriarchal structures, assimilation, and lingering gendered racial hierarchies. However, the qualitative data from the studies focusing on Mexican American women's experience with colorism do not exceed ten participants. This sample size is significant because research acknowledges that Mexican American women experience colorism differently from their male counterparts, but their gendered experiences still need to be explored. In my research, I ask how colorism in the Mexican American community has shaped family life, gender, and racial identity for Mexican-American women in the twenty-first century. For my data collection, I will use testimonios, a qualitative research method that consists of loosely structured interviews and facilitated group discussions, to interview at least twenty Mexican American women. I will use Emma Pérez's theoretical intervention, "the decolonial imaginary," to analyze the experiences of Mexican American women with colorism under an alternative historical consciousness.

JAZMINE LARA GUERRERO
University of South Carolina
Descriptive Representation in Politics and its Impact on Voting Turnout and Behavior on College-Aged Women of Color
Location: Pinnacle

Voting is an integral part of a democracy. Scholars have looked at the multiple factors that impact voter turnout and behavior, among them political affiliation, education level, and the perceived identity of the candidate. Studies have shown that women of color tend to vote for more women of color than white women. This paper explores the role of descriptive representation in voter turnout and behavior. Description representation is the characteristics of representatives that match their citizens. Drawing on a review of the literature and a small sample of interviews with college-aged women of color, I examine whether descriptive representation affects people's decision to vote and their choice of candidate. With an increasingly diverse government, this research will provide insight into the future of women of color in elective offices.

ANDREA MALAGÓN
University of Washington
Culturally Responsive Organizing: Experiences of Student Affinity Groups at a PWI
Location: Pinnacle

At the University of Washington, first-generation students of color often navigate and negotiate their available support through Registered Student Organizations (RSOs). Student leadership serves as a counter narrative to the lack of representation and promotes action towards social change. The purpose of this study is to explore and understand the ways in which first-generation students of color create, perpetuate, and increase access, support, and sense of belonging through culturally responsive safe spaces on campus. Applying theories from George DeVos and Lola Romanucci-Ross on instrumental and expressive use of ethnicity, and Diana Bui's essay on mutual aid associations, to interrogate both formal and informal structures of campus, as manifested in safe spaces for students of color who use these resources to enhance belonging and activism. This qualitative study uses DeVos and Romanucci-Ross' and Bui's theories to curate questions and analyze how ethnicity acts instrumentally and expressively in culturally responsive organizing. Through semi-structured interviews with executive board members of RSOs each representing different cultural backgrounds, I predict that deconstructing norms of student activism and fostering belonging are difficult among RSOs due to gaps of cultural knowledge and difficulty aligning diverse experiences and perspectives to multiple social causes. Through this research, I aim to refine my focus on the acquisition and perpetuation of ethnicity in student organizations and its impact on the undergraduate experience for first generation students.

August 1, 2023 - 9:30 AM Biology Breakout I: Panel A

MARCUS GOMEZ
University of Arizona
Investigating Novel Treatments for Hypoxic Pancreatic Adenocarcinoma
Location: Odyssey

Pancreatic ductal adenocarcinoma(PDAC) is a highly aggressive and common form of pancreatic cancer. Patients with PDAC have a less than 10% five-year survival rate. One factor contributing to the aggressive behavior in PDAC is hypoxia, or lack of oxygen. Hypoxia is deadly in healthy tissue whereas it promotes survival and drug resistance in cancer. This has led to a lack of treatment options for PDAC patients. Given that healthy tissue is not hypoxic, developing a hypoxia specific drug may provide novel therapies for PDAC patients. Here, a drug screen was conducted from an established Food and Drug Administration library to determine if previously discovered compounds had the ability to target hypoxic cells. One compound was identified in the initial screen, 3-methoxycatechol. Tests will be done to determine the mechanism of action and assess the toxicity of this compound. Research focused on identifying PDAC and hypoxia specific targets will provide additional therapeutic options for patients improving overall survival rates.

GUADALUPE GUADARRAMA
University of Washington
Evaluating Novel Targets for Group 3 Medulloblastoma
Location: Odyssey

Medulloblastoma is the most commonly diagnosed aggressive brain tumor in children. There are four distinct subgroups of medulloblastoma with different molecular characteristics. One of these, Group 3 (G3), accounts for 25% of cases with a less than 50% 10–year survival. G3 tumors are characterized by MYC amplification or gain, which is a pathway that currently is not clinically targetable. Investigations of novel therapies to disrupt MYC activity are highly relevant for tumor biology. Recent studies have observed that Y-box binding protein 1 (YBX1) is overexpressed in medulloblastoma compared to normal cerebellum, with the highest expression in G3 tumors. Interestingly, research has shown that YBX1 and MYC can regulate one another at both the transcriptional and translational levels. Recent work identified a small molecule with potent YBX1 inhibitory activity, however, its effects in medulloblastoma have not been studied. We hypothesize that inhibition of YBX1 will target MYC activities and decrease growth of patient-derived cell lines. We treated multiple G3 patient-derived lines with single agent YBX1 inhibitor (SU056) and noted a dose-dependent decrease in growth. We further tested the stability of YBX1 in the presence of SU056. We observed reduced protein stability with treatment, suggesting potent inhibitor binding. We are currently evaluating the effects of SU056 combined with standard-of-care therapies, such as chemotherapy and radiation. Based on previous work using RNAi, we expect that SU056 will sensitize cells to chemotherapy and/or radiation. These novel combinations may correlate with fewer side effects and will improve quality of life in children with medulloblastoma.

SHIRLEY JACQUET
Fayetteville State University
Curcumin and Gallic Acid is an Alternative to Decrease Inflammatory Breast Cancer
Location: Odyssey

Inflammatory Breast Cancer (IBC) is one sub-type of breast cancer (BC) that is the most aggressive form with a higher morbidity and mortality rate compared to non-IBC cancer cells. SUM149, a type of IBC cell line, is also considered a Triple Negative Breast Cancer (TNBC). Triple Negative Breast Cancer is negative in estrogen receptor, progesterone receptor, and HER-2/NEU receptor. It is a common aggressive type of breast cancer with a high malignancy rate and poor prognosis with a chance of developing cancer cachexia (Zhang, 2022). Current treatments such as local surgical excision and chemotherapy have proven to be ineffective due to the aggressiveness and high resistant rate of the cancer (Lin S, 2022). However, alternative chemotherapeutic remedies such as curcumin and gallic acid have been proven to reduce cancer cell growth and promote cell apoptosis. We hypothesize that treatment with curcumin or gallic acid will result in a decrease in cancer cell growth, metastasis, and cell apoptosis.

SAVANNAH PORTER
East Central University
Purification of Tax a Viral Oncoprotein of HTLV
Location: Odyssey

Human T-cell Leukemia Virus (HTLV), is a retrovirus of clade deltraretroviradae with two known sub-types (HTLV Type-1 and HTLV Type-2). HTLV-1 can development into an extremely aggressive blood cancer called Adult T-cell Leukemia/Lymphoma (ATLL) but HTLV-2 does not. Tax is a viral oncoprotein expressed from HTLV Type-1. The coding regions for Tax vary in HTLV-1 and type-2 in the predicted transcriptional activation domain. Tax recruits host activator and co-activator proteins to bind to the integrated viral promoter region of HTLV and rapidly activate viral gene expression, possibly being the cause of ATLL. The transcriptional regulator function of Tax in the host cell are not fully understood at this time. Exploring interaction surfaces of Tax with various host proteins involved may help us understand the basic transcriptional activation mechanisms that are manipulated by the HTLV-1. To investigate this, we purified type of Tax called Strep-Tax. Once the oncoprotein Tax is purified, it can be used with more advance techniques such as activity bead-binding assays and it will increase the reliability of the results.

August 1, 2023 - 9:30 AM Clinical Medicine, Dentistry and Public Health Breakout I: Panel A

LUZ CAPETILLO
Loyola Marymount University
Time is Brain
Location: Pathways

Despite being the third leading cause of death after cancer and heart attack, stroke research and treatment did not progress until the mid-1990s. Stroke was long considered a brain disorder with no viable treatment, and its victims were left permanently disabled or dead. A drug known as tPA (tissue plasminogen activator) was widely used for myocardial infarction and had been in the process of extensive testing to treat stroke. My research question is, why did it take so long for tPA to be taken seriously as a drug for stroke? When I was born in 1998, prominent doctors, neurologists, and emergency physicians debated if stroke was an acute emergency. The practical contribution of my project is to broaden the knowledge of stroke and tPA to the general public. I hope that with my research, there is a better understanding of what stroke is and that time is the most critical factor in treatment. I lost both of my maternal grandparents to stroke in 2020, and their chances of leaving the hospital without permanent disability would have been 1 in 3 with tPA. I conducted a literature review of Justin Zivin M.D, Ph.D., and John Galbraith Simmons' book, tPA for Stroke: The Story of a Controversial Drug. Additionally, I gathered and synthesized footage from my advisor, Professor Glenn Gebhard, who is filming a documentary on tPA and stroke research. I learned that stroke and neurology have changed drastically within the last 30 years.

NY HA
University of Washington-Seattle
Optimizing Medicaid and CHIP Coverage for Immigrant Children
Location: Pathways

As of the year 2022, about 40 percent of income-eligible immigrant children were uninsured due to their immigration status. Despite immigrant populations growing higher than ever, immigrants and those of immigrant backgrounds often encounter difficulty in accessing effective healthcare due to misinformation and immigration status. The purpose of this literature review is to explore the impact of Medicaid/CHIP and its effectiveness in serving immigrant children and the children of immigrants given the unique barriers this population faces to equitable healthcare. Through this inquiry, I detail Medicaid's role in healthcare injustice and future directions for improved healthcare policy serving the immigrant population. I analyzed eight journal articles from PubMed and Web of Science databases to examine reasons for disparities. The terms used across database search engines included the terms "Medicaid", "CHIP", and "immigrant children," limited to articles published from 2009 to 2023. Using systematic review, I expect to find that immigrant parents are unaware of the benefits their child has from Medicaid due to poor communication from service providers. My research will help identify Medicaid gaps and opportunities, which can help inform policy revisions that will expand healthcare insurance coverage for immigrant children.

JAYCE WARNER
University of Minnesota Twin Cities
The Impact of Objective Health Metrics Upheld by Insurance Companies on Patient Centered Care
Location: Pathways

In the course of biological science, there has been a shift away from qualitative values to quantitative values about an individual's health. This objectification of the individual is upheld by insurance companies, which reduce the value of human life to cost of treatment. As witnessed today, contemporary/modern medicine is engaged in crisis care and not preventive care that would afford an individual to flourish in our complex environment. Furthermore, by objectifying the human body, subjective metrics such as pain are devalued, which compromises patient centered care models. In this presentation, I will interrogate the complex issue of reducing care to a system of quantitative numbers by examining a group of individuals existing in what I consider an in-between precarious space of insurance coverage. I will look at this problem through the lens of nutrition, as nutritional health starts from care models for the individual. To understand the binary of the object and subject, I will examine medical ethics texts from the seventeenth century to the early twenty-first century. Some examples include Donna Haraway's "The Modest Witness" and Georges Canguilhem's "The Normal and the Pathological". Using these texts will provide a perspective to understand how we can integrate patients' voices in their own care.

TIMOTHY WILEY
South Carolina State University
Addressing Childhood Obesity in African Americans Through Improving Food Literacy and Developing Cooking Skills
Location: Pathways

Obesity in the U.S. is a devastating public health crisis affecting millions of adults and children. Understanding how the household shapes the child's dietary behaviors that lead to the development of obesity is essential to provide adequate nutrition interventions. Being overweight to obese is a contributing factor in developing chronic diseases such as type II diabetes, hypertension, and heart disease. In addition, this disease leads to stress, low self-esteem, and depression, which can and will profoundly affect a child's mental health. This paper performs a scientific review of existing studies on economic, social, and psychological factors contributing to childhood obesity by assessing several factors that contribute to obesity, such as (1) food literacy, (2) parental factors, (3) the scarcity of healthy food options, and (4) behavioral and biological functions that affect children that seek to develop basic cooking skills and food literacy in children and parents to mitigate the problems of obesity.

Keywords: "cooking skills," obesity," "parents," "childhood obesity," "Stress," "African Americans," "Peer effect," "parental influence."

August 1, 2023 - 9:30 AM History Breakout I: Panel A

LUKE BUTT
University of Arizona
The Evolution of Intelligence in the United States Military: Success or Failure?
Location: Innovation

Throughout history, military intelligence, the practice of gathering, analyzing, and utilizing information on opponents to exploit their weaknesses or defend one's own, has been a cornerstone for several successful nations. Nations that are constantly one step ahead of their enemy frequently come out on top; however, military intelligence has only been professionalized within the last century. Over the course of the last one hundred years, the United States has been one of the many nations at the forefront of the evolution of military intelligence. While individual cases where intelligence has been used are easy to judge in their effectiveness, my question is: has military intelligence been truly worthwhile to the United States since its professionalization in 1917? My study attempts to answer whether or not the resources and effort put into gathering and analyzing intelligence by the United States military has been worthwhile over the years. In order to provide insight to this question, I examine how military intelligence has been gathered, analyzed, and utilized by the United States and its allies, and how it has evolved over the course of the twentieth century using reports, documents, and other primary sources. Alongside this, I also provide examples of times where military intelligence (or lack thereof) has contributed to success and failure in battle or diplomacy. I hypothesize that despite some failures, military intelligence has proven invaluable to the United States military and is responsible for many successes over the years.

KARINA JIMENEZ
UC Davis
The Role of Outside Support: Strike Support Committees and Catholic Church Support in the Farah Manufacturing Company Strike
Location: Innovation

From 1972 to 1974 in El Paso, Texas, Chicana women partook in a strike against the Farah Manufacturing Company due to unfair labor practices. As the workers sought unionization, they received support from the Amalgamated Clothing Workers of America (ACWA). The Farah strike encapsulates the struggle for Chicana women's labor rights in the Southwest of the United States and shows a continuation of the broader Chicano movement taking place in the country. This study analyzes various media sources, including oral histories, newspapers, pamphlets, and news documentaries/films. While most literature about the strike focuses on the company owner William Farah, the ACWA, and the striking women, an analysis of external involvement as that of the Catholic Church and strike support committees has been missing from the story of the strike. As part of the strike and boycott efforts, Catholic Bishop Sidney Metzger and various Farah Strike Support Committees across the nation played a significant role in garnering support for the strikers. The support of the Church and Farah Strike Support Committees shows general American interest in continuing equity for minorities across class, gender, and labor lines. My research helps us understand why these outside groups supported the striking women. And how these supporters differed in how they viewed the strikers and the strike as a movement.

DONOVAN WRIGHT
California State University, Dominguez Hills
Black Queer Activism in Los Angles During the AIDS Epidemic
Location: Innovation

During the 1980s the United States confronted the AIDS epidemic, arguably the most significant health crisis of the post-1945 era. One of the biggest populations affected by the epidemic was the LGBTQ+ community, more specifically gay men and transgender people. Due to the rise of family values in conservatism under the Reagan administration, the national government did very little to mitigate the virus' impact on America's Gay community. Even more egregious, Black gay men and transgender people were, and still are, more likely to contract and suffer the harsh effects of AIDS, and activism from White Queer Americans did not help to reverse the problem. This presentation examines the activism of the Black Queer communities in Los Angeles as shown through a variety of articles in LGBTQ+ newspapers in the latter half of 1980s. These publications indicate that there was particular collectivization and activism amongst the Black LGBT Americans in Los Angeles that created solidarity and identity for a community that was facing a major health crisis, combined with homophobia and racism.

August 1, 2023 - 9:30 AM Microbiology, Immunology, Molecular Genetics Breakout I: Panel A

SABRINA BERISHA
University of South Carolina - Columbia
The Impact of the Gut Microbiome on Inflammatory Diseases
Location: Discovery

The gut microbiota is a complex and diverse population of microorganisms, consisting of bacteria, viruses, and fungi that serve many purposes in the human body. Studies have shown that dysbiosis (imbalance) and/or a decreased diversity of intestinal microbial flora is directly correlated with numerous diseases, including inflammatory diseases. Ulcerative colitis, autoimmune hepatitis, and rheumatoid arthritis are among the inflammatory diseases that demonstrate a notable association and have shown promising responses to a treatment designed to enhance gut health, called Fecal Microbiota Transplant (FMT). FMT involves the transfer of fecal microbes from a healthy donor to an individual suffering from a specific disease. Through the compilation of scholarly sources, this project aims to provide a more in-depth understanding of the impact of the gut microbiota on inflammatory diseases and yield information as to why FMT is a promising course of action to treat the three diseases mentioned previously. While working to demystify the intricate interplay between gut microbiota and inflammatory diseases, this literature review will also offer insights on where researchers should focus their efforts to provide new methods of treatment, bringing hope to millions of individuals worldwide.

CHANDLER CHRISTINE KELSER
University of Arizona
Drug Combinations on Lifespan Extension in C. elegans
Location: Discovery

Aging is a universal physiological process that is a part of all living organisms. Aging is caused by structural changes to metabolic and signal transduction pathways. In order to understand the impact of these molecular structures we use model organism Caenorhabditis elegans (C. elegans), a transparent nematode roundworm which is characterized by having a short generation time and short lifespan, making it easy to manipulate and monitor for aging studies. In invertebrate model systems, hundreds of drugs have been found to prolong life. Each drug has a restricted range of targets and cannot, by itself, have a beneficial effect on the full range of molecular processes involved in aging. Combinations of pro-longevity drugs with additive or synergistic mechanistic targets may be more beneficial than using the drugs alone. In addition to drug combinations, we will be using an optimized testing device to observe and conduct analysis of C. elegans. We can more easily observe thousands of individual C. elegans with the WorMotel system when combined with automated imaging and analysis than with any manual experiment. Screening medication combinations to find additive or synergistic interactions can be improved due to this platform. Data is currently being collected and will be analyzed later this month. Our goal is to further understand the benefits of pro-longevity drug combinations on aging on C. elegans.

JIMMY TANGCHITTSUMRAN
University of Colorado - Denver / Anschutz
Tryptophan Metabolism Contributes to Autoimmune Arthritis through Modulating Auto Antibody Responses
Location: Discovery

Tryptophan metabolism is linked to the development of autoimmunity, suggesting one of its active metabolites activates immune responses. Our own data utilizing a mouse model suggests a link between the tryptophan metabolite, indole, and autoimmune arthritis leading to the hypothesis that indole is pathogenic. The similarities in joint inflammation which develops in the mouse Collagen Induced Arthritis (CIA) model resembles inflammation in human patients. To investigate the effect of tryptophan metabolism and indole production, we devised 3 treatment groups to determine the effect/severity on inflammatory response during CIA model. DBA mice of six to eight weeks old were used in the experiment to ensure a fully mature immune system. Mice were immunized with complete Freund's adjuvant (CFA) and collagen at day zero and day twenty-one, given formulated diets and indole, and scored for joint inflammation regularly. At day 35, serum was collected for analysis of anti-collagen autoantibody production by ELISA for anti-collagen Immunoglobulin G (IgG) and IgG isotypes (IgG1, IgG2a, and IgG 2b). Tryptophan produces indole by metabolic pathway and affects anti-CII antibodies, which then affects joint inflammation. Changing mice to a tryptophan deficient diet reduced auto-immune arthritis as C3 activation and IgG 2b was lower. Removal of indole (TD) from CIA mouse diets led to less pathology observed. The importance of this is to facilitate a better understanding which can translate to treatment for analogous human auto-immune arthritis and risk factors. This data also helps to highlight the role of diet and gut microbiota regarding those with predisposed conditions.

August 1, 2023 - 9:30 AM Psychology and Cognitive Science Breakout I: Panel K

MADELEINE R. ALLEN
University of Wisconsin-Madison
Effective Inclusion of Family Caregivers into the Mental Healthcare Team for Older Veterans with Memory Loss: Clinician Perspectives
Location: Catalyst

Family caregivers assist older adults with memory loss but may need to be more effectively engaged in the healthcare team. Caregiver inclusion may help address known disparities in mental health care access and quality for these patients who experience high rates of comorbid mental health (MH) disorders. We sought to identify facilitators and barriers to effective caregiver inclusion for older patients with dementia and comorbid mental health concerns. Nine multidisciplinary MH clinicians (psychiatry, social work, psychology, and clinical pharmacy) completed individual, 30-minute, semi-structured interviews on working with family caregivers of older patients in a MH service at a large Veterans Affairs medical center. Content analysis using the Nvivo qualitative software program will guide the identification of factors relevant to inclusive care in this setting. An initial team-based rapid content analysis resulted in a structured codebook with 32 codes reflecting patient, caregiver, and provider factors that impact caregiver involvement in the MH setting. Codes include identifying and developing rapport with the caregiver and good communication between the patient, caregiver, and provider. Increasing caregiver inclusion for older Veterans [persons] with memory loss is critical to meet this growing patient population's healthcare needs and reduce MH care disparities for older Veterans and their families. Future steps include interviews with patients and caregivers. Ultimately, our findings will go towards developing clinician guidelines and training to support more effective caregiver involvement in the healthcare setting.

THAIRU MOORE-PETINAK
Eastern Michigan University
Facilitating Treatment Seeking: Appraising the Efficacy of Stigma-Reducing Interventions Pertaining to Pedophilic-Oriented Individuals
Location: Catalyst

The stigmatization of individuals with a pedophilic orientation prompts maladaptive functioning in several domains and is associated with deleterious effects in the realm of child sexual abuse (CSA), most notably an increased risk of committing a sexual offense. A growing body of research has examined interventions aimed at reducing pedophilic stigmatization thereby increasing treatment utilization and early intervention. The present study serves as an extension of previous research conducted by Harper and colleagues (2016), and evaluates the impact of two interventions (narrative humanization and informative material) on university students' explicit attitudes toward pedophilic-oriented individuals, as compared to a control condition. Participants completed a series of baseline measures, followed by exposure to either an intervention or the control condition. The Moral Disengagement Towards Sexual Offenders Scale (MDS-SO) and Stigma and Punitive Attitudes Toward Pedophiles Scale (SPS) were readministered to assess changes in explicitly conveyed views toward individuals with a pedophilic orientation among all groups. We hypothesized that both interventions will significantly reduce negative perceptions of individuals with a pedophilic orientation, but that narrative humanization will exhibit a greater effect size. Preliminary results reveal stigma-reducing effects among all conditions, particularly among both interventions. Still, a larger sample size is required to confidently conduct comprehensive inferential statistical analysis. Future directions for research and societal implications are discussed.

TRANIAH NEAL
University of South Carolina - Columbia
Breaking Barriers: Examining the Contributing Factors to Suicide among the Black Male Population
Location: Catalyst

Black men face a wide range of discrimination imposed by society, resulting in detrimental effects on the black community. The National Alliance on Mental Illness (NAMI, 2023) data demonstrates that suicidality among young Black or African American men aged 15-24 ranks as the third leading cause of death. This research explores the stigma surrounding mental health, social influences, and the availability of treatment, all of which contribute to the occurrence of suicide among Black men. The study examines existing research on factors that predict mental health issues and obstacles that hinder Black men from receiving necessary care. This study aims to diminish the stigma associated with mental health, increase awareness, and provide support tailored to the unique needs of Black men. By addressing the stigma, social factors, and accessibility to treatment, we can reduce disparities and foster a welcoming and empathetic community that promotes positive mental health outcomes.

Keywords: Black Men, Black Community, Mental Health

OLIVEA SPENCER
University of Arizona
A View into Developing Diagnostic Tools for Canines Developing Cognitive Dysfunction Disorder
Location: Catalyst

Cognitive dysfunction syndrome (CDS) may affect more of our canine companions that we may think. Diagnostics for CDS in dogs are not standardized as they are not evenly scored, varying the criteria for diagnosis. CDS is defined as morphological changes to the cerebral cortex and hippocampus. Both aid dogs to assess context of appropriate behaviors. Brain aging can result in morphological changes, including loss of brain cells, global cortical atrophy, cerebral amyloid angioplasty with compromised cerebral blood flow, and ventricular enlargement. Many veterinarians will have to diagnose based upon owners own observations of any behavioral changes in their dog. Common symptoms of CDS are disorientation, increased anxiety, decreased social interaction, incontinence, decreased activity, and abnormal sleep patterns. Studies have found that humans diagnosed with Alzheimer's and dogs with CDS have similarities. Dogs can represent good models for comparison one memory, inhibitory, and spatial awareness tasks to help detect early onset CDS. Vice versa as well medications utilized for humans with Alzheimer's can be used to apply to dogs, as they metabolism in a fashion similar to humans. Utilizing a touchscreen computer to test dogs using location discrimination, allowing the dog to make a choice. Once the dog has selected the assigned correct side 7 out of 8 attempts with an allowed 1 incorrect attempt. The correct side would switch. Data is currently being collected and will be analyzed later this month. We will be analyzing how well a dog performs with the location discrimination and its correlation to age.

August 1, 2023 - 10:45 AM Anthropology, Gender, and Ethnic Studies Breakout II: Panel B

LAWRENZ ELLMAN-SANDERS
Representative of the University of South Carolina-Columbia (home institution is Voorhees University)
Dear Mama: The Impact Single African American Mothers have on their Sons' Educational Attainment in South Carolina
Location: Pinnacle

This research project sought out to discover if African American males raised by single mothers are more driven to achieve degrees in higher education than African American males raised in a two-parent household. A literature review and a case study conducted with six African American males in higher education in South Carolina informed the analysis in this research. Remaining true to the African American theoretical method of telling one's own story as part of the research process, I introduced my own experiences to provide structure to the outline of this paper research. This study could shed light on the influence of single mothers on the academic success of African American males in higher education with the ultimate purpose to establish efficient collaborative efforts between families, communities, educators, and policymakers, to ensure that African American boys and young men, have the tools they need to thrive academically and beyond.

JASMIN LOPEZ
UCLA
The Path to Liberation: Exploring Transformative Justice as a Catalyst for Social Change
Location: Pinnacle

A radical shift in institutional and social structures is necessary to create a society free of police. Abolishing our dependency on policing is a multi-stage process that began with calls to "defund the police," as we saw in the 2020 uprising in response to the ongoing assassinations of the Black community. This outcry called for further rejecting police and addressing social issues like mass incarceration, excessive surveillance, and racial injustice that impact many generations. Further, it is essential to understand why some people rely on the police but not others, and what do others rely upon for justice? This study aims to understand transformative justice as a social movement presenting alternatives to police and prisons. Moreover, I explore different models for treating harm and violence with the intent of ending the cycles of violence. How do these models promote healing, accountability, and collective liberation?

JOSE ANGEL SANTANA GUERRA
University of California, Davis
Perhaps, If It Were Not For Life: The Racial Semiotics of Revitalization & Decay within Sacramento's Oak Park
Location: Pinnacle

The history of segregation and racial exclusion in the city of Sacramento is long and pervasive. Although overall rates of segregation have begun to decrease in recent years, certain neighborhoods, such as in Oak Park, have seen segregation rates increase. The city has narrated this historically Black and Brown neighborhood as uniquely violent and dangerous, but in the last decade it has engaged in a program of what the city calls revitalization, in a stated attempt to redress histories of disinvestment and redlining. Since the revitalization project began a decade ago, 24% of the entire Black population of Oak Park has been pushed out, with poor Latinx populations suffering a loss of their homes in the community as well. This ethnographic research examines the ways working class Black and Brown communities cohere Oak Park as a collective agent through urban texts. It takes these urban texts as in conversation with the material and racial semiotic productions of the city. I argue that the city of Sacramento understands Black and Brown working class people in Oak Park as a form of decay through the city's material and archival practices. I suggest the community's urban texts assert alternative visions of life-making outside this process of revitalization, which assumes neoliberal frameworks of existence. Thus, this research is concerned with Sacramento's impulse to enact epistemicide against its Black and Brown inhabitants for the purpose of city-building. This study considers how Sacramento engages in urban colonization by concealing violence within its economic development plans.

EDWARD STOCKARD
Augsburg University
How Does Toxic Masculinity Shape Identity Among BIPOC Young Adults?
Location: Pinnacle

Toxic masculinity is used to describe “a loosely interrelated collection of norms, beliefs, and behaviors associated with masculinity, which are harmful” (Sculos, 2017, p. 3). This harm can manifest in many ways such as gender roles and expectations, heteronormativity, misogyny, violence, and sexism. These norms, beliefs, and behaviors are learned at a young age among individuals from families to school settings to culture and society. In social work, these norms impact bullying and harassment (Ingram, et. al., 2019), sexual and intimate partner violence (Murnen, et. al., 2002), and resistance to physical and mental health treatment (Kupers, 2005). Learning more about toxic masculinity as a social worker will gauge a better understanding of clients. While there is growing literature about how toxic masculinity manifests and how it is perpetuated, very little research exists about toxic masculinity and the intersections of race, ethnicity and gender. This qualitative study explores the ways toxic masculinity shapes gender identity among 10 young adults who identify as Black, Indigenous and People of Color (BIPOC). Research suggests that messages about masculinity occur in early development such as home and school settings and are affirmed among peer groups, cultural and societal expectations into young adulthood. Participants provided their unique experiences as racialized and gendered individuals, which expands the knowledge of toxic masculinity as not only reinforcing harmful gender norms, but also sustaining racist, misogynistic, homophobic, and transphobic norms, beliefs, and behaviors.

August 1, 2023 - 10:45 AM Biology Breakout II: Panel B

ALANA BETANCOURT
University of Arizona
Single Cell Proteomics
Location: Odyssey

The field of proteomics focuses on identifying proteins from a given sample. It is useful in clinical applications such as disease diagnosis. Single cell proteomics is a relatively new and rapidly advancing field. Its main goal is to create protein samples using a single cell. Preserving spatial concepts of the cell as well as cell interactions are other focuses. This is done using methods of sample purification, peptide separation, and bioinformatic analysis. Several advancements have also been made in this subfield, such as the concept of deep visual proteomics. These techniques include liquid chromatography and mass spectrometry. Obtaining enough protein sample from a single cell as well as identifying proteins from it poses several challenges. These challenges include the suppression of less abundant proteins in samples. The research question proposed involved increasing the amount of protein samples and reducing the suppression of less abundant proteins. This was done using samples gained from cells developed in seed plates. The cells were prepped into protein samples using methods of cell lysis and enzyme cleavage. Protein samples were then inserted into a mass spectrometer for an extended period of time. This was done for identification of proteins in each sample. Spectra were recorded of the sample from the scans of the mass spectrometer and was interpreted using several data programs. These trials were repeated, using specific counts of cells in each sample. These counts decreased in amount, with the goal being to create and analyze a sample from a single cell.

TONI CASTRO
University of Southern California
YAP or TAZ: Understanding the Divergent Roles of the Hippo Pathway Coactivators in Nephrogenesis
Location: Odyssey

Podocytes are specialized cells vital to maintaining overall renal health. Podocytes form a crucial component of the filtration apparatus in the nephron working units of the kidney, which function to clean the blood. The Hippo pathway, a conserved signaling pathway within vertebrates involved in organ size control, tissue homeostasis, and regeneration, has emerged as a key regulator of podocyte function and integrity. Yes-associated protein (YAP) and the transcriptional coactivator with PDZ-binding motif (TAZ) are transcriptional coactivators within the Hippo pathway, both are significantly expressed in the podocyte nuclei. Previous studies demonstrated that silencing YAP leaves podocytes significantly more vulnerable to apoptosis, whilst TAZ deletion has been shown to affect the morphology of the podocytes and impede their function. Though research has demonstrated the importance of Hippo pathway components in maintaining podocyte function, the mechanisms of how this occurs are not yet fully understood. In this study, we investigated the roles of yap1 and taz(wwtr1) in zebrafish and podocyte development through their effects on the expression of podocyte markers, nephrin, wt1a, and wt1b. Interestingly, our data indicate a role for yap1 in early podocyte formation and warrant future studies to explore the emergence of podocyte progenitors. By expanding on the existing knowledge in the field we may better understand the potential of the Hippo Pathway as a therapeutic target for kidney diseases.

JACLYN MARROQUIN
University of Arizona
Developing New Methodology to Understand How Human Papillomavirus Alters Host Genes for Survival
Location: Odyssey

Human Papillomavirus (HPV) is responsible for cancer in different areas of the human body such as cervical, oropharyngeal, and anogenital cancers. HPV infects a host cell and sets on a mission to inhibit and evade many different genes responsible for cell death and triggering an immune response. Many different studies have implicated host-virus interactions important for inhibiting and avoiding the immune system. For example, cGAS and STING are host proteins that play a crucial role in controlling viral infections and triggering an immune response. However, HPV has found ways to counteract the functions of these antiviral proteins. Our lab uses in vitro methods to study the arms race between HPV and the host. I have been focused on developing new methods for the lab. Methods such as CRISPR-Cas-9 based fluorescent tagging of the endogenous genes will allow us to track cGAS and STING proteins in HPV infected cells and directly observe their movement and how HPV alters their role. Another method being recently used in many studies is the sequencing of viral mRNA using MinION technology. I am optimizing approaches to directly sequence HPV mRNA from diverse tissues and samples. These efforts will provide a better understanding of how HPV genomes and the host interact at different stages of the viral lifecycle. Through my results we will gain a better understanding of how this virus alters our own genes for survival.

KIARA SMITH
Fayetteville State University
The Impact of Toxoplasma gondii Infection on Estrogen Receptors Alpha and Beta in an Invitro Model of the Prostate Microenvironment
Location: Odyssey

The noncancerous enlargement of the prostate is known as Benign Prostatic Hyperplasia (BPH). This is a chronic disease characterized as the enlargement of the prostate and manifested as Lower Urinary Tract Symptoms (LUTS). LUTS include frequent urination, painful urination, nocturia and more. While these symptoms are not all attributable to obstruction or enlargement, they are both large factors. BPH affects 50% of men by age 50 and 90% by age 80. Therefore, BPH is widely researched and studied using many models in animal subjects. While there are numerous models that are extremely useful in studying BPH, an additional model – Toxoplasma gondii – is capable of inducing most symptoms and pathological features of the condition, and it is associated with BPH in humans. A notable pathological feature is the formation of prostatic nodules, which had only previously been successful in the hormonal model due to its hormonal manipulation and considerable increase of estrogens. Although estrogen receptors (ER) play a key role in BPH, it is not known how ER alpha and beta react to Toxoplasma gondii infection, how they interact with each other in the prostate, or once infected with Toxoplasma gondii. Using a co-culture of human prostatic epithelial and stromal cells to recreate a prostatic environment, my study will allow for meaningful addition of scientific knowledge to the topics of ER alpha and beta, Toxoplasma gondii, and prostatic epithelial and stromal interaction that can be used to advance treatment options for those affected by BPH and improve their quality of life.

August 1, 2023 - 10:45 AM Biology Poster Session 1

MARIA TERESA ALMANZA
California Lutheran University
Mango Froyo: A synthetic fluorescent RNA thermometer
Location: Optimist

RNA thermometers are molecules comprised of non-coding RNA that are able to regulate gene expression at the translational level through changes in temperature. This is because bacteria require specific temperatures to survive in, so they are able to respond to heat and cold shock conditions. Along with my lab partners, we will be focusing on the synthetic thermometer Mango Froyo, which is a hybrid of a known thermometer, blyA, and an RNA aptamer, Mango aptamer. The Mango aptamer has the ability to bind to TO-1 biotin, which allows it to fluoresce when bound. Knowing this background, our goal in this project is to determine if temperature affects the structure and function of the hybrid Mango thermometer. We also aim to determine if the thermometer, in combination with TO-1 biotin, is able to make RNA fluoresce, and how that would affect binding and the structure of Mango Froyo. Through various biological and biochemical methods, such as DNA amplification, serial dilutions, and beta-galactosidase assays, we were able to measure the amount of reactivity of enzymes. These results have allowed us to verify the function of Mango Froyo as an RNA thermometer and aptamer fluorescence function. Future projects for our lab group include attempting to transcribe RNA in the presence of TO-1 and perform further experiments on fluorescence. This is a very understudied field in biology and biochemistry but could have significant clinical implications, RNA thermometers could help regulate gene expression and could allow RNA to be tracked in real time.

CATHERINE ORTEZ HERNANDEZ
California Lutheran University
FourU RNA thermometer as a modulator and activator of the RNA polymerase sigma 70 Factor in Escherichia Coli
Location: Optimist

This study investigated the activity of a potential fourU RNA thermometer, upstream of the RNA polymerase Sigma 70 factor, under three distinct temperature conditions (25°, 37°C, and 42°C). This research aims to investigate if the 5’ untranslated region (5’-UTR) of sigma 70 regulates the expression of sigma 70 in a temperature-dependent manner. RNA thermometers are genetic control systems that utilize RNA to detect alterations in temperature. When exposed to lower temperatures, the messenger RNA (mRNA) assumes a specific structure that conceals the ribosome binding site, known as the Shine-Dalgarno (SD) sequence, located within the 5' untranslated region (5'-UTR). This structural change effectively obstructs ribosome binding and the subsequent process of translation. The σ70 family of sigma factors is a crucial part of the RNA polymerase, responsible for guiding the bacterial to its specific promoter regions, and initiate transcription. We characterized the impact of temperature increase on the RNA thermometer's functionality by cloning into bacteria cells and testing the expression with a reporter plasmid containing beta-galactosidase. These investigations were performed to explore the implications of RNA thermometers in genomics discovery and elucidate bacterial adaptation mechanisms in response to environmental changes. Initial results demonstrate that the 5’UTR of sigma 70 is an RNA thermometer.

DANIELA RODRIGUEZ
California Lutheran University
FourU RNA thermometer in TetR family transcriptional regulator C-terminal domain-containing protein
Location: Optimist

Ribonucleic acid thermometers are RNA sequences that are temperature sensitive and help regulate gene expression. Typically, RNA thermometers undergo a conformational change upon heat stress, resulting in an upregulation of a gene downstream of the thermometer sequence. The TetR-family of transcriptional regulators (TFTRs) are a large family of signal transduction proteins that are implicated in the regulation of many processes, including cell division and the stress response in cells. In this study, we used a FourU RNA thermometer to analyze the effect it has on gene expression with the TetR family transcriptional regulator C-terminal domain-containing protein. We used PCR, HIFI assembly, Beta-galactosidase assay, and cloning to undergo this experiment. Preliminary results indicate and increase in expression in response to heat induction. This is presumably due to the zipper-like melting of a motif containing the ribosome binding site (RBS). Overall, this helps us with further development of antibiotic resistance through gene regulation.

August 1, 2023 - 10:45 AM Chemistry and Biochemistry Poster Session 1

ANDREA BANKS
California Lutheran University
Mango Froyo: A synthetic fluorescent RNA Thermometer
Location: Optimist

While RNA has been heavily researched in the field of science, RNA thermometers are historically understudied. An RNA thermometer is a molecule of non-coding RNA that regulates gene expression. Bacteria are able to adapt to a wide range of both environments and temperatures. RNA thermometers (RNATs) control gene expression at the translational level. RNA thermometers enable the bacteria to respond quickly to heat and cold shock conditions through changes in RNA structure. The specific RNA thermometer that my research will be focused on is a hybrid thermometer known as Mango Froyo. A synthetic hybrid was made with a known RNA thermometer, called blyA, combined with an aptamer called RNA Mango. In cold temperatures, the ribosome binding site is unavailable because of the thermometer's rigid structure, but with added heat, the thermometer opens up and allows the ribosome to bind. The conical ligand for the mango aptamer is TO-1. The TO-1 dye only fluoresces when bound to the Mango aptamer. Our specific aim is to develop and test a synthetic platform of a thermometer that provides fluorescent feedback in response to a change in expression. The goal is to characterize Mango Froyo by using various methods including beta-galactosidase assays. The main result that was found during our research was that we were able to validate the thermometer function. Future researchers can use the synthetic tool, an RNA thermometer, to regulate gene expression and to control and track RNA expression upon heat induction.

ALY CASTELLANOS
California Lutheran University
An RNA thermometer upstream of a Helicase
Location: Optimist

RNA thermometers are a temperature-sensitive non-coding RNA molecule that regulate gene expression through either heat shock or cold shock response. RNA thermometers are temperature sensitive, at cold temperatures the ribosome binding (RBS) site is trapped and translation of mRNA is turned off. Upon heat induction, the RBS is available and translation is on. The Rose DEAD/DEAH box helicase gene has a potential RNA thermometer in the 5' untranslated region (5'-UTR). The ROSE DEAD/DEAH box helicase contributes to innate immune signaling and remodels misfolded RNA structures. The purpose of this study is to test the predicted RNA thermometer in front of the Rose DEAD/DEAH box helicase gene to see if more protein can be produced upon heat induction, changing the gene expression. To observe these effects, we designed a specific thermometer sequence, performed PCR tests, Hifi assembly cloning, and performed Beta-galactosidase assays. Beta-galactosidase assays suggest that successful results will show increased enzymatic activity, proving that there is more beta-galactosidase present due to temperature. The more beta-galactosidase present will prove that the RNA thermometer is working with heat change. Although the proposed ROSE helicase was successfully cloned, the sequence used was not the full sequence necessary to correctly test the 5'UTR . Future experiments involving beta-galactosidase assays will be necessary to determine preliminary findings. Findings reflected the control group and future directions will include obtaining a new sequence and performing triplicates.

MONICA LOPEZ
California Lutheran University
Mango Froyo: A hybrid fluorescent RNA Thermometer
Location: Optimist

RNA is heavily researched in the field of science, but RNA thermometers are historically understudied. An RNA thermometer is a molecule of non-coding RNA that regulates gene expression. Bacteria are able to adapt to many environments and temperatures. RNA thermometers control gene expression at the translational level. RNA thermometers enable the bacteria to respond quickly to heat/cold shock conditions through changes in RNA structure. The specific RNA thermometer that my research will focus on is a hybrid thermometer known as Mango Froyo. A synthetic hybrid was made with an RNA thermometer, BlyA, combined with an aptamer called RNA Mango. In cold temperatures, the ribosome binding site is unavailable because of the rigid structure; added heat allows the thermometer to open up and allows the ribosome to bind. The conical ligand for the mango aptamer is TO-1. The TO-1 dye only fluoresces when bound to the Mango aptamer. My specific aim is to test the fluorescence of the aptamer and test a synthetic platform of the thermometer that provides fluorescent feedback. My goal is to characterize Mango Froyo by using various methods, including PCR reactions, fluorescence assays, and beta-galactosidase assays. The main result that was found during my research was that we were able to validate the thermometer function. To study the synthetic fluorescent RNA thermometer Mango Froyo would bring great significance for research and clinical implications. Future researchers can use the synthetic tool, RNA thermometers, to regulate gene expression and to control and track RNA expression upon heat induction.

MAX SEGEBERG
California Lutheran University
Genomic Discovery of RNA Thermometer in RadC Protein
Location: Optimist

RNA Thermometers are heat-regulated novel RNA structures that play a vital role in the regulation of protein synthesis. RNAs are generally single stranded molecules, but thermometers are hairpin structures that base-pair on themselves, constricting ribosome binding through sequestering the ribosome binding site (RBS). When introduced to higher temperatures, the hairpin containing the RBS denatures, allowing binding to a ribosome to complete translation. Using bioinformatics programs, RNArobo and BLAST, an RNA thermometer structure, similar to an established thermometer, was discovered in front of the gene encoding for RadC protein in Staphylococcus epidermidis RP62A. The hypothesized RNA sequence was inserted into a DNA plasmid that was, first, amplified and linearized using polymerase chain reaction, PCR. Then, HIFI DNA Assembly kit was utilized to clone the plasmid that had the insert sequence in it. The cloned plasmid was inserted into a cultured bacteria colony and beta-galactosidase assays were performed to test if the hypothesized sequence is a functional RNA thermometer. Assay results of fluorescent absorbances showed a 2.78 fold induction from 25°C to 37°C and 4.58 fold induction from 37°C to 42°C. Thus, gene expression of beta-galactosidase was induced as temperature increased, leading to the conclusion that the RadC protein is heat regulated by a RNA thermometer.

August 1, 2023 - 10:45 AM Clinical Medicine, Dentistry and Public Health Breakout II: Panel B

CHARMAINE BOYD
Fayetteville State University
Ending the HIV Epidemic in the U.S.: The Relationship of Equity Indicators with HIV Diagnosis Rates and HIV PrEP Use
Location: Pathways

The human immunodeficiency virus (HIV) remains a significant global health concern. Equity indicators consisting of multiple social determinants of health can inform on a collection of factors that may contribute to reduction in HIV rates. The current study investigates the association between equity measures and state-level HIV and PrEP (HIV Pre-Exposure Prophylaxis) rates in the United States. This is a cross sectional study of HIV diagnoses in all 50 states in 2021. State-level HIV rates were obtained from the Centers for Disease Control and Prevention (CDC), while data on HIV PrEP rates, program data, and equity indicators (opportunity score, racial equity, economic and area connectedness) were obtained from various sources. Descriptive, bivariate correlations, and multiple linear regression models were used to evaluate the relationship between state-level HIV rates and equity indicators as well as the relationship between PrEP use and HIV programs. The average HIV diagnosis rate in the United States in 2021 was 10.4/100,000. The 2022 average PrEP rate was 143/100,000 and average number of individuals with PrEP indications was 23,657. Bivariate and multiple regression results show that prosperity connectedness index (beta =-0.17) and opportunity score (beta =-0.49) were inversely associated with HIV diagnoses rates and higher number of Ryan White programs (beta =0.018) in the states was associated with higher diagnosis rate at <0.05 p-value. Improving the prosperity connectedness (poverty, housing, transportation access, clean air), and opportunities in the states can help to reduce HIV rates.

DINA INZUNZA
The University of Arizona
Endometriosis: Stigmatization and the Diagnostic Delay
Location: Pathways

Endometriosis is a chronic gynecological disease characterized by the presence of endometrial tissue outside the uterine cavity. The painful condition affects 10–15% of women of reproductive age globally and 1 in 9 women in the United States. Symptoms of endometriosis include chronic pelvic pain, painful sexual intercourse, physical and mental health changes, and reduced quality of life. Endometriosis can often present symptoms that mirror other gynecologic conditions and contribute to a diagnostic delay. This delay is more prevalent among Latina women. Latinas have been documented as being underrepresented in academic research, and subgroups within this ethnic minority, such as Mexicans, are further underrepresented. Stigma is a social determinant of health that has been identified to impact the health status of individuals living with chronic health conditions. The purpose of the present study is to document the stigmatizing experiences among Mexican immigrant and Mexican-American women living with endometriosis and to what extent these experiences impact their quality of life, social relations, mental health, and physical health. A qualitative design utilizing focus groups will be implemented for data collection, and thematic analysis will be conducted for data interpretation in July. We aim to highlight the importance of addressing stigma, as it relates to Mexican women living with endometriosis, as a way to promote help-seeking behavior and, therefore, reduce the proliferation of the impact endometriosis has on their quality of life.

GISELLE PANTOJA
UCLA
Care-Seeking and Healthcare Experiences of Undocumented and Uninsured Latinas/os within the U.S. Healthcare System
Location: Pathways

The Latino Epidemiological Paradox (LEP) suggests a false sense of overall wellness regarding the health of the Latina/o population—one which obscures the health experiences of undocumented and uninsured Latinas/os. While the scholarship scrutinizes the health experiences of documented and insured Latinas/os, there exists a pertinent knowledge gap; the experiences of undocumented and uninsured Latinas/os maneuvering the American healthcare system are often eclipsed or absent entirely.
This research project will examine the barriers and care-seeking experiences of undocumented and uninsured Latinas/os within healthcare. I will explore these obscured perspectives by asking: How does the lack of documentation and healthcare coverage affect the care-seeking and healthcare experiences of undocumented Latinas/os? This study will utilize qualitative data from in-depth semi-structured interviews to evaluate how Latinas/os' intersectional identities and material realities influence their care-seeking and healthcare experiences. Additionally, it will avail our understanding of the factors contributing to Latinas/os' health outcomes, incorporate their delicate yet critical perspectives, and thus, rectify a gap in the scholarship created by the more traditional and quantitative methods of studying Latina/o health outcomes. This project aims to inform research scholars, healthcare systems, and health policy experts of Latinas/os' quotidian yet grueling health realities to improve their quality of life by making American healthcare an equitable and accessible system.

ANAKAREN PEREZ
UCSD
Pollutants in the Tijuana-San Diego and Mexicali-Imperial Valley Area and their Impact on the Public's Health
Location: Pathways

The northern Mexico cities of Mexicali and Tijuana have experienced a large influx of expansion in the last couple of decades. Processes such as industrialization, border mobilization and agriculture have caused these two cities to increase their development. With the promotion of the cities growth has come an influx of pollutants, negative health implications and the exploitation of natural resources. Pollutants such as black carbon and fine particulate matter have increased in emission due to the implementation of Maquiladoras and the introduction of high traffic rates in these border communities. Maquiladoras are industrial international companies that have settled in Northern Mexico and other areas in hopes of avoiding environmental regulations and exploiting cheap labor. The research hopes to highlight the significant increase of pollutants such as particulate matter, black carbon, carbon dioxide and other toxins in these areas and their promotion of illness such as asthma, arrhythmia, and bronchitis. Using statistical data analysis the study will demonstrate differences between emission of black carbon determined by season and time of day in the selected sites of San Ysidro, Otay Mesa and nearby coastal reference sites. The study hopes to promote the necessity for further research on both of the regions and introduces solutions for the lack of environmental and labor policies implemented.

August 1, 2023 - 10:45 AM Clinical Medicine, Dentistry and Public Health Poster Session 1

FAIZA AHMED
University of Wisconsin-Madison
Utilizing Machine Learning and Persistence Homology to Enhance Detection of Cardiovascular Disease
Location: Optimist

Cardiovascular disease (CVD) remains a global health concern, emphasizing the necessity for effective early identification and prevention strategies. Traditional risk assessment models often lack the ability to capture the complexity and interdependence of various risk factors associated with CVD. This study aims to fill the existing knowledge gap by employing machine learning techniques, specifically persistence homology, to identify patterns and risk variables linked to CVD reliably. The primary objective of this study is to assess whether utilizing persistent homology, a topological data analysis method, can reveal patterns and risk factors for cardiovascular disease in extensive datasets. The hypothesis proposes that introducing persistence diagrams into classification models can improve their performance and provide additional information for identifying group differences. The study seeks to bridge the current gap in precise and effective approaches for recognizing and identifying patterns and risk factors associated with cardiovascular disease at an early stage. By leveraging machine learning algorithms, the aim is to improve CVD detection and enable proactive preventative measures. Developing more accurate and efficient methods for detecting cardiovascular disease can lead to improved patient outcomes, saving lives, and reducing the burden on healthcare systems. Furthermore, the use of machine learning in healthcare contributes to the expanding sector, paving the way for transformative advances in medical diagnosis and treatment approaches. This research adds to reducing the knowledge gap and improving our understanding of effective techniques for maintaining cardiovascular health by addressing the need for early detection and prevention of CVD.

ANA CASTILLO
California State University, Dominguez Hills
Contraceptive Use on College Campuses: Attitudes and Beliefs About Safe Sex
Location: Optimist

Young adults ages 18-24 are particularly susceptible to sexually transmitted infections (STIs) and unintended pregnancies. Previous studies suggest that the consistent use of contraceptives such as condoms and long-term birth control methods can reduce those risks. The current research study will explore what barriers and beliefs prevent young adults from practicing safe sex as preparation for a study at a Hispanic-Serving and Minority Serving Regional 4-year university. The hypothesis of this research study is that the lack of access to contraceptives contributes to risky sexual behavior among college students. This study will use a mixed method approach consisting of online surveys and structured interviews to examine what barriers prevent college students from using contraceptives during sexual encounters. The participants will include both male and female college students from California State University of Dominguez Hills campus during the Fall semester of 2023. The qualitative data collected will include recorded interviews both in person and via Zoom through a series of structured questions. Here, a literature review will be presented, as preparation for thematic analysis to identify recurring patterns, themes, and sub themes within the collected data. At the completion of the study, both qualitative and quantitative data will be analyzed.

AYSA-MONAE COLLINS
California State University, Dominguez Hills
Beyond Statistics: Understanding the Complex Factors Influencing Infant Mortality in Non-Hispanic Black Women with a Focus on Prenatal Care, Diabetes, and Obesity
Location: Optimist

In recent years, the United States has seen an increase in infant mortality rates, notably in underrepresented populations. The weight status of a mother before and during pregnancy has been found to influence various factors that contribute to infant mortality rates. Previous research has identified that maternal black women are at a higher risk of infant mortality and diabetes complications during pregnancy. Recent studies cite prenatal care to reduce the risk of infant mortality. This study examined a variety of infant mortality risk factors, including the trimester prenatal care began, the number of prenatal care visits, the mother's pre-pregnancy weight, the mother's delivery weight, the mother's total weight gain, the identification of pre-pregnancy diabetes, and gestational diabetes. Using the Centers for Disease Control and Prevention, National Vital Statistics System, and CDC WONDER Online Database, 4,200 infant mortality reports in California for 2017-2020 were analyzed for women aged 20-39. Results showed that there were 485 infant mortality reports for non-Hispanic black women who began prenatal care within the first to the third month of pregnancy. 30% of non-Hispanic Black women were identified to have a maternal risk factor for diabetes (pre-pregnancy or gestational) and obesity. Statistical data analysis of pre-pregnancy weight and mothers' delivery weight shows that maternal obesity increases the risk of infant mortality. This study found that early and adequate prenatal care alone does not significantly decrease the risk of infant mortality among non-Hispanic Black women or significantly address the impact of maternal risks such as diabetes and obesity.

LIZ ZAVALA
Eastern Michigan University
Therapeutic and Recreational Experiences from Psilocybin Ingestion
Location: Optimist

Mesoamerican cultures have utilized the power of entheogenic substances for hundreds of years before the scientific interest in the therapeutic potential of psilocybin. In the brief time before federal criminalization, psilocybin was used in a number of studies and trials that demonstrated therapeutic potential. Once psilocybin gained popularity for recreational use in the 1960s counterculture, the Controlled Substances Act scheduled both psilocybin and psilocin in Schedule I, where it remains today. It wasn’t until nearly three decades later that psilocybin was reexamined for its efficacy in several mental illnesses and substance use disorders. With stricter guidelines, safer regulations, and technological advancements, we see a renaissance of psilocybin research and psilocybin-assisted therapies that demonstrate safety and efficacy. Recreational psilocybin use is briefly examined with an emphasis on set and setting. This comprehensive literature review acknowledges both the Indigenous and modern-day contexts of psilocybin. In addition, participant diversity and psychedelic experiences in historically marginalized racial and ethnic communities are explored. More in-depth research on psilocybin is required, but current studies provide preliminary evidence that psilocybin is misscheduled due to its healing properties for patients with multiple forms of depression, near-death anxiety, obsessive-compulsive disorder (OCD), substance use disorders, addictions, and overall mindfulness and spirituality. Furthermore, the lack of racial and ethnic diversity among participants in emerging data is acknowledged, with solutions to this issue advocated for.

August 1, 2023 - 10:45 AM Microbiology, Immunology, Molecular Genetics Breakout II: Panel B

ESMERALDA DELGADO
Roosevelt University
Novel Imidazothiazole-3-carboxamide Analogues and its Antimicrobial Properties
Location: Innovation

Tuberculosis (TB) is a highly infectious, air-borne disease caused by Mycobacterium tuberculosis. Tuberculosis usually affects the lungs but can also affect other parts of the body such as kidney, spine, or brain. In our bid to find New Chemical Entities (NCE) with anti-tubercular activities, we recently identified a novel imizaothiazole-3-carboxamide analogues with excellent anti-TB properties. Herein, we aim to investigate the anti-microbial properties of these novel analogues against eight bacteria strains (four Gram-positive and four Gram-negative bacteria strains) using the broth microdilution method. The MIC (Minimum Inhibitory Concentration) of these analogues will be determined using the colorimetric assay (Neomycin will be used as positive control).

BAILEY HOWE
East Central University
Genetic Optimization of HTLV-1 Oncoprotein Tax
Location: Innovation

Human T-cell Leukemia Virus type 1 (HTLV-1) is the retrovirus responsible for the aggressive cancer, Adult T-cell Lymphoma. Within this malignant evolution, the virally-encoded oncoprotein Tax acts as a transcriptive promoter in the signaling pathways of CREB and p300 through the KIX domain. Despite the extensive research into Tax's interactions with cellular co-activators, potential interactions have yet to be completely explored, likely caused by the difficulty in using conventional molecular modus operandi when characterizing Tax. However, genetically optimizing the oncoprotein possesses the possibility of facilitating further examination into Tax-coactivator interactions. This optimization is executed through the sequential application of three distinct peptide tags: poly-histidine, strep, and a small ubiquitin-like modifier, known as SUMO. This set of modifications includes the integration of two distinct affinity tags, as well as a cleavage site for further purification that provides an enhancement for protein stability. The molecularly engineered gene is then translocated from a T5 lac-operator vector to a previously modified T7 pET expression vector, creating a new recombinant plasmid. In previous procedures, the expression of Tax is purposefully kept within a low range due to the protein's toxicity; However, within the new context of a T7 vector, the induction of IPTG and increased lac-operon transcription warrants further exploration of protein activity and host interactions. This genetically optimized Tax variant and its associated modifications offer a promising platform for deciphering the intricate molecular events underpinning Tax-induced oncogenesis.

AMY RIOS
UCLA
Determining the Role of Mitochondrial Metabolism In Macrophages Over-expressing Angiotensin Converting Enzyme (ACE)
Location: Innovation

Angiotensin-converting enzyme (ACE) is best known for its role in regulating blood pressure through its function in the renin-angiotensin pathway. However, a role for ACE in innate immunity has only recently been discovered. We have previously shown that upon activation, myeloid cells display increased expression of ACE. ACE over-expression in murine macrophages was also shown to cause increased pro-inflammatory gene expression and enhanced mitochondrial metabolism. While these results have been observed in murine cells, the effects of ACE over-expression in human myeloid cells haven’t been evaluated. To assess the role of ACE in human macrophage function and metabolism, we generated THP-1 human monocytic cells over-expressing ACE. Utilizing gene expression analysis and respirometry, we demonstrate that THP-1 cells over-expressing ACE display increased inflammatory activation and enhanced mitochondrial respiration. These results suggest a previously underappreciated role of ACE in regulating human macrophage inflammation and metabolism.

August 1, 2023 - 10:45 AM Psychology and Cognitive Science Poster Session 1

BERNARD AMOFA
California State University, Dominguez Hill
How Emotion Regulation Supported College Students' Achievement and Resilience During the Covid-19 Pandemic
Location: Optimist

Understanding how to generate resilience during a crisis like the COVID-19 pandemic is essential, especially for undergraduate students. Many could not engage with peers and professors to study or to access critical resources on campus. Research has identified positive reappraisal as an effective coping strategy for promoting resilience (Kuhlman et. al., 2021; Li & Hu, 2022). However, little is known about if and especially when positive reappraisal plays a role in the COVID-19 resilience of undergraduate students; longitudinal methods are also lacking (Kuhn et. al., 2022). This study aims to examine if positive reappraisal at the beginning of the semester contributes to academic harm from the pandemic and resilient responding to the pandemic among undergraduate students at an urban college during the height of the pandemic. An online questionnaire was given to a sample of undergraduate students at California State University, Dominguez Hills (N=299), predominantly Latinx (68%) and female (73%), at the beginning and end of two semesters. The survey measured positive reappraisal, academic harm from the pandemic, grit, and resilient responding to the pandemic at both time points; multiple linear regressions were conducted with positive reappraisal at T1 as the predictor of the dependent measures (i.e., pandemic academic harm, pandemic resilience, and grit) at T2. Test results supported our hypotheses that positive reappraisal would predict less academic harm from the pandemic, more grit, and more pandemic resilience. This study provides further evidence that positive reappraisal supported the academic function and resilience of urban college students during the COVID-19 pandemic.

SOFIA GUTIERREZ JOHNSON
Cal Poly Humboldt
The Impacts of Covid-19 on the family unit of kindergarten students
Location: Optimist

The Covid-19 pandemic was an extremely chaotic and precarious time for many individuals, especially families with children. While there has been considerable research demonstrating how adults were negatively impacted by anxiety and social isolation, little research has been done to study the impacts of Covid-19 on the developing person, namely those ages 0-5. In terms of development, research has been focused on adolescents and teenagers, leaving a large gap in understanding how young children managed stress and disorder during this time. My research will focus on the emotions of parents whose children are integrating into the school system for the first time, having missed out on some major developmental milestones associated with peer engagement. Questions will be associated with their child's preparedness academically and socially as well as emotion levels associated with this transition. I will be surveying parents whose children entered into kindergarten and transitional kindergarten during the 2021 and 2022 school years.

OLIVIA ORTIZ
California Polytechnic State University Humboldt
College Students' Mindfulness and Resilience in Relation to Academic and Psychological Outcomes
Location: Optimist

Many college students experience chronic or overwhelming stressors. Students who develop resilience, an individual's capacity to persevere in the context of adversity, may be more equipped to mitigate the harmful effects of stress. Mindfulness, a non-judgmental present-moment awareness, can also reduce stress. Previous research indicates that mindfulness and resilience are positively correlated and are predictors of college students' psychological well-being. Academic motivation also influences students' stress and well-being, yet the relationships between mindfulness, resilience, and academic motivation are largely unknown. This study investigated dispositional mindfulness, an individual's innate propensity to be mindful, and resilience in relation to both academic outcomes (i.e., test anxiety, academic performance, and academic motivation) and psychological outcomes (i.e., perceived stress and psychological well-being). We hypothesized that dispositional mindfulness and resilience would positively correlate with academic motivation and psychological well-being and negatively correlate with test anxiety and perceived stress, respectively. Regression models analyzed mindfulness and resilience as predictor variables and psychological and academic outcomes as criterion variables. Approximately 50 college students completed a cross-sectional online survey. Preliminary Pearson's correlational analyses indicated that mindfulness and resilience were positively correlated, and both were positively correlated with psychological well-being. Mindfulness, but not resilience, was negatively correlated with cognitive test anxiety. Preliminary analyses found insufficient support for the relationship between mindfulness, resilience, and academic motivation. A larger sample size is needed to be more confident in the results. Future research can examine the constructs in this study before and after the implementation of mindfulness interventions.

August 1, 2023 - 10:45 AM Psychology and Cognitive Science Breakout II: Panel B

ANGIE DELGADO
Roosevelt University
The Effects of Post-Traumatic Stress Disorder and Substance Abuse: Child and Adolescent Integration Into Society
Location: Discovery

Traumatic events are not editable. No matter the age nor gender, trauma can occur at any given time. Unfortunately, “3 million children and adolescents experience some form of the traumatic event” (Schwarz & Perry, 1994). Children who suffer from trauma show deficits in learning and language development, which may lead to additional academic support. The problem I want to research is how traumatic events affect adolescents’ integration into society. Specifically, how substance abuse and racial/ethnic differences contribute to trauma stressors from an ecological perspective. The methodology used to conduct this study is qualitative data from past research and peer-reviewed journals. The results demonstrated that the presence of a strong relationship with friends and family, in-depth psychological interventions, exposure-based therapy, cognitive behavioral therapy, and TF-CBT [trauma-focused cognitive behavior therapy] have been effective treatments for children and adolescents who suffer from trauma and substance abuse.

GABBI FIGUEROA
University of Arizona
Collectivized Suffering and Post-Traumatic Growth
Location: Discovery

Cultural psychological research on the ways individuals conceptualize experiences of suffering has largely focused on cross-cultural analyses between groups from vastly different backgrounds and ideologies. Previous cross-cultural approaches provide differentiations between cultural groups and their ideologically reinforced interpretations of suffering but lack salient information on how individuals conceptualize and grow from personal suffering differently than their identified group. This study goes beyond previous cultural psychological studies to take a multicultural approach and diversify the psychology of suffering by comparing adversity experiences of minority and majority group members within the diverse culture of the United States. Understanding the suffering underrepresented individuals experience is needed due to a lack of psychology of suffering literature exploring adversity experiences for those outside the majority population (white, cisgender). Focusing on the ways minority group members conceptualize personal suffering allows for an in-depth analysis of thematic struggles for group members and facilitates the discovery of culturally characterized methods for nurturing growth from adversity. Data for this study is sourced from an experiment conducted by my PI regarding the impact of historical identity consciousness on the collectivization of personal suffering with N=81 where participants were surveyed to write about a stressful life event and prompted to consider their group identity when evaluating their stressful experience. Utilizing a thematic coding statistical analysis to interpret personal suffering narratives, we hypothesize minority (vs majority) group members will display more post-traumatic growth as a consequence of more collectivization of suffering present within their narrative writing.

NICK LAMBERT
Montana State University
LGBTQ+ Undergraduate Resilience and Success
Location: Discovery

In recent LGBTQ+ history, research has evaluated the affects of trauma and academic achievement which suggests resilience may have influence over queer-student performance. Across the literature, there are increasing numbers of all students seeking psychological assistance from their universities so it's becoming more feasible to understand resilience than to eliminate risk. This inquiry examines the relationship between resilience, childhood adversity and academic success of LGBTQ+ undergraduate students in their ability to predict academic success based off university data. In efforts to better support undergraduate students, highlighting the strengths of marginalized populations is just as important as finding out in which area they need greater support and access to resources. It is hypothesized that Lesbian/Gay/Bisexual undergraduate students will have similar experiences and scores of heterosexual/cisgender undergraduate students leveraging greater academic success by comparison of those that identify as Transgender, Queer or other fluid identity. Data will be collected from participants via participant pool at a public university, using the 25-item Connor-Davidson Resilience Scale (CDRS-25); Early Trauma Inventory Self Report-Short Form (ETISR-SF) and self reported demographic information which includes undergraduate GPA. Data collection is currently in progress and expected to be completed by October 2023. This study has great implications on the avenues universities can pursue for further research. Understanding which populations are succeeding despite life-setbacks and which ones need more support gives schools information to create stronger networks for supporting their student populations.

ELIZABETH YEE
University of Arizona
Reporting Back Health Information About Historical Trauma to an Environmental Justice Community
Location: Discovery

This study identifies and implements strategies for reporting back health information about historical trauma to a community. Over 40 years ago, residents of the southside of Tucson, Arizona experienced water contamination. This experience which can be described as chronic environmental contamination was caused by military/industrial activity in the area. This led the area to become a superfund site as part of a program that aids in the cleanup of contamination. To this day, although the water has been declared safe by city officials, the contamination has remained a concern for the community (which today predominantly consists of lower-income Latinx families). Schmitt (2023) conducted a recent study that revealed significant findings related to exposed residents' psychological/physical outcomes following the contamination. This experience takes on the form of historical trauma. Historical trauma occurs when specific groups of people experience traumatic events that may be associated with negative psychological/physical outcomes. Communicating the study's results is imperative in order to promote the community's well-being. Health information has been reported through health communication and environmental risk strategies; however, there is a lack of research on the report-back process of health information related to historical trauma. Utilizing various strategies and through collaborative efforts, we hope to identify the best practices for communicating health information. We will do this by creating a fact sheet and qualitatively gauging the community's response to the health information being reported.

August 1, 2023 - 10:45 AM Psychology and Cognitive Science Breakout II: Panel I

SOFIA CANNON
Westminster University
The Nuances to Latinx Cultural Values and Gender Norms and Relationship Satisfaction
Location: Catalyst

Much of the literature on Latinx relationship satisfaction speculates that Latinx cultural values (i.e. familismo, machismo, caballerismo, and marianismo) and gender roles affect romantic relationship satisfaction contrastingly ranging from lower relationship satisfaction and intimate partner violence (IPV) to having very positive effects and increasing relationship satisfaction. To briefly define these values, traditional machismo is the belief of toxic masculinity where men should be dominant and in control. Caballerismo, often examined as a softer dimension to machismo, revolves around men protecting their spouse and family. Marianismo is the belief that women should be chaste and sacrifice themselves for their families. Lastly Familismo, is the value that cultivates unconditional support and respect within family members and puts your family's needs over your own. The gap in the research has been failing to examine these cultural values and gender roles together to paint a fuller picture on how they affect romantic relationships satisfaction for Latinx individuals. In this research proposal, I will examine the Latinx cultural values of machismo, caballerismo, marianismo, and familismo and examine them alongside each other to see how they intricately affect relationship satisfaction for heterosexual, Latinx, U.S. born first- generation couples.

GABRIELA PERALTA
University of Colorado Denver
Barriers To Mental Health Care Among the Latino Community
Location: Catalyst

The organization National Alliance on Mental Health Illness says that “more than half of Hispanic young adults ages 18-25 with serious mental illness may not receive treatment” (National Alliance Mental Illness, 2018). In addition, an estimated 33% of Latino and Latina adults with mental illness receive less treatment each year compared to the U.S. average of 43% (National Alliance Mental Illness, 2018). This research responds to the growing concern about Latinos’ underutilization of mental health services. My faculty research mentor and I researched the types of barriers local Latino and Latina individuals encounter when taking care of and/or maintaining their mental health. We employed qualitative research methods, specifically semi-structured interviews, to determine if Latino individuals in Colorado are experiencing mental health care barriers. This study will contribute to our understanding of Latino mental health care and provide a basis for the development of new interventions to help this population access mental health services. Ultimately, the purpose of this study is to better understand the state of Colorado’s treatment of and barriers to Latino mental healthcare.

BERNARDA TORRES
University of Minnesota
Socio-Economic Factors Predicting Psychiatric Symptoms within the Hispanic/Latine community
Location: Catalyst

The population growth for Hispanics/Latines is rising. It is estimated that by 2050, a quarter of the United States (US) population will be Latine (De Andrade & Viruell-Fuentes, 2011). Disparities exist across race and ethnicity in the treatment of psychopathology (Simpson et al., 2006). Despite past studies finding a similar prevalence rate for anxiety and depression within non-Hispanic Whites and Hispanics/Latines, this ethnic group has remained underserved when it comes to mental health services (Woodward et al., 2012; De Andrade & Viruell-Fuentes, 2011). The objective of this study is to increase understanding on how psychiatric symptoms manifest in four different racial/ethnic groups; non-Hispanic Whites (n=2595), White Hispanics/Latines (n=270), non-Hispanic people of color (POC) (n=831), and Hispanics/Latines who identify as POC (n=247). Controlling for demographic variables, we aim to examine the effects of race and ethnicity on symptoms of psychopathology (anxiety, depression, and the interpersonal dimension of schizotypy). Analyses are ongoing.

MATEO VALLEJO
The University of Texas at Austin
Birth Order and Machismo: A Literature Review on the Effects Birth Order has on the Continuation of "Machismo" Personality Traits in Mexican-American Males
Location: Catalyst

“Machismo” has been shown to increase the risk of intimate partner violence, depression, and harmful coping strategies. Despite growing awareness and exposure to mental health resources, negative machismo traits in Latin men continue to affect themselves and others in their community. With the growing trend of research into the effects of machismo within the Mexican-American communities, looking at the relationship between Adler’s Birth Order theory and machismo provides a unique opportunity to inform the literature on possible causes of the degree of machismo in Mexican-American men. Through an extensive search through peer-reviewed literature, this review synthesizes existing models for the development of machismo in Latin men, points out the strengths and weaknesses of each model, and considers other relevant research. Additionally, this article considers Adler’s Birth Order theory to create a new model for machismo development. This model considers father-son relations, the effects of “familismo,” “marianismo,” parental strategies, and Mexican-American cultural values. This model will be helpful for further research on the relationship between birth order and “machismo” in Mexican-American siblings.

August 1, 2023 - 10:45 AM Sociology and Public Affairs Poster Session 1

CELINA BRIDGES
California State University, Stanislaus
Ageism & Covid 19: A War of Perception
Location: Optimist

Older adults are subject to generalizations, stigmas and policies that socialize and restrict them from obtaining a quality and engaging life. Since COVID-19 those 65 and up have become accustomed to such factors of devaluation, which may have promoted disengagement or withdrawal from their previous societal functions. In this project, the experiences of older adults who sheltered in place during the pandemic are explored and analyzed. Using qualitative interviews with older adults, I will address the following research questions: 1) How does one feel about lockdown measures due to a worldwide pandemic? 2) How was one's quality of life effected? and 3) What was the role media outlets may have played in othering or promoting trauma within an individual?

JAVIYAN JONES
California State University, Dominguez Hills
The Connection Between Opportunity Zones and Gentrification: Analyzing the Negative Effects on African American Communities Located in California
Location: Optimist

In 2017, a tax law was implemented that created a tax break in order to encourage investment in low-income areas labeled as "opportunity zones." However, much of the prior research predominantly highlights the downsides of the program, stating that it causes more harm than good to low-income communities around the country. These studies argue that the program prioritizes the creation of affordable housing and jobs for high-profile investors, rather than effectively benefiting those who actually reside in the opportunity zones. This study aims to provide an empirical examination and valuable insights into the effects of the Opportunity Zone program, specifically on African Americans in the low-income communities of California. The research argues that, due to the law being exploited by high-profile investors, the communities that were originally intended to be helped are not receiving the intended assistance. Furthermore, the study addresses the program's contribution to the process of gentrification, which often leads to the displacement of long-standing residents from low-income communities, replacing them with wealthier individuals. To achieve these objectives, we will conduct a thorough review of existing studies to gain a comprehensive understanding of how this law has been implemented and the effects it has had on the communities. By analyzing the available data and examining the experiences of African Americans in low-income areas of California, this study will shed light on the specific challenges and adverse consequences they face as a result of the Opportunity Zone program.

DYLAN KURZ
California State University, Long Beach
Sweeping the Crisis: The Criminalization of Houselessness in Long Beach, California
Location: Optimist

As of 2022, 3,296 individuals were unhoused in Long Beach, California. Among this population, 69 percent (2,287) were unsheltered, meaning they do not reside in a homeless shelter or vehicle. This is a 22 percent increase from the previous count in 2021, which is one of the largest spikes in recent history (LongBeach.Gov 2022). Many unsheltered folks resort to the creation of "informal settlements" around Long Beach in order to form networks of support. In response, the city has conducted police sweeps to manage its houseless population, thereby criminalizing the crisis of houselessness. This study focuses on the criminalization of houselessness in Long Beach, California by examining the purported reasons for police sweeps, their social impacts, and the way these sweeps affect those experiencing houselessness. This study asks: are sweeps an effective way to manage homelessness? If so, to what extent, for whom, and for what reason? How do unhoused individuals experience police sweeps and what are their lasting results on these communities?

August 1, 2023 - 1:30 PM Anthropology, Gender, and Ethnic Studies Breakout III: Panel C

PAIGE EDWARDS
Southern Methodist University
Re-Imagining Paradise: The Impacts of the Illegal Annexation of Hawai'i & Tourism on Native Hawaiians
Location: Pinnacle

This literature review explores the historical context of Hawaiian sovereignty and the subsequent impacts of the illegal annexation of Hawai'i on Native Hawaiians. The Hawaiian sovereignty provided a framework of empowerment for Native Hawaiians. It highlights the emphasis on education and the high literacy rates achieved by Native Hawaiians. Queen Lili'uokalani's advocacy efforts, such as the Queen Lili'uokalani Trust and her initiatives for Hawaiian girls' education, demonstrate her commitment to supporting the welfare of Native Hawaiians and preserving their cultural heritage.

However, the United States illegally annexed Hawai'i. In 1893, the Committee of Safety orchestrated a coup, backed by armed forces, which violated international law and the Treaty of Friendship between the United States and the Hawaiian Kingdom. The illegal annexation led to the overthrow of the Hawaiian monarchy and the recognition of Hawai'i as a U.S. state.

The research further explores the impact of tourism on Native Hawaiians. The tourism industry resulted in the marginalization of Native Hawaiians through the commodification of their culture. The significant number of tourists visiting Hawai'i each year has caused a demographic imbalance, where Native Hawaiians have become a minority within their own lands.

By examining the historical events and ongoing consequences, this research seeks to develop a historical analysis and inform readers on challenges Native Hawaiians have faced due to the illegal annexation and tourism industry. The goal of this research is to raise awareness on the Hawaiian sovereignty and ethical tourism.

NAOMI GALINDO GALARZA
Kansas State University
Islam, Post-Soviet Central Asia, and the new Secularist way: A Close Examination on the Progress of Women's Rights in Kyrgyzstan
Location: Pinnacle

Religion is an important aspect of people's lives. This is no different in the nations of Central Asia. The nations of Kazakhstan, Tajikistan, Uzbekistan, Turkmenistan, and especially Kyrgyzstan, all have considered Islam a part of their identity this was changed once Kyrgyzstan was absorbed in 1936 as religion became prohibited under Soviet role and mosques became factories. The aim of this paper is to examine how the Soviet Union played a role in establishing a different social structure than that previously set by Islamic beliefs; it will also examine the cultural concept of bride kidnapping, which is a practice that was ongoing before Kyrgyzstan joined the Soviet Union. When Kyrgyzstan became part of the USSR, bride kidnapping was banned along with religion, which made it hard to continue practicing Islam. The tradition of bride kidnapping has been brought into question on whether it violates human rights, especially women's rights in Kyrgyzstan. Even though it's a practice that has been around for centuries, people debate whether this practice is holding back the democratic progress of Kyrgyzstan. Women's rights in Kyrgyzstan have been closely examined since bride kidnapping was reinstated, and previous research shows it has had a negative impact on society because it has led women to commit suicide. Therefore, this tradition has inhibited Kyrgyzstan's transition into a democratic nation.

SARAH HAILE
University of Minnesota - Twin Cities
Exploring the Link between Tribalism and Economic Development in Africa
Location: Pinnacle

This literature review examines the relationship between tribalism and the economic history of African development post colonial rule. Tribalism can be defined as structured social formations that exude loyalty within individuals through associated ties (Ekeh 1990). Pre-Colonial rule, African societies naturally produced tribes that were governed through indigenous systems of governance. However, following Africa's "Great Scramble" in the early twentieth century, many European colonialists destroyed these structures by subsuming them under an exploitative form of eurocentric rule. In other words, Europeans created strategies designed to extract resources and maintain control over African societies. A characteristic in all the pernicious structures of rule was the notion of tribal favoritism, in which one tribe is frequently favored over others in marketplaces of scarce resources (Gluckman 1960). Triablim has caused a host of problems for emerging Africa nations both politically and culturally. For instance, new age tribalism has been linked to a number of cases of violence among tribal groups. A well known example, is the Rwandan Genocide of 1994 among the Tutsi and Hutu groups. Tribalism impedes economic progress by generating social and economic divisions that limit cooperation and collaboration among varied groups. This can lead to a breakdown in social cohesion, making the establishment of institutions that promote economic growth and development more challenging.

August 1, 2023 - 1:30 PM Atmospheric and Environmental Science Poster Session 2

ANTHONY DELGADILLO SALAS
California Lutheran University
Macroscopic Charcoal Analysis of the Mayan Cultural-Ecological Landscape in Laguna Cuzcachapa, El Salvador
Location: Optimist

El Salvador is historically identified with high rates of ecological degradation, both in prehistoric and modern times. The most striking paleoecological record of anthropogenic environmental change produced to date is from Laguna Cuzcachapa, a small lake 650 meters from the famous Mayan archaeological site of Tazumal. The Maya were revolutionary with Mesoamerican grandeur and social stratification. As a result, prior studies from Laguna Cuzcachapa have identified layers of microscopic charcoal together with pollen from crops including maize. Reported here is a 3700-year record of fire history, which spans the period from the Maya Preclassic through the Postclassic and continues through the 20th century. During this nearly 4000-year period, evidence of human impacts is represented except during two significant periods of demographic collapse: The Tierra Blanca Joven Eruption in 539/40 CE and the European Settlement in the early 1500s. After the TBJ Eruption, it resulted in a demographic collapse which decreased fire rates. Once populations increased, the European Settlement began which brought pandemics to the Maya resulting in another demographic collapse. After the European settlements enacted fire suppression strategies, there were fewer rates of fire. Chalchuapa, El Salvador has undergone anthropogenic changes in its environment, and human-induced wildfires, supported by macroscopic charcoal records, indicate that Mayan settlements assisted with ecological degradation before modern times. Future studies include macroscopic charcoal and pollen analysis in Laguneta El Trapiche, El Salvador. Having both macroscopic charcoal and pollen records in Laguneta El Trapiche will enhance the paleoecological records of Chalchuapa, El Salvador.

ANGEL PRADO
California Lutheran University
A Chronicle of the Paleoecological Archives of Black Lake Pier
Location: Optimist

The central California regions of Santa Barbara and San Luis Obispo counties are known well as a biological hotspot. However in terms of paleoecological record of their histories, very few in depth projects have been conducted. New information has large potential here with one high profile record being wildfire presence. Since 1850, California has not experienced fires of national concern until the years 2018 to 2022 which saw a resurgence of crown fires that hosted 7 out of the top 10 fires in history. The location chosen to search for proof of these events in record is Black Lake Pier amidst the dune lakes in San Luis Obispo. An 8 meter core from this location can allow analysis of proxy data such as with charcoal counts, loss on ignition, and magnetic susceptibility. The methodology for obtraining these results involves first cutting one half to observe trends going down and then cutting the cores every 1-2 centimeters. Those labeled fractions will then have pieces cleaned with hydrogen peroxide so that they can be filtered and looked under a microscope for charcoal quantities. The results up to now with this show that large fires are not simply man-made and have occurred in cycles of growth and reduction. Putting all these together will enable a timeline of ecological activity to be created that goes back thousands of years. A record that can work as a guide for aiding proper ecological analysis and human development in accordance with balanced prosperity.

LUCERO TORRES OJEDA
University of California, Santa Barbara
Assessing Integration of Water Quality Metrics in Groundwater Sustainability Plans: Implications for Disadvantaged Communities in the San Joaquin Valley
Location: Optimist

Low-income and marginalized communities disproportionately face the heavy burden of environmental health hazards. Groundwater used for drinking water can be contaminated by agricultural runoff and heavy chemicals such as nitrates and cancerous contaminants like arsenic and chromium-6. With a growing water crisis in the U.S, California's frequent long-term droughts, and a long history of poor water management, groundwater quality in the San Joaquin Valley has been negatively impacted. To combat this water crisis, California passed its landmark Sustainable Groundwater Management Act (SGMA) in 2014. SGMA requires local officials to form Groundwater Sustainability Agencies (GSAs) and have them create Groundwater Sustainability Plans (GSPS) for their designated basins, with the intent of reaching sustainability for groundwater resources by 2040. Although there has been previous research on the success of SGMA's recent implementation and necessary inclusion of marginalized stakeholders in groundwater management planning, there has not been a thorough review of how GSAs are including water quality metrics to improve the water quality in disadvantaged communities. This study aims to assess how well GSPs are integrating water quality metrics to meet the needs of disadvantaged communities in the San Joaquin Valley. Using an interdisciplinary approach, this study analyzes both geospatial data and groundwater management plans to analyze what water quality metrics have been implemented to improve water quality conditions of impacted disadvantaged communities. The ramifications of a lack of clear water quality metrics for GSPs serving disadvantaged communities pose a serious threat to a basic human right: access to clean drinking water.

August 1, 2023 - 1:30 PM Biology Breakout III: Panel C

JENNAH BROWN
Cal Poly Humboldt
Carbohydrate Phloem Loading Mechanism in Nicotiana Tabacum via the Downregulation of Sucrose Transporter 1
Location: Odyssey

Food security has become a growing concern as we look to the future. Having a more thorough understanding of plant functioning can help to improve the efficiency of crops and their response to changing environmental conditions. In this study, we seek to outline specific carbohydrate phloem loading mechanisms in Nicotiana tabacum by intentionally downregulating sucrose transporter 1 (SUT1). Phloem loading is a significant mechanism utilized in plants to transport sugars and amino acids from photosynthetic sites to conducting sieve tubes. This process is fundamental to growth, storage, and other significant plant functions. The cellular structure of N. tabacum resembles those of major crops and can be utilized as a model species for the transformation technique to better understand physiological mechanisms. We measured SUT1 mRNA concentration in transformed leaf samples to analyze the effectiveness of downregulation. Downregulated N. tabacum samples showed phenotypic chlorosis made evident by the accumulation of carbohydrates in leaf tissue. To quantify the difference among SUT1 downregulated N. tabacum and wild type, we performed a soluble carbohydrate analysis. Accumulation of carbohydrates among downregulated N. tabacum is suspected to result in decreased photosynthetic efficiency. Therefore, photosynthetic rates were measured for downregulated N. tabacum and wild type. The results indicate that downregulated N. tabacum utilized apoplastic phloem loading and when manipulated, affects sucrose transport and photosynthetic abilities.

ZOË KARWOWSKI
University of Minnesota - Twin Cities
Disease Ecology of Apennine Wolves in Maiella National Park
Location: Odyssey

Infectious diseases in wildlife populations are becoming an increasing concern in conservation due to their ability to act alone or in combination with other factors. European carnivores are especially vulnerable to infectious diseases due to the isolated nature of their populations and interactions with domesticated dogs and humans. One disease of concern is Canine Distemper Virus (CDV), which has been destroying native wolf populations throughout Europe. These outbreaks are initiated by contact with infected feral and domestic dogs, and future outbreaks of CDV are expected to occur. Maiella National Park (MNP), located in South-Central Italy, is at particular risk because it is near parks that have had outbreaks, has a large feral dog population, and many visitors bring their dogs to the park. For this project, MNP collared 18 European wolves and collected location and activity data on each animal. QGIS was used to visualize home ranges and the movement of wolves in the park. Additionally, a social network and susceptible-infected-recovered (SIR) model was developed using Program R to predict the spread of CDV in the MNP wolf population. We found that neighboring packs had substantial overlap which could allow CDV strains to quickly spread, with potentially devastating outcomes. These models will provide crucial insight into the disease dynamics of the wolf population in the park and help MNP with its conservation and management efforts. Further, visualizations of our project results will be utilized by MNP to educate park visitors about the effects of bringing unvaccinated dogs into the park.

LAUREN SIQUE
UC Davis
Insect Individuality: Intraspecific Variation in Cognition of Mealworms
Location: Odyssey

Within a population of conspecific individuals, genetic variation is essential for natural selection and entails not only morphological variation but also cognitive and behavioral variation. Levels of cognition, as well as its intraspecific variation, are observed widely in a variety of species. However, this is disproportionately less documented among insects. This study aims to contribute to further understanding of intraspecific variation in cognition among mealworms (Tenebrio molitor L.). We will use a laboratory colony of mealworms in a series of experiments crafted to assess individual cognitive capability of individuals raised in solitude or in small groups. In the first experiment, mealworms will be placed individually in a maze with food placed at the completion point. In a second experiment, we will determine whether individuals will be able to associate surface textures with food rewards. Time needed to find food in a maze and weight gain as a function of food consumption (and effort spent on finding food) will be assessed. These results will be used to discuss levels of intraspecific variation in cognition and factors affecting it. In bettering our understanding of mealworms as individuals, we hope to expand the overall perspective on insects, as we (as humans) tend to view all insects as identical beings. For the mealworm, this could have ethical and practical implications for how they are used in research and how they are managed as pests.

ELIJAH WOODWARD
East Central University
Structure-Based Drug Design Targeting the Lipoprotein Carrier LolA
Location: Odyssey

Outer membrane lipoprotein carrier protein (LolA) transports lipoproteins from the inner membrane to the outer membrane in pathogenic bacteria. It has been demonstrated that LolA knockdown cells in Borrelia burgdoferi, the causative agent of Lyme disease, prevents cell growth which suggests that LolA could serve as a target for drug development. Additionally, LolA is present in other tick-borne pathogens such as Francisella (F. philomiragia and F. tularensis) and Rickettsia bellii which cause Tularemia or “Rabbit Fever” and typhus respectively. The structures of LolA from Borrelia and Francisella were determined using X-ray crystallography and the resulting models used for in silico screening to identify potential inhibitors. In addition, LolA proteins from Borrelia, Francisella and Rickettsia were utilized for Fragment-Based Drug Design experiments in an effort to identify small molecule scaffolds that may serve as a basis for the development of inhibitors that bind with high affinity.

August 1, 2023 - 1:30 PM Biology Poster Session 2

MATHEW APARICIO
Cal Poly Humboldt
Degredation of Marks and Tags of Elephant Seals Over Time
Location: Optimist

The marking and tagging of pinnipeds is important because of the ecological information it can tell us. Being able to track and monitor populations allows us to aim our ecological efforts in a more precise way and the basis of this comes from being able to observe markings and tags. The issue that arises is the natural degradation of identifying marks. It is critical that we assess if whether it is relevant to apply identification marks to pinnipeds as they molt annually. By tracking the depreciation of marks over time we can report the effects that the environment has on identifying marks and if we can justify the application of these identifying marks.

ANDREA GOMEZ
University of California, Santa Barbara
Ecological Connectivity of Terrestrial and Oceanic Nearshore Ecosystems
Location: Optimist

In the unique coastal environment of Southern California, the movement of large wildlife between intertidal and terrestrial habitats holds profound ecological implications. Understanding these patterns is vital for assessing the effects of human activity and seasonal changes on animal behavior and resource distribution. This study aims to investigate the energetic connectivity between intertidal and adjacent terrestrial ecosystems in Santa Barbara County, focusing on the Vandenberg Space Force Base and the Jack and Laura Dangermond Preserve. More specifically, this study will concentrate on baseline movement patterns of animals between intertidal habitats, such as beaches, rocky intertidal zones, marshes, and nearby terrestrial habitats. By deploying an array of motion-triggered trail cameras along access-restricted coastlines, we captured valuable insights into the foraging behavior and movement of terrestrial consumers, including coyotes, deer, and feral pigs, within intertidal habitats. The significance of this research lies in understanding the phenomenon of animal-vectored subsidies, where resources are transferred between different ecosystems through animal-mediated movement. Historically, the Southern California coastline has benefited from marine-to-terrestrial subsidies, with nutrient flow from productive kelp forests to less productive beach and coastal scrub habitats. However, the increasing human barriers, such as roads and development, have disrupted this natural flow of resources. By investigating the impact of human activity and seasonal changes on animal movement and foraging behavior, this study sheds light on the alterations in animal-mediated resource transfer. Our findings have the potential to inform conservation efforts and ecosystem management strategies along the Southern California coastline.

ALEXIS HERNANDEZ
Cal Poly Humboldt
Analyzing the influence of aquaculture-related habitat modification on elasmobranch abundance and predation intensity
Location: Optimist

Recent breakthroughs in artificial intelligence (AI) and the breadth of its application, motivated us to use AI for marine species identification and analysis. Using an open-source ‘do-it-yourself’ AI software platform developed by NOAA called VIAME (Video and Image Analytics for Marine Environments), we will assess the effectiveness of using AI and machine learning to identify marine species from video surveys in Humboldt Bay, California. Humboldt Bay produces ~70% of California's oysters, and is home to many ecologically and commercially important marine species. With the growth of oyster aquaculture in the bay, the resultant habitat modification may provide an additional source of shelter for benthic fish and invertebrates, and may influence species’ habitat use. Using BRUVS (Baited Underwater Video Systems) to collect video footage of marine species present in and out of aquaculture-modified habitat in Humboldt Bay, we will compare how efficient VIAME is compared to human observers in identifying species in our video surveys. This will allow us to determine whether VIAME is a useful tool that can save time and resources in analyzing BRUVS footage, a common underwater survey method.

EDITH SOLORIO-RODRIGUEZ
Cal Poly Humboldt
Potential Barnacle (Balanus crenatus) Facilitation of Bryozoan (Watersipora sp.) Larval Settlement & Invasion
Location: Optimist

Many non-indigenous species have been transported globally through anthropogenic vectors such as hull-fouling via commercial shipping vessels. Efforts have been made to prevent non-indigenous species from being able to travel on these ships, like the use of copper (Cu)-based antifoulants. However, some species like Watersipora sp., have been documented to have a tolerance to Cu. Thus, this marine-encrusting bryozoan has been able to invade estuaries and bays worldwide. The Eureka Docks within Humboldt Bay is one of the numerous locations that Watersipora sp. has invaded. It was previously observed that Watersipora sp. had higher success when settling in the presence of the barnacle Balanus crenatus. A barnacle that is highly abundant at the Eureka Docks. Our research aims to see if this barnacle plays a facilitating role in the larval settlement of Watersipora sp.. A large amount of research has been previously done on the role Watersipora plays in facilitating the transport of other non-indigenous marine species. However, little to no research has been done on what species facilitate Watersipora's success. Especially research that allows for the natural settlement of the larvae outside of the lab.

August 1, 2023 - 1:30 PM Chemistry and Biochemistry Poster Session 2

MATÍAS CHAPMAN
Cal Poly Humboldt
Organic Photovoltaics
Location: Optimist

Traditional photovoltaic (PV) substrates are primarily based on crystals of inorganic compounds (e.g., silicon). The inorganic PV substrates have proven to be reliable and efficient and are used in a wide variety of applications from providing power to street signs to powering the International Space Station. Traditional, inorganic based solar cells, however, are relatively expensive to manufacture (although costs are declining) and have limitations in terms of their flexibility, i.e., they are rigid. Solar cells manufactured using OPV compounds are less expensive to produce and can be made on a flexible plastic sheet. They have not yet been found to be as efficient and robust as inorganic PVs, but these differences are being reduced every year. The efficiency of a solar cell becomes less important when one considers the cost of manufacturing and the versatility of having a flexible solar cell. The goal of this project is to use computational chemistry to identify new possible OPV substrates. DFT calculations will be carried out using Spartan and Gaussian computational packages locally and at the San Diego Supercomputer Center. The calculated HOMO-LUMO gaps will reveal which compounds are best suited to pursue for actual synthesis.

ANGELA ROJAS-MERCHAN
Wesleyan University
Synthesis of Benzoldioxids for Ring-Opening Metathesis Polymerization of Water-Soluble, Degradable Polymers
Location: Optimist

Ring-Opening Metathesis Polymerization (ROMP) is a fast reaction that frequently uses ruthenium-based catalysts to produce polymers from cyclic olefins. Ring strain relief is the reaction's driving force, so it performs best when monomer ring strain energy is high. Under living ROMP conditions, polymer chains grow at relatively the same rate with no termination or transfer. As a result, living ROMP typically yields narrow molecular weight distributions. One of its limitations, however, is the common use of norbornene, a high strain cyclic olefin. Norbornene works well with ROMP due to its structure, but reliance on norbornene-derived polymers limit the range of properties. For example, it is time consuming to make these polymers water soluble, therefore limiting their biological applications. From an environmental standpoint, their inability to degrade is also a cause for concern due to the plastic waste crisis that continues to have adverse effects on humans and Earth’s ecosystems. Here we synthesize anti- and syn-benzoldioxids as alternative monomers to norbornene. Due to their high strain energy, these monomers are promising candidates for living ROMP, and the polymers they form have the potential to be water soluble and readily depolymerized. Our experimental design focuses on the synthesis of syn-benzoldioxid from the starting material 1,4-cyclohexadiene, polymerization with Grubbs Third Generation Catalyst, modification, and lastly, depolymerization.

JULIAN SANCHEZ HERNANDEZ
California Lutheran University
Synthesis of N1-Hydroxy-N1-succinyl cadaverine (HSC) and succinyl cadaverine (SC):Model substrates for the DesD-catalyzed Biosynthesis of desferrioxamine Siderophores
Location: Optimist

With antibiotic-resistant bacteria on the rise, it is crucial that new types of antibiotics become readily available and intensively studied; from both mechanistically and structurally. NIS synthetases are a family of proteins found in numerous pathogenic bacteria that are proving themselves to be valuable drug candidates through small-molecule inhibition. This protein class is linked to the bacterial virulence because NIS synthetases, in this case DesD from Streptomyces coelicolor, are enzymes that synthesize polyhyrdoxamate siderophores, which are dimeric or trimeric metabolites used by the bacterium to acquire iron from the environment then transport it into the cell as a vital nutrient. Our long term goal, using synthetic chemistry and enzymology, is to fully characterize the DesD active site so that small molecules can be designed to disrupt the absorption of iron they need for survival. We have two target substrates, N1-hydroxy-N1-succinyl cadaverine (HSC) and succinyl cadaverine(SC). HSC has been prepared on the milligram scale via modification of a seven step literature synthesis involving three protecting groups; kinetic studies on DesD using isothermal titration calorimetry (ITC) were recently reported through a collaborative effort at CLU. A focus of the present work is multi-milligram synthesis of SC from N1-Boc cadaverine, N2-succinylation, and final deprotection of the N1 -Boc protecting group. Access to SC will allow for further knowledge of DesD macrolation bond formation in the absence of the N-Hydroxy functional group. In future studies, our synthetic route will be to prepare desferrioxamine D, (DfoD) to isolate the trimerization and macrocyclization.

August 1, 2023 - 1:30 PM Clinical Medicine, Dentistry and Public Health Breakout III: Panel C

JAZMINE CHISM
UCLA
Environmental Racism at the Heart of Extraction: How Chemical Usage in LA County Oil Fields is Linked to the Race of Nearby Residents
Location: Pathways

LA has a long history of oil extraction that has been linked to segregation and redlining. Oil fields like Inglewood, Beverly, and Cheviot Hills have been extracting resources for nearly a century. However, residents living near these oil fields have different sociodemographic circumstances that may affect oil extraction practices and contribute to environmental racism. Oil extraction uses chemicals in well maintenance and stimulation that maintain the integrity of the well and promote oil extraction. Some of these chemicals are known to be hazardous to human health. To evaluate the correlation between sociodemographics and chemical usage in LA County oil fields, I will construct Geographic Information Systems (GIS) generated maps to analyze the sociodemographic distribution of oil field adjacent residents. I will evaluate the South Coast Air Quality Monitoring District (SCAQMD) chemical usage data and oil production data from California Geologic Energy Management Division (CalGEM) from 2015-2019 based on chemicals per oil field event and oil produced each year. I will utilize statistical tests to argue if chemical usage in oil fields adjacent to lower-income BIPOC communities will be higher than in more affluent white neighborhoods. This research will be essential for the field of environmental epidemiology as LA County plans to phase out oil extraction by 2042. The county must efficiently clean oil operations to ensure LA communities that have experienced environmental racism are treated equitably.

NYEISHA EPPERSON
Fayetteville State University
Health Promotion Among Black Churches in Fayetteville
Location: Pathways

The purpose of this qualitative study is to determine African American pastors' perspectives regarding the role of the Black Church in providing health-related information and/or initiatives to their congregations. Participants will be invited to participate in a semi-structured interview about their previous and/or current public health programming activities. The study will answer the following research questions: (1) what are pastors' perceptions of the church's responsibility for health promotion, (2) for those churches who provide health programming, what have been the short- and long-term impacts of those efforts, and (3) what opportunities and barriers to initiating or continuing health promotion activities exist? The goals of the study are to better understand pastors' views regarding health promotion and barriers to initiating or continuing it so that solutions can be implemented to enhance the health and well-being of the African American community.
Keywords: Black Church, public health promotion, congregations

NAOSHI JOHNSON
University of Wisconsin-Madison
The Causes of Vaccine Hesitancy in Black Americans and Recommendations
Location: Pathways

During the Covid-19 pandemic, Black Americans experienced higher rates of vaccine hesitancy and lower rates of vaccine uptake when compared to White Americans. Medical mistrust due to historical and contemporary adverse experiences with the medical system was the primary argument leveraged for these observed disparities in the Black community. This study's research question centers around the causes of vaccine hesitancy among Black Americans and potential recommendations to alleviate the issue. An extensive literature review surrounding the causes of vaccine hesitancy in Black Americans on research databases (PubMed) and the recommendations outlined by researchers comprise the methodological approach for this study. Within this inquiry, this study aims to assist in reshaping the conversation of vaccine hesitancy among Black Americans from being overly critical of the Black community to one that is more understanding and empathetic.

August 1, 2023 - 1:30 PM Microbiology, Immunology, Molecular Genetics Breakout III: Panel C

NICHOLAS MATTHEWS
University of Arizona
The Principles of Modifying Protein Stiffness with the Use of SpyCatcher and SpyTag for Oligomerization of Proteins by Manipulation of Expression Rate
Location: Innovation

It is possible to build proteins with desired characteristics and capabilities by fine-tuning protein assembly with an understanding of the dynamics of protein oligomerization. Hetero-telechelic proteins, which are known for their simple and spontaneous reactivity, have been designed and used for a variety of protein assembly structures, however, difficulties in managing protein oligomerization dynamics during production and purification have limited their potential applications. The final structures that result from the processing of the hetero-telechelic proteins after their expression also vary, albeit the relationship between the rate of expression and the protein's structure is still not entirely understood.
Herein, we used the SpyCatcher and SpyTag systems, which provide a spontaneous and robust iso-peptide bond capable of withstanding pH and temperature fluctuations, to study the relationship between expression rate and oligomer state. To see the various protein assembly structures, we also changed the flexibility of the protein segment that was placed between SpyCatcher and SpyTag. We wanted to create broad guidelines for this work. We enhance biomimicry and the creation of custom protein-based materials with particular functionality by revealing the complex link between protein expression and structure.

COURTNEY MOEDER
University of Colorado Denver
The Modulation of Non-IgE Mediated Mast Cell Activation By Per- and Poly- Alkyl-Substances
Location: Innovation

Per- and poly-alkyl-substances (PFAS) are synthetic chemicals that are introduced to the environment by manufacturing companies. These chemicals persist in the environment for extremely long periods of time. Known as “forever chemicals,” PFAS exposure renders the exposed to test positive for PFAS for their lifetime. Recent research suggests exposure to PFAS results in long term health effects, such as immune system suppression and lowered response to vaccinations. Since widespread usage of PFAS has been increasing yearly and with studies showing the adverse impact on health, a need for regulatory guidelines is now of major importance.
In this study, we look at how the varying types of PFAS effects mast cell degranulation rates. Concentration and length of treatment are also analyzed in its affects on the results. PFOA, PFAS, PFHS, PFBS and GENX, were used as treatment groups within this experiment. Rosa Mast cells were exposed to concentrations of the different types of PFAS at 1.0, 10. and 25. μM for 24 and 48 hr. time periods. The treated cells were then “activated” by exposure to a positive control of silver nanoparticles, known to cause activation by the MRGPRX2 receptor. β-Hexosaminidase levels were recorded and analyzed against the treatment group treated strictly with silver nanoparticles. Additionally, the results were compared to treatment groups at varying concentrations to identify if concentration had an impact on results. Furthermore, the results for the 24 and 48 hour time thresholds were compared against each other. The results suggest PFAS has an overall effect on mast cell degranulation. The results vary for each type of PFAS treatment. Certain PFAS, such as PFOA is seen to amplify activation. While certain PFAS, such as GENX is seen to repress activation.
Overall, varying the concentrations of PFAS didn’t yield statistically different effects within the treatment groups. However, the time threshold of how long cells were treated for did impact the results obtained. Exposure at 24 hours yielded results that weren’t statistically different then the 4880 control. This suggesting that longer periods of exposure cause a greater effect on mast cell activation.
In conclusion, PFAS exposure to mast cells has an impact on the rate of betahx release. PFAS was seen to either increase mast cell degranulation or suppress it, depending on the specific PFAS. While concentration wasn’t seen to impact results, time period did.
The future direction of this study is to identify if PFAS has an effect on the glycolysis of the treated mast cell. As well as identifying if cytokine release occurs after mast cells undergo PFAS exposure.

JIMENA RAMIREZ
East Central University
ULP1 Cleavage Control Expression using GFP-SUMO1
Location: Innovation

The main purpose of this project is to thoroughly express a recombinant fusion protein known as GFP-SUMO1, as a cleavage control for the eventual activity testing of a nuclease known as Cas13a. Currently in the field, Cas13a is used for diagnostic rapid testing by closely recognizing and matching nucleic acids in a given sample. Since GFP-SUMO1 is a SUMO fusion protein, SUMO-specific proteins such as ULP1, can eliminate this SUMO tag. This tag is known as a fusion tag that is present in the protein, which partly acts as an affinity tag by making the target protein easier to detect and purify. The overall goal is to determine if a recombinant protein called ULP1 can efficiently cleave off inessential tags in GFP-SUMO1. GFP-SUMO1's expression and purification will give more insight on ULP's functions and interactions with SUMO-specific proteins, which will be beneficial for Cas13a's purification. The first step before following through GFP-SUMO1's expression is isolating its high-purity DNA from the bacterial strain it was initially stored in through a miniprep procedure. Once isolated, the plasmid was further investigated in order to find its distinct accommodations through plasmid sequencing. From analyzing the sequence, the plasmid was found to have a T7-based expression vector, which relies on the specificity of a particular inducing agent, in this case IPTG, and strain of BL21(DE3) pLysS (BDP) competent cells needed for expression. By expressing this protein, site-specific cleavage from the SUMO tag is possible, while also having the protein at hand for Ni-NTA purification.

August 1, 2023 - 1:30 PM Psychology and Cognitive Science Breakout III: Panel C

CYNTHIA FABER
Augsburg University
How Polygraphs are Used to Induce False Confessions
Location: Discovery

Recent literature has shown that polygraph testing does not have a strong scientific backing, yet it is still commonly used to screen new employees and as an investigation tool with criminal suspects. The technique associates changes in breathing, blood pressure, and skin conductivity due to sweating with deception by the examinee, but there are many reasons for these physiological indicators that vary outside of the act of lying. Each human is unique, meaning we all react in different ways to events and in this case we all lie differently. For this project I analyze and discuss how interrogators use polygraphs as an interrogation tool to elicit false confessions in criminal investigations. I also discuss different types of false confessions and how interrogators can manipulate suspects into believing they were the person that committed the crime. Since jurors and criminal justice officials treat confessions as more probative than any other piece of evidence in cases, it is crucial that who is confessing to a crime is the true perpetrator. The number of false confessions that are elicited by polygraph testing is alarming, and the criminal justice system should understand the research and background of polygraph testing, re-evaluate their use, and consider alternative interrogation techniques.

COREENA FORSTNER
Eastern Michigan University
Jurors' Perspectives on the NGRI Plea: Exploring Criminal Responsibility in Cases of Psychosis, Delusional Thinking, and Premeditated Crimes
Location: Discovery

This paper aims to delve into the perspectives of jurors regarding the NGRI (not guilty by reason of insanity) plea in cases involving individuals with psychosis and delusional thinking who premeditate a crime. By examining how these individuals can plan a crime despite their mental illness, we seek to understand the complexities of their criminal responsibility. The paper also explores various case studies, the legal duty to warn statute, competency to stand trial, the insanity defense, distinguishing delusions from radical political beliefs, and the impact of premeditation on juror decision-making. This project aims to establish a deeper understanding of the interaction between mental illness, criminal intent, and legal responsibility, and provide insights that may inform future policy and legal considerations.

ALEX HERNANDEZ OLIVERA
Augsburg University
The Polygraph's Impact on False Memories
Location: Discovery

People use lie detectors in many different places but they have their most profound impact when law enforcement tries to get the “truth” out of someone to see if they committed a crime or not. In these examples, it’s always assumed that the results from the lie detector test are 100% accurate when determining if the person was lying about the question they were asked. I will be evaluating the validity of the polygraph test or simply the quality of the test and how accurate it is in measuring whether or not a person is being deceptive. Those being examined under the polygraph may trust that the results are trustworthy and if they are told something other than what their memory remembers, this will lead them to believe and later falsely confess to the crime. The focus will be more on whether or not polygraphs cause false memories, leading people to think that they have committed the crime they are being accused of. There will be a review of 56 exoneree cases and I will be looking deeper into those who have persuaded confessions. I hypothesize that polygraph tests and interrogation tactics used by investigators lead some examinees to believe that they have committed the crime they are accused of, due to both the environment they are put in and the current state of mind that many accused may be in.

ZACHARY KENNY
The University of Texas at Austin
The Austin Mental Wellness & Safety Project: An Initiative for Addressing Mental Health Disparities in Community-Police Interactions
Location: Discovery

The purpose of this project is to investigate the complex relationship between law enforcement and individuals living with mental illness in Austin, TX. Compared to the 15 largest cities in the United States, Austin had the highest per capita rate of police shootings during mental health crises (Office of City Auditor, 2018), and the state of Texas ranks last in access to mental healthcare (Reinert et al., 2021). The combined impact of these issues pose devastating outcomes for people living with mental illness in this state. Using qualitative interviews with community members, practitioners, law enforcement, criminal and social justice scholars, and other key players in the field, I seek to investigate methods to improve responses to mental health crises at the local community level and find violence-reducing alternatives to policing in response to psychiatric emergencies. To supplement my qualitative analysis, I analyze public data on police violence and response to resistance to further examine the scale of these disparities as they relate to location, sex, race, and access to mental healthcare services. The desired outcome of this project was to design a website meant to educate the local community on challenges faced by people living with mental illness, and what can be done to protect or improve one's livelihood should they encounter a mental health crisis.

August 1, 2023 - 1:30 PM Psychology and Cognitive Science Breakout III: Panel J

JUSTIN BEGAY
University of Arizona
The Implementation of a School Garden Project for Native American College Students
Location: Catalyst

Native Americans historically have the lowest high school and college graduation rates in the United States. Current research points to historical trauma stemming from Indian boarding schools which have stripped indigenous youth of their culture and language, resulting in generations of lost identity, lowered self-esteem, and challenges forming healthy relationships. Intergenerational poverty, poor health outcomes, and low academic achievement have followed, compared to the general population. Social and emotional learning (SEL) research utilizing school gardens in conjunction with self-determination theory (SDT) has shown improvements in self-reported motivation to learn, prosocial behavior, and improved academic outcomes among school-aged children.
Addressing the research gap on school gardens and SDT among Native American college students will enable autonomy by providing indigenous students with a choice of culturally based instruction to complement textbook instruction and written examinations, facilitate competence through motivation to learn about their culture and language, and promote relatedness by learning alongside their Native American peers that best understand their struggles. This exploratory school garden study will quantitatively measure self-determined behaviors of 60 indigenous college students at the University of Arizona enrolled in a Navajo language course at the beginning and end of the academic year, using the Basic Psychological Needs Satisfaction and Frustration Scale (BPNSFS). Garden-based activities will utilize Navajo terminology and culturally based instruction from mentors fluent in the language and traditional stories passed through the generations, with the goal of improved SDT measures and grade point averages to increase graduation rates in Native American students.

MANAL HASAN
University of Wisconsin-Madison
Increasing Underrepresented Students' Critical Consciousness: A Career Wellness Pre-Post Intervention
Location: Catalyst

This quantitative study investigates the effectiveness of the Tuned in to Strive Out Program, a career wellness intervention, for underrepresented college students. The Tuned in to Strive Out program is a 5-week workshop series intended to guide students to preserve a stronger sense of wellness and self-determination in their vocational development (Center for Research on College-Workforce Transitions, 2023). The intervention is grounded in career development theories and a Radical Healing framework. The Radical Healing framework consists of five anchors: cultural authenticity and self-knowledge, critical consciousness, radical hope, collectivism, and strength and resistance (French et al., 2020; Tuned In Labs, 2023). This study will use a pre-and post-survey test design to assess the differences in critical consciousness of student participants after the completion of the intervention. Students will complete a pre-and post-survey test, which includes demographic questions and a scale on critical consciousness. The study hypothesizes that completing the intervention will increase students' critical consciousness, which is supported by previous literature (Diemer, 2016; Cadenas, 2019, 2022; French et. al, 2020; Uriostegui et al., 2020). We will use repeated measures analyses of variance to determine pre-and post-intervention differences. The literature review and rationale for the study comprise this presentation, as data collection will begin in Fall 2023.

KARLA SANTANA VALENTON
University of California, Davis
UC Davis Students' Perceptions about Starting College 2018 - 2022
Location: Catalyst

The COVID-19 pandemic has raised concerns about college students' mental health and feelings of connectedness. Educators believe that social isolation increased due to sheltering-in-place guidelines and campus closures. Still, little research has yet been published comparing students' social and academic expectations about college from pre- to post-COVID. The present study investigated the following research question: how did incoming UC Davis undergraduate students' thoughts and feelings about starting college change from before COVID compared to two years into the pandemic? Each summer from 2018 to 2022, we assessed incoming UC Davis students' thoughts and feelings about starting college (N = ~25,000). Specifically, we assessed (1) academic and social expectations in the first year and the end of the second year and (2) perceived difficulty transitioning to a 4-year institution. Surprisingly, students had better expectations of belonging at UC Davis and lower stress and anxiety levels about starting college between 2020 and 2021 than in 2019. We found no differences in thoughts and feelings about starting college between 2020 and 2021. The analysis will include variations in this pattern among demographic groups, such as those with low-income or first-generation students, and group differences.

ELYZA VILLALTA
University of Arizona
The Relationship Between Age & Expressive Language Scores with Preschoolers with Developmental Language Disorder and Typically Development
Location: Catalyst

Children with developmental language disorder have trouble acquiring language. From previous studies of typical language development, age, and maternal education have a positive relationship with language outcomes. The current study examines the relationship between these variables and expressive language in children with typically developing language and children with language disorders. The study included a total of 184 preschoolers, 99 had typically developed language (TD), and 85 had developmental language disorders (DLD). The Structured Photographic Expressive Test-Preschool second edition (SPELT-P2) was administered to each participant as a standardized measure of expressive language ability. The groups were equal in age; however, the maternal education and SPELT-P2 raw scores were significantly higher in the TD group. There was a significant positive correlation between age and SPELT-P2 for both groups of participants. There was a significant positive correlation between maternal education and SPELT-P2 in the TD group; however, maternal education was not correlated with SPELT-P2 in the DLD group. As expected, as age increases, expressive language abilities increase for children with typical and impaired language. In maternal education, we discovered a difference between the groups versus DLD, which demonstrates that. A variable associated with language in children with TD did not extend to children with DLD as maternal education was not related to their language. This study indicates that it is important to be cautious in the field of speech-language pathology when using information taking information from children with TD and applying it to the population of children with DLD.

August 1, 2023 - 1:30 PM Psychology and Cognitive Science Poster Session 2

FÁTIMA AGUILAR
University of California, Santa Barbara
Perspectives of Spanish-Speaking Families Regarding the Utility of a PCIT Paradigm which includes Promotoras
Location: Optimist

Presently, there are many disparities affecting access to evidence-based mental health treatments for Latinx families. One proposed strategy to address these disparities is partnering with community health workers (i.e., promotoras de salud) to help families access and engage in these treatments when they are available in the community. In the current study, promotoras were trained to enhance engagement into Parent–Child Interaction Therapy (PCIT), an evidence-based practice that includes training parents with young children in skills to reduce child disruptive behaviors. The study investigated perceptions of how promotoras supported parents through qualitative interviews with four parents. . This was done using Rapid Qualitative Coding to analyze the interviews with families who went through this PCIT model including promotoras. Three major themes emerged: (1) Differences between the promotoras and therapists conducting the PCIT treatment (2) Challenges in working with promotoras (3) Benefits in working with promotoras. The interviews demonstrated that families perceive more benefits than challenges when working with the promotoras. Challenges predominantly related to conducting visits via telehealth due to COVID-19. Future directions from this work should include an option for in-person meeting with the promotoras as well as gathering the promotoras perspective within this model. Overall, this study aims to spread information on the importance of including promotoras in adaptations of current evidence-based practices to make them more culturally responsive.

GENESIS HERNANDEZ
University of California, Santa Barbara
The Effects of Parental Perception for Behavioral Health Services on Help-Seeking Behavior in Women with ADHD within the Chicanx/Latinx Community
Location: Optimist

Unfortunately, there is a long history of clinical psychology research where Latinx women have been neglected, especially with diagnoses related to neurodevelopmental disorders like Attention Deficit Hyperactivity Disorder (ADHD). This major oversight has had serious consequences in the Latinx community for advancement, especially in regards to psychiatric treatments. A case study on young Chicanx/Latinx women with diagnosed ADHD at University of California Santa Barbara would help identify how to best support this particularly high functioning population by investigating their experiences through a cultural lense. Participants with a diagnosis, and those without one but that demonstrate ADHD symptoms will be recruited in order to compare and contrast their experiences. Qualitative interviews will be conducted to investigate the clinical experiences for this population (or lack of), and how their cultural identity and collectivism with the Latinx community has affected their help-seeking behavior. Latinx populations typically exhibit high levels of stigma against utilizing mental health services, so investigating how to mitigate this phenomenon with new psychoeducation is crucial to improving support for this population. Participants will also be surveyed using the Day's Mental Illness Stigma Scale and the Mexican–American Cultural Values Scale for Adolescents and Adults. It is predicted that participants diagnosed with ADHD during early childhood will have significantly lower ratings on the Stigma Scale compared to those diagnosed within the last five years. However, participants who were diagnosed later in life are expected to have limited access to mental health care services, and/or parents who discouraged their help-seeking behavior.

JACQUELINE LOPEZ
University of California, Santa Barbara
Clinician Experiences of Implementing MDFT with Bilingual (Spanish/English) and Trilingual (Spanish/English/Mixtec) Families
Location: Optimist

Multidimensional family therapy (MDFT) is an intervention that supports adolescents struggling with substance abuse, emphasizing improved family communication and restructuring. While most MDFT literature focuses on English-speaking populations, it is crucial to evaluate the therapy's effectiveness in Spanish-only, bilingual (Spanish and English), and trilingual (Mixtec, Spanish, and English) households. This study involved interviews and questionnaires with three Licensed Marriage and Family Therapists, revealing key themes surrounding the practice of MDFT, such as cultural competence, family dynamics, language in therapy, and interventions for parental reconnection. Moreover, the clinicians highlighted disparities between their formal training and the policies at their practicum sites, specifically regarding cultural awareness, power shifts in families, and resource translation. These findings call for further investigation to enhance treatment outcomes for bilingual and trilingual families.

RAMIRO RODRIGUEZ SANCHEZ
California State University, Dominguez Hills
Family closeness as a protective factor for well-being and substance use amongst Latino/a adolescents
Location: Optimist

Family factors have been strongly associated as protective measures for adolescent well-being and substance use. Low parent-child conflict, parental supervision, and parent closeness are all positive protectors for adolescents, with some evidence that these associations may be particularly important for Latino/a adolescents depending on their generational status. This proposed study aims to examine parent closeness and parental support as predictors of substance use and mental well-being in a large sample of Latino/a adolescents drawn from a public-use longitudinal dataset, the National Longitudinal Study of Adolescent to Adult Health (Add Health). We hypothesize that in the Latino/a subset of the Add Health sample (N=2,482), parent closeness will serve as a predictor for risky substance use (i.e., alcohol, tobacco, and marijuana use), and psychological well-being (i.e., self-esteem, depressive symptoms). In addition, we will explore the extent to which these associations differ for adolescents depending on their identity as first generation (21%), second generation (33%), and third and later generation (46%) Latino/a Americans. To test our hypotheses, we will conduct secondary analysis using self-reported racial-ethnic identity data and the parental support and closeness, self-esteem, depression, and substance use (i.e., alcohol, tobacco, and marijuana) measures available in the database. SPSS will be used to conduct linear regressions to test parental support and closeness as a predictor of adolescent substance use and psychological well-being. To explore differential associations by generational status, I will examine generational status as a moderator of these associations.

August 1, 2023 - 1:30 PM Sociology and Public Affairs Poster Session 2

NAKA ELELLEH
University of Callifornia, Santa Barbara
Consent Decree: Friend or Foe
Location: Optimist

New innovations and capitalistic progress to make us as poor, starved, and as oppressed as possible for the sake of a protected class is a constant and depressing reaffirmation. With the protests in 2020, resistance to police oppression has been brought back to the forefront. The consent decree is one of the most comprehensive. A consent decree is a legal binding document between a police municipality (the police and surrounding agencies) and the federal government for violation of constitutional rights, as an alternative to going to trial. The notion of the consent decree is to change what police culture is in a municipality. My research with the consent decree asks: is the consent decree an effective usage of resistance against the state's usage of legitimate violence and is there a discrepancy with predominantly black populations? I argue that the consent decree is not an effective use of municipal funds due to the nature of police culture as it relates to its expression of fear and militarization. This project is important because the study of W.E.I.R.D populations in relation to the consent decree is already minimal, which means a study of predominantly black populations is potentially years away.

SHANI MARZUCA
Loyola Marymount University
Police Reform And How Citizen Review Boards May Alleviate The Problem Of Police Misconduct
Location: Optimist

The lack of accountability in law enforcement of police misconduct is an issue that has polarized the law enforcement landscape as well as the nation, awakening a renewed call from community leaders, policymakers, and advocates for citizen review boards and other methods of improving police transparency and accountability. How can Citizen Review Boards improve the rates of police misconduct and ensure greater police accountability? What methods do Citizen Review Boards employ to supervise police misconduct? What are the limitations and problems associated with Citizen Review Boards? The primary method of inquiry employed is a literature review of social science research in the areas of law and society, criminal justice, and policing, containing keywords such as police reform, accountability, police oversight, and citizen police complaints. Online searches using JSTOR, Google Scholar, and SAGE Publications were utilized to gather information on this topic. Based on the literature, one can hypothesize that Citizen Review Boards may affect police behavior, and they may have the potential to play a significant role in shaping police accountability and improving public safety. Previous work on this topic exposes the issue of legitimacy with Citizen Review Boards. To combat this, Citizen Review Boards must be given power to be able to reprimand police officers for misconduct, without any interagency interference. With adjustments and requirements, Citizen Review Boards can help reduce the problem of police misconduct and lead to a safer and more just society for its citizens.

CELEST PADILLA
California State University, Dominguez Hills
Navigating Borders: Assessing the Impact of the 100-Mile Border Zone on Migrant Mobility
Location: Optimist

San Diego County, California is part of the ‘100-mile border zone,’ also known as the ‘Constitution-Free Zone,’ where people are subject to arbitrary stops and searches without a warrant or probable cause at U.S. Border Patrol checkpoints that are located within 100 miles of the international border. Consequently, peoples’ mobility in San Diego County is regulated by essentially two borders—the international San Diego/Tijuana border and a line of traffic checkpoints that regulate entry and exit into the region. Despite undocumented San Diego residents' daily challenge to navigate checkpoint operations on their way to work, school, or even the grocery store, little is known about these checkpoint operations. The aim of the project is to determine the constitutional legality of immigration checkpoints and how they are being used to enforce the border. For this study, I conducted a policy evaluation of checkpoint operations in San Diego County to assess border enforcement measures’ impact on the region. Ultimately, I find that checkpoints are an extension of the international border that work together to manage migration into the interior of the United States through confinement and deterrence.

August 1, 2023 - 2:45 PM Anthropology, Gender, and Ethnic Studies Breakout IV: Panel D

MICHAEL CORDOVA
University of Texas at Austin
Looking for Ted: Black Trips, 'Psychedelic' Humanism, and Silence
Location: Pinnacle

Within Stanislav Grof and Joan Halifax's The Human Encounter with Death is a claim that anxiety towards death can be relieved. As the book itself maps out Grof's research with terminally-ill cancer patients and their respective psychedelic experiences. Within the bounds of this research is Ted, the only black patient with a qualitative report in the text. His very position within the text serves as a challenge to Grof and Halifax's argument. Thinking alongside the violent history of racialization and coloniality, I ponder the position of Ted within what was then an emerging discourse of psychedelic science.

It is near impossible to piece together a definitive archival narrative of Ted from the fragments of his life curated by Grof and Halifax. But rather than dwelling on this impossibility, I argue that Grof and Halifax's narrative ambivalence is crucial to imagining the place of blackness within psychedelic science. The silence of Ted lies at the heart of the discipline in its continuation of the historical prescription of blackness as object-thing. My paper asks what happens if the normative tripping that liberal humanism expects cannot be written about through qualitative reports? What if the tripping of Ted rests in alternative ways of knowing that resist the objectification of blackness? I argue that psychedelic sciences have been unable to translate the black trip. The discipline's failing provides us with potential sites of epistemic rupture that grant new models for black existences. Might the black trip serve to interrogate normative ways of being?

SYDNEY NEAL
University of Maryland College Park
Theorizing Racialized Reproduction through an Expansion of Sartre's Antisemite and Jew
Location: Pinnacle

Jean-Paul Sartre's Anti-semite and Jew (1948) is a treatise on existentialist psychology in the context of World War II, anti-semitism, and the creation of a 'racial other'. Sartre establishes two archetypes, or dramatis personae, that exist in relation to the racial other: the Anti-Semite and the Democrat, and examines world-making and personhood, as well as the structural implications of existing as the Anti-Semite and the Democrat. I expand on Sartre's model in two important ways: 1) establishing two additional archetypes: The Liberator and The Consumer and 2) explicitly connecting the categories (not explicitly stated by Sartre). I contend that this enhanced approach more accurately reflects the ways in which blackness is erased, consumed, and uplifted in the United States. Specifically, I focus on racialized reproduction in the US to demonstrate the value of my model. I begin by presenting Sartre's original framework followed by a detailed discussion about my modified version and demonstrating how it can advance our understanding of racialized reproduction. The model can be used to analyze and evaluate the impact of policies and practices related to any field. In this paper, the expanded model is used to critique 6 areas of racialized reproduction in the United States: slave breeding, eugenics & forced sterilizations, contraception, abortion access, artificial reproductive technologies, and doulas, midwives and the birthing experience.

OLIVIA CARMEN OTERO
University of Arizona
The Mexican Corrido in the Arizona - Sonora Borderlands
Location: Pinnacle

Corridos, or Mexican narrative folk ballads, are intrinsic to Mexican and Mexican American culture. Such ballads have been found along the borderland's region, the shared space between the United States and Mexico for the last two hundred years. Corridos represent not only Mexican and Mexican American values and culture, but also preserve moments in time through the very creation and performance of corridos. Illuminating how they are created within a bi-national, transnational element of life on both sides of the border, these perspectives come together in the form of a corrido. An extensive collection of corridos can be found via the UCLA Strachwitz La Frontera Collection and the Smithsonian's collection 'A guide through the Borderlands,' both focus on highlighting culture along the U.S./Mexico border (borderlands region). The present study therefore focuses on the research question: Where, within these collections do these songs represent the Arizona-Sonora borderlands specifically? Utilizing a Chicana feminist framework, and a textural analysis from a folklore or folkloristics perspective surrounding select songs, the goal of this project is aimed at examining the collection and preservation of corridos. Disclosing the elements of what make the Arizona-Sonoran corrido distinct, while acknowledging the gap in preserving this endemic style within the genre of corridos.

August 1, 2023 - 2:45 PM Arts and Multimedia Breakout IV: Panel A

GEM ABARCA
University of Arizona
¡Viva La Huelga! - The Creative Practice of Art, Research, and Identity
Location: Odyssey

Grappling with ethnic identity is fraud for many people. Labels and categorizations of race and ethnicity complicate answering the question of “who am I?” Labels, in this case, such as “Latino,” “Chicano,” and “Mexican-American” hold vast differences that do not authentically represent how a person relates to themselves and the paradigms that the labels offer. In the current research and creative practice, the artist examines their identity through mixed media and organic sculptural art. Here, art is utilized as a method of researching, processing, and educating others on their identity and their belonging to a larger community that is united in experiencing similar strifes. To investigate identity, the artist examines historical events that have targeted their community and the use of organic material to represent place. These events include the War of the Grapes in California, 1973, and our unfolding history of implementing stricter immigration laws in Florida. Both of these events affect predominantly Latino populations that have shaped who they are and, in turn, shaped how each individual interprets their own identity and belonging to their community. By using organic material from Tucson, Arizona, a different location from California and Florida, the artist offers their perspective as a member of their community despite not experiencing these conflicts locally as art is a medium and language that overcomes geographic borders. Overall, the artist employs art as a medium to materialize and communicate their grappling of identity in an effort to generate greater awareness and empathy for their community.

EZEQUIEL BUSQUETS
Westminster University
The Collaboration of Black American Musicians as Part of a Larger African American Diaspora
Location: Odyssey

The present study explores how Black American musicians are significantly more likely to collaborate with each other across musical genres than other races, suggestive of a larger African American Diasporic cultural movement. This topic is important because it contributes to an understanding of how music is being made, and in what context, especially when it comes to African American Culture, a subject that has been historically understudied, misrepresented, and misunderstood. This research aims to contribute closing that gap, by linking, through multiple case studies, the commercial, and cultural success of recent key Black American figures in music, with the ways they interact with Pan-Africanism in the context of an African American Diasporic cultural movement. These finding contribute to the field, and society as a whole because it provides the lenses to see how artists can be complex individuals, more than just a musician or a producer in a particular musical genre, they can also possibly be acknowledged as scholars, innovators across multiple cultural spaces, agents of social change, and so forth. Broadening our understanding of music in general as more than just an art form but also a social force, a manifestation of culture.

PERCY CORDERO
Westminster University
Sensory Friendly Theatre is Better for Autistic Adults (Not Just Kids!)
Location: Odyssey

With more and more research coming out about how autism works for people, one thing that is lacking is the relationship between autism and live theater. As an autistic person and a theater actor in their 20s, how does autism affect the way live theater can be enjoyed? Is there a way to enjoy theater for autistic people and people with sensory issues? By watching a couple shows from different theater companies in the Salt Lake City Utah area and recording down what is felt during each production, it can be determined how even for someone who is closely in theater can still be heavily affected by their autism. Researching what a sensory friendly show is and making it an option for my own college's theater department by making an action plan on how to do it. Research that is readily available only discusses how children react in sensory friendly shows.Those children still must grow up, and there are adults that find out they are autistic after childhood. What about them? How are they able to enjoy theater? Without any research indicating how autistic adults react to sensory friendly or non-sensory friendly performances, understanding it in myself will help advocate for having more theater companies do more sensory friendly shows. There are more questions and more things to do with this topic but understanding it myself and trying to make a change in my own college is at least a first step in the right direction for more accommodating theatre.

August 1, 2023 - 2:45 PM Education Breakout IV: Panel A

LAURYN FAMBLE
UCLA
Will They See Us? Noticing Classroom Dynamics in Introductory Science Classrooms via Racialized Event Case Scenarios
Location: Pathways

Due to instructors' views and unconscious biases, Black students in the sciences experience racialized events in the classroom that go unnoticed and/or unaddressed by instructors. Instructor behaviors in the face of racialized events can lead to racial noticing or racial evasiveness in the classroom. Racial noticing is defined as the ability to recognize, interpret, and respond to racialized events, while racial evasiveness is the refusal to accurately describe and acknowledge the way race functions in society. Racial evasiveness emotionally harms and alienates Black students, while racial noticing leads to a more inclusive and supportive environment. This study aims to answer: how do professors, teaching assistants, and learning assistants in lower division science courses at the collegiate level notice and interpret racialized classroom events, and what gaps in racial linguistic knowledge are present in the teaching team? To address this, we utilize Gretchen P. King, Tatiane Russo-Tait, and Tessa C. Andrews' (2023) classroom-oriented racialized event cases, which documented racial evasiveness in professors. Through these cases, we plan to illuminate trends of racial noticing and racial evasiveness among a broader teaching team and explore any trends based on instructor identities. This research will highlight the extent of racial noticing and evasiveness, allowing for nuanced conversations around anti-racism and more effective interventions that benefit Black students pursuing STEM at the collegiate level.

BRIANNA FRESHWATER
Southern Methodist University
Advanced Placement Participation Rates in Predominately Minority and Low-Income Schools
Location: Pathways

Taking Advanced Placement (AP) courses is integral to attending selective colleges and receiving prestigious scholarships, but not all students participate equally. Past research has found that Black, Hispanic, and low-income students participate in AP courses at much lower rates than their White and non-low-income peers. Further, inequitable rates by race/ethnicity and income level are especially notable in schools where White and non-low-income students are a minority group. Thus, this study seeks a quantitative understanding of inequitable participation rates by race/ethnicity and income level in a sample of public high schools that are predominately Black, Hispanic, and low-income. Additionally, this study seeks a qualitative understanding of how AP functions at the campus level through interviews with school personnel within the sampled schools. Last, the data from both aspects of this study are combined in an explanatory sequential mixed methods design to suggest campus-level policies that encourage AP accessibility.

EDGAR GONZALES REYES
University of Minnesota- Twin Cities
ERGS as Cultural Knowledge: Participatory Learning, Development, and Empowerment in Organizations
Location: Pathways

Culture has the ability to influence organizational behavior (Gelfand et al., 2017) and performance outcomes (Berson et al., 2008; Gregory et al., 2009; McDermott and O'Dell, 2001). Most studies have identified this phenomenon through the actions and vantage point of organizational leaders. However, recent shifts in societal values and increased interest in people-centered research within organizational behavior and management studies have begun to focus on the perspectives and experiences of organizational stakeholders at multiple levels of the organization (Belay et al., 2023; Fischer et al., 2022), including those who carry underrepresented social identities (Men et al., 2023; Sisco and Collins, 2018). For the purposes of this research, attention is given to employee resource groups (ERGs) as a way to examine how organizational culture and executive leadership can promote the learning, development, and advancement of minorities in the workplace. To fulfill this objective, we begin by explaining why the implementation of ERGs is the most effective strategy to support an organizational culture that values diversity, equity, and inclusion. Next, we offer a literature review of indigenous and cultural knowledge approaches that have been utilized in the workplace by underrepresented and marginalized employees. We especially expounded on research that identifies coping strategies and participatory learning practices that help minority employees navigate workplace incivility (i.e., modern discrimination) and advance their careers. Lastly, we conclude our study with recommendations for future research and practices that focuses on building stronger connections between executive leaders and minority employees.

OFELIA PRECIADO-MACIAS
UC Davis
Using Social Justice Case Studies in Science can Prevent Future Discrimination Against Obese Individuals
Location: Pathways

Discrimination against obese individuals in the United States is ubiquitous, particularly within the medical field. One way to mitigate implicit bias of future healthcare workers is to introduce undergraduate pre-health students to social determinants of health regarding obesity through Social Justice in Science (SJS) case studies. We developed a case study that had students explore the physiological mechanisms and social factors that contribute to obesity (poverty, redlining, food deserts, and hormonal imbalance. To pilot this case study, we administered a survey to collect the perspectives from 204 pre-health students enrolled in an advanced physiology course at UC Davis in Spring 2022. We also gathered the perspectives of communities with lived obesity experience. These collaborators provided feedback on the case study in terms of the cultural sensitivity, appropriateness, and whether the language and content were accurately representing these communities. After modifying the case, we implemented them to two offerings of an advanced physiology course in Fall 2022 and Spring 2023, one course completed the case without and the other with the social justice component. We administered the Implicit Association Test at the end of the course which measured students' implicit bias regarding obese communities. Results revealed a significant reduction in bias against people struggling with obesity ($p=.007$, $R2=.103$, $F(9, 176)= 3.374$). These findings are promising for decreasing implicit bias in future healthcare workers toward more just medicine.

August 1, 2023 - 2:45 PM History Breakout IV: Panel B

GABRIELLA DIAZ ROJAS
University of Minnesota- Twin Cities
Education and Political Consciousness: A Comparative Analysis of Chile, Cuba, and the United States
Location: Innovation

The 1960s and 1970s were a politically tumultuous time in Chile, Cuba, and the United States. The dictatorship of Augusto Pinochet in Chile, the rule of Fulgencio Batista in Cuba, and the counterculture movement in the United States all ignited political and social movements that transformed the socio-political landscape in each country. At the same time, education underwent profound changes at all of its levels. This study analyzes the principled rationale and practical educational curriculum for each country in the 1960s and 1970s, and its relationship to each country's revolutionary politics. To do so, I will analyze each country's conception of citizenship, along with the effect on political consciousness, and how these are bridged by education. The significance of this study is to highlight the impact that education has on political principles and consciousness, and how effective policies can increase political participation of university students.

SIPHOSAMI E. DONGOZI
Southern Methodist University
Colonial Chains, Contemporary Struggles: The Erosion of Zimbabwean Women's Social Status and the Role of Education
Location: Innovation

Through an in-depth exploration of Zimbabwean women's social status and the role of education, this ethnographic study unveils the enduring impact of colonialism on tradition, culture, and systemic structures that have contributed to oppressive systems in contemporary Zimbabwe. By centering on the narratives of 15 women born between 1948 and 1983, collected through an oral history project, it becomes evident that Zimbabwean women's social status remains in a state of limbo, caught between their families' perception of them as temporary before marriage and their in-laws' view of them as outsiders due to lack of blood ties. These societal attitudes hinder the strength and support of women's status in Zimbabwe. Moreover, the study highlights the pervasive belief among some families that investing in a girl's education is futile, as she is expected to leave eventually. As women share their experiences of being denied access to or unable to complete primary or secondary education, a profound sense of regret emerges, revealing the profound impact of such limitations on their lives. This research contributes to understanding the complex interplay between colonial legacies, cultural norms, and educational opportunities, shedding light on the urgent need for transformative interventions to enhance women's status and educational equity in Zimbabwe.

QUESTIAN DOVKY
Montana State University
Mapping Edmonia: Preliminary Research of Neo-Classical Sculptor Edmonia Lewis
Location: Innovation

Establishing a connection between Edmonia Lewis and her brother Samuel Lewis proved to be crucial for the development of an exhibit proposal aiming to bridge the gap between Bozeman, MT and Rome, IT. This connection serves as a catalyst for reevaluating Edmonia Lewis's position as an entrepreneurial force comparable to her brother, Samuel, both within and beyond the borders of Italy.

The current literature highlights Lewis's biography and complex identity as a Black and Ojibwe Neo-Classical sculptor, however, there is yet to be a conversation on her physical movement and how it translates to her desire of being a respected artist and not just a new world oddity among her contemporaries.

Employing a primary methodology that involves synthesizing past literature on the artist, ranging from biographies to critical feminist and race theories of her work, Lewis's movements were visually represented on a public-access timeline. This timeline was constructed by reviewing citations from primary sources and digitized databases, resulting in a color-coded and hierarchical model illustrating the lives of both the artist and her brother.

The timeline provides contextual information about the locations in which they resided, shedding light on the political implications of their journey towards success. For instance, Lewis emerged as an artist during the Civil War era and subsequently became an expatriate in a newly unified Italy. Edmonia Lewis's choices reveal her ability to seize opportunities that propelled her career forward in tumultuous lands.

In summary, this research highlights the significance of understanding identity through the lens of movement and the opportunities presented by different locations. It emphasizes the importance of considering these factors when exploring the elusive nature of Edmonia Lewis and her brother Samuel, as personal emotions and thoughts may not be readily available.

TERI JACQUES
Kansas State University
Exploring the Problem of Illiteracy Among Haitian Adults through Categories of Colorism, Rural/Urban Divide, Gender Divisions, and Language
Location: Innovation

Illiteracy among Haitian adults poses a persistent challenge within the Haitian population, with disparities observed among women and individuals residing in rural regions. Despite various efforts such as studies and programs developed by scholars and NGOs like UNESCO and the World Bank to address the issue, the problem remains prevalent. The devastating 2010 earthquake further worsened the situation by causing severe damage to the country's already fragile educational system. This research investigates the problem of illiteracy among Haitian adults through an intersectional lens, exploring the categories of colorism, rural/urban divide, gender divisions, and language. Previous literature from both the anglophone and Kreyol spheres will be analyzed, comparing how the issue of Haitian literacy is studied from a national and international perspective. Through a qualitative analysis and a comprehensive literature review, this research aims to provide valuable insights into the complexity of the issue, going beyond surface-level examinations. By adopting an intersectional approach, the study recognizes that illiteracy is not solely determined by a single factor but rather by the interplay of various social, cultural, and historical dynamics. Ultimately, the findings of this research have the potential to inform the design and implementation of inclusive and equitable solutions to combat illiteracy among Haitian adults. By addressing the intersecting dimensions of colorism, the rural/urban divide, gender divisions, and language, this study seeks to contribute to ongoing efforts to improve education and empower Haitian adults with the necessary tools for socio-economic advancement and personal growth by conducting a comprehensive examination of the issue.

August 1, 2023 - 2:45 PM Humanities Breakout IV: Panel C

OLIVIA CUOCO
University of Minnesota - Twin Cities
Recollections of Sexual Education from Parents and Perceptions of Future Parenthood among Sexual Minority Adults
Location: Discovery

Parenthood is a valued ideology for people in the United States. However, there are barriers that decrease the possibility of parenthood for sexual minority individuals, one of which may be a lack of inclusive sexual education as youth are unprepared to make informed decisions about future parenthood. There are also ongoing disparities such that sexual minority youth (SMY) report receiving less sexual education than their cisgender heterosexual peers. Research suggests that inclusive sexual education may inform how people think about future parenthood, but this work has not yet been conducted in the context of sexual minority adults' perceptions of future parenthood. The current study, a secondary data analysis of 433 sexual minority childfree adults' perceptions of parenthood, aimed to rectify this gap by analyzing open-ended responses of sexual minority adults' recollections of sexual education from parents and quantitative associations with future parenthood. We hypothesize that perceptions of future parenthood (i.e., desires and intentions) will be associated with empowering and heteronormative themes. We also hypothesize that sexual education from parents for SMY will be associated with the stigmatization of sexual behavior and these intended themes will be associated with perceptions of future parenthood. Thematic analysis of responses is ongoing, with planned quantitative analyses investigating associations between future parenthood and developed themes following completion of the thematic analysis. Understanding SMY's experiences with sexual education will provide information to parents on how to better educate their children about empowering sexual practices and planned family formation.

SIUBHAN MORA-BRUCE
Wichita State University
Language Change and the Call for a More Gender-Inclusive French
Location: Discovery

French, being a gendered language, presents unique linguistic challenges to the efforts of LGBTQ+ inclusivity. Activists are calling for accommodating pronouns and other grammatical functions. This research project provides background on the nature of French gendered language, the linguistics surrounding language change, as well as the cultural factors attributed to the gender-neutral language conversation. This qualitative literature review will provide various perspectives on the creation, evolution, and implementation of gender inclusivity in the French language, such as from l'Académie Française, as well as an examination of the ways the French language is adapting to changes in societal perceptions of gender identity. This review will also examine the gaps within this linguistic field and present further recommendations for this societal evolution for French speakers.

JANELLE PAGAN
North Carolina State University
Police and Stereotype Threat in Low Versus High-Risk Neighborhoods: A Citizen's Perspective
Location: Discovery

Gaps in the literature concerned a lesser focus on the citizen's perspective during a police encounter as well as the neighborhood factor when analyzing stereotype threat. The disproportionate number of Black Americans who are victims of police brutality has been an ongoing issue throughout the country. Past and ongoing research seeks answers as to why police encounters with citizens of color result in many negative experiences including cases of brutality, arrest, and death. The disproportionate targeting of Black Americans has resulted in mass incarceration where Black Americans are majorly overrepresented compared to their white counterparts (Initiative, 2022). Research results have yielded responses pointing to officers' stereotype threat built around race and perceiving black as being dangerous. The following research conducted works to understand how the preconceived notion of what a low versus high-risk neighborhood is affects police and Black American encounters. A qualitative study surveying formerly incarcerated individuals gets a first-hand account of a police encounter. This paper argues that the location in which a police and citizen encounter took place influences both the officer and citizen's stereotype threat and the following actions and outcome of an interaction.

Keywords: Black Americans, police brutality, encounter, stereotype threat, incarcerated

MICHELLE VASQUEZ LOYA
University Of Colorado Denver
The Intersection between Involuntary Celibacy, Misogyny and Violence Against Women
Location: Discovery

This research project explores the intersection between misogyny and the incel (involuntary celibate) subculture. With online communities rapidly growing and becoming a source of expression for large groups of individuals, can these communities perpetuate or encourage violence against others? Although most social media platforms can be highly mediated, platforms like Reddit offer a degree of anonymity that gives users a sense of protection, allowing them to comfortably engage in conversation with other individuals. Incels (involuntary celibates) are a subculture of men who blame women for their inability to form romantic relationships. Incels hold deep misogynistic beliefs that are most commonly expressed through online forums.
Using qualitative content analysis, themes and patterns that emerge from online content will be examined. Expressions of misogyny and other negative and hurtful attitudes toward women will be the focus. The analysis will identify themes relating to toxic masculinity, misogyny, acts of violence, mental health issues, and attitudes toward women. The ways incels form and maintain their identities and the role of online communities in shaping their beliefs will also be examined. The study's results will contribute to the overall understanding of the incel subculture and provide insight into the broader issue of misogyny and its impact on society. Individuals interested in understanding the complex dynamics of online communities, such as policymakers and mental health professionals, will find the findings relevant.

August 1, 2023 - 2:45 PM Sociology and Public Affairs Breakout IV: Panel E

FATUMA ARAB
University of Minnesota - Twin Cities
Designing a Participatory Model for Integrating Well-Being and Climate Leadership with Somali American Youth
Location: Catalyst

The Somali community in the U.S. are active in many areas that show significant leadership in Civic engagement, policy work, and research. However, they are underrepresented in climate and mental health activism. With Somalia ranked one of the top countries for global vulnerability to climate change, what barriers do Somali Americans face to being involved in climate justice? And what are the facilitators that could allow them to enter this critical work? Furthermore, as refugees from a country that has experienced over 30 years of conflict, the need for Somali youth to be able to communicate about mental health to parents, among themselves, and others is high, but there are few places for youth to find this language and build these bridges to address relevant issues such as climate change and mental health that the community is facing. This project aims to identify and understand the relationships between neighborhood and cultural identities, climate justice, and psychological aspects of trauma and belonging. Implementing the participatory experience-based co-design (EBCD) methodology, six Somali youths between the ages of 20 and 24 showcase resilience by learning research and climate change activism principles. They will be going out into the community to integrate what they have learned from research activities in this community-based research project. The result that we hope this project to have is that these youths reach back to their communities and educate others about what they have learned.

MASHAYLA DALLEY
Westminster University
The Minimum Wage as a Poverty Reduction Tool
Location: Catalyst

Increasing the minimum wage lowers poverty (Stevans and Sessions, 2001, 66-74). However, other factors such as increased participation in the labor force, education levels, and expanding minimum wage coverage have an equal or greater impact on poverty reduction – Implementing one or more of these variables alongside an increased minimum wage shows the greatest impact on poverty reduction. Additionally, the Covid-19 pandemic showed a significant impact on poverty rates. In this paper, I dialectically interrogate arguments and evidence for and against raising the minimum wage to alleviate poverty. I audit theory and empirical data from leading secondary sources and numerical primary data from the US Census Bureau, particularly from the US state of Massachusetts from 2012 to 2021. My findings show that alleviating poverty is a complex problem, however raising the minimum wage does have a clear impact.

**Poverty reduction refers to any decrease in the percentage of the population reported to be in poverty.

CAMERON DEY
Idaho State University
Indigeneity and Enumeration
Location: Catalyst

Enumeration through the census has been carried out in the United States since 1790. Enshrined in the Constitution as the process by which representation is apportioned, it has been politically charged since its first iteration. Despite the efforts of some, it has never been solely administrative and has instead often been used as a political tool. A prime example of which being its inclusion of the three-fifths rule, the clause allowing pro-slavery states to count slaves for determining representation in the House of Representatives, but not extending political rights or protections to slaves. While there is significant research on the negative effects of the racial legacies of the census on African American and Black populations, as they have been disproportionately affected, there is far less research on its effects on other oppressed groups.

This project seeks to lessen this disparity by studying the effects of the census on Indigenous Americans. More specifically, this project seeks to answer the question, how do questions on race and ethnicity on the census, and their available responses, negatively affect Indigenous Americans? This paper examines the census through an Indigenous analytical lens to highlight adverse impacts on Indigenous Americans and argue that federal institutions generate these negative outcomes in distinct pathways. This paper is of interest to those studying American politics, systems of inequality, and politics of difference.

LEEROY DOE
Augsburg University
The Capacity for Care: A Comparative Study of Mutual Aid Efforts During the Covid-19 and HIV Pandemic
Location: Catalyst

Revisiting the HIV pandemic is key to understanding how the current challenges of the COVID-19 pandemic are being addressed. Marginalized communities were the most affected by failed public health policies during both the HIV and COVID-19 pandemic. This paper takes a comparative approach to identify how marginalized groups survived through mutual aid networks during both times of crisis. We analyze cultural artifacts from marginalized communities hit hardest by HIV from 1986 to 1993, and compare and contrast with personal accounts and cultural production from the current era of COVID-19 to add to the growing body of research on pandemics and cultural change. Our results indicate that mutual aid networks are built around harm reduction practices developed most significantly during times of crisis, that comprise an ever-changing infrastructure for survival for those who are abandoned by the state. Moreover, this paper finds that the latent mutual aid networks created by the HIV pandemic are being revived in new forms in response to COVID-19. We refer to the rich mutual aid networks during both pandemics as an infrastructure of care which begins to address the harm caused by gaps in public health policy during a pandemic.

August 1, 2023 - 4:00 PM Anthropology, Gender, and Ethnic Studies Breakout V: Panel E

KENIA MENDIOLA RAMOS
University of Texas at Austin
Pathways to Tenochtitlán's Marketplace
Location: Pinnacle

The Aztec Empire ruled the Basin of Mexico from the 1420s to 1521. Created by the city-states of Tenochtitlan, Texcoco, and Tlacopan they formed the Triple Alliance that governed over the Empire. With the provinces they controlled, the tributary provinces had to travel to Tenochtitlan to pay their tribute by bringing different types of goods. In the literature about the commerce or trading in the Aztec Empire there is no mention of the pathways taken to carry out these activities, so this research aims to figure out the possible pathways taken to bring goods into Tenochtitlan. To answer this question my research will be divided into two parts: finding literature that explains the structure of commerce and trading within the Aztec Empire along with hopefully pinpointing the origin place of goods and using ArcGIS Pro to map out the possible pathways used to have a visual representation of where they used to travel.

SANA OMAR
Southern Methodist University
Understanding the Perceptions of Substance Use within Somalia
Location: Pinnacle

Through civil conflict followed by the collapse of the government in 1991, many aspects of Somalia's regulatory systems have been severely damaged, including the regulation of Somali pharmaceutical companies and the importation and distribution of drugs within Somalia. Despite the lack of regulation, Somalia has not had much of a history of illicit substance abuse. However, some news sources have revealed that opioid abuse has been increasing within Somalia in recent years. This can have severe consequences since Somalia does not have the resources necessary to aid those who might develop a dependence on these substances. There are few studies that address the issue of substance use within Somalia despite the combination of vulnerability of substance abuse due to conflict, lack of regulation of drugs to and within Somalia, and an increasing amount of opioids being trafficked through East Africa as a whole. The perceptions of substances, in particular, is critical information as it can give insight into patterns of use. In order to get a better understanding of what the perceptions of opioids within Somalia are, several sources need to be consulted. This can include conducting a thorough review of the current and past literature, interviewing native-bon Somalis, including those well acquainted with the topic, and looking into any available documents aside from official studies that may provide insight into substance use within Somalia.

FAITHLEIGH PODZIMEK
University of Nebraska-Lincoln
3D Documentation of Basketmaker Petroglyph Panel in Southeastern Utah
Location: Pinnacle

My research involves creating and analyzing a 3D model of an inaccessible petroglyph panel in southeastern Utah. Petroglyphs are images created on rock surfaces by removing material, chiefly by chiseling (pecking) and incision. The rock art panel occupies a cliff face 10-30 meters above the modern ground surface making it difficult to document and likely caused the initial archaeologists who record the site in 1961 to miss the panel. Development of photogrammetry and drone technology provides an effective way to overcome the inaccessibility challenge of this panel. A drone was used to systematically capture over 1,300 partially overlapping high resolution images of the cliff face, including a few measured control points. These images were then "stitched" together using a digital software (RealityCapture) to generate a 3D model of the cliff face and petroglyph panel. This model allows observers to view the panel in great detail without visiting the field and to export 2D images of the wall face as needed. The model can be used to make an inventory of motifs and rock art production techniques and attempt to determine cultural context, time period, and potentially interpretations of cultural meaning. Much of the imagery appears to derive from the Basketmaker II period (~400 BC to AD 400); some earlier elements are also present. Generating a permanent record of an inaccessible petroglyph panel using a non-invasive and efficient method meets the objective of both heritage management and archaeological research. This approach has wider applicability in other archaeological contexts.

August 1, 2023 - 4:00 PM Biology Breakout V: Panel D

IFRAH EDOW
Augsburg University
Testing a Novel Drug on the Swimming Behavior of Daphnia Magna Treated with Manganese
Location: Odyssey

Daphnia magna are freshwater microcrustaceans used for toxicological and water quality studies. The straightforward study of the organism's motor and swimming behavior makes it a valuable specimen to study neurochemical effects. Daphnia locomotion was observed under the effects of Manganese (II) Chloride. Manganese is an abundant element and in prolonged exposure, can result in a neurological condition called manganism. This condition causes movement and cognitive deficits like those seen in Parkinson's disease. To build upon previous research, Daphnia were also rescued from post-manganese toxicity using P7C3-A20. P7C3-A20 is a small neuroprotective molecule discovered to promote neurogenesis by preventing premature neuronal cell death. Daphnia were treated with manganese concentrations between 0.0-100.0 mg/L. This range includes the previously determined IC50 at 43.1mg/L. At the 24-hour time point, the animals were imaged and then treated with P7C3-A20. Locomotion was also imaged at 48 and 72 hours after manganese treatment. Tracking was accomplished using CTRAX, a two-dimensional imaging tool. Data from CTRAX was analyzed using MATLAB, a programming software, and then plotted in Excel. Our working hypothesis is that P7C3-A20 treatment after manganese exposure will result in an improvement in the motor behavior of Daphnia compared to Daphnia that were treated with manganese alone.

GABRIELA GONZALEZ
Rochester Institute of Technology
Antibiotic Impact on the Release of OMVs in E. coli
Location: Odyssey

Sepsis is the number one cause of deaths in hospitals in the United States. Currently it is not known which antibiotic is the best to treat Sepsis. Outer-membrane vesicles (OMVs) are believed to be linked to Sepsis, so the antibiotics used to treat Sepsis should have the lowest number of OMVs released. Nine different antibiotics from three different families were used to treat Escherichia coli. Following this the samples were concentrated and purified using a centrifuge and ultracentrifuge to isolate the OMVs which were then quantified using western blots and nanoparticle tracking analysis. The results found that beta lactams release the most OMVs, while aminoglycosides and quinolones release significantly less. These results will help in the treatment of Sepsis and save lives.

ANDREA PANTOJA
The University of Texas at Austin
Artificial Microbiome Selection as a Method to Improve Engineered Nitrogen-Fixing Bacteria Fitness and Benefit Bioenergy Crops
Location: Odyssey

Determining a more resource-efficient way to provide plants with the nitrogen they require for proper growth would minimize the damaging overuse of nitrogen-based fertilizers and serve as an excellent trait for biofuel crops that are intended to grow in less-than-ideal soil and with as minimal inputs as possible. One possible way to increase nitrogen absorption efficiency includes artificially selecting the microbiome of the plant via a stress that induces symbiotic bacteria to fix more nitrogen. The plant root microbiome is known to provide numerous benefits to its host, including known microbes that fix nitrogen for the plant to use, but the interactions that take place in these communities is largely unknown, often leading the benefits of individual microbes to become muted once they are placed in a community. In an effort to study microbe-microbe interactions and determine if artificial microbiome selection can be used to create more nitrogen-efficient symbiotic relationships, we will place brachypodium distachyon with a known synthetic community of microbes under nitrogen stress and transfer the microbial result over multiple generations. We will also include an engineered nitrogen-fixing strain that overproduces nitrogen at the expense of being a weak strain to determine if this strain can be integrated into a microbe community and if microbe-microbe interactions can aid this weak bacteria. Preliminary experiments will focus on testing the engineered bacteria, including whether it can successfully propagate in a known community and whether it prefers one plant host over another, as well as determining which nitrogen stress to select the microbiome on.

ALEJANDRO RAMOS HURTADO
UC Davis
Investigating Wetlandscape Terrain and Waterbody Morphology as Drivers of Habitat Opportunity for Chinook Salmon Smolts
Location: Odyssey

Large scale restoration is currently underway in the San Francisco Estuary and seeks to increase shallow nursery habitat for several imperiled fish species. These projects cost millions of dollars but highly dynamic tides obscure efforts to measure their intended impact. For example, shallow water provides critical refuge and rearing functions for wetland-associated fishes, but enumerating this feature requires one to integrate depth over a range of tidal timescales. We seek to address this challenge by developing a tidally variable habitat model which incorporates water surface elevation, land surface elevation, and fish depth thresholds. This tool is intended to help elucidate the wetland landform features which engender desirable habitat resources for Chinook Salmon smolts in San Francisco Bay Delta.

August 1, 2023 - 4:00 PM Biology Poster Session 3

ISAMAR LOPEZ-ARGUETA
Cal Poly Humboldt
How does Water Quality and Salinity Affect Coastal Amphibian Occupancy in Humboldt County, California?
Location: Optimist

The basic biology of amphibians includes their highly permeable skin which makes them sensitive to their environments. It has been shown for decades that amphibians are restricted to specific habitats that would not harm them from the moment they are developing eggs to when they are grown adults. In previous studies, saline environments have deterred amphibians from inhabiting these habitats. However, heavy rains form temporary pools in sand dunes. Not only does saline water deter most amphibians from occupying those types of habitats, but water quality is another factor that can affect amphibian occupancy. Based on the variety of aquatic habitats found in Humboldt County, California, this study will conduct visual surveys of amphibians of varying life stages in brackish to saline waters within local wetlands and coastal areas. After recording visual observations, water quality samples will be tested for salinity, pH, and turbidity alongside other variables. Statistical tests will be used to determine if any of these abiotic factors are associated with amphibian presence in the selected sites. After analyzing this data, it is expected that coastal amphibians will occur in a greater abundance within areas of low salinity levels and decreased abundance within areas of high salinity levels.

ANJELICA WAIGHT
California State University, Long Beach
Effect of Stress and Physical Activity Levels on Cardiometabolic Risk Factors in Student Physical Therapists in Los Angeles County
Location: Optimist

Physical therapy students (SPTs) experience high stress due to demanding curriculum and performance expectations. High stress has been associated with increased cardiometabolic risk factors, which may be mitigated through exercise. Few studies have investigated the role of exercise in cardiometabolic health and stress in SPTs, especially in students at a public university. The purpose of this project is to investigate exercise-related indices of cardiometabolic health in SPTs compared to undergraduate students (US). We hypothesize that SPTs will exhibit higher stress scores and lower aerobic fitness, decreased muscular strength, and lower physical activity levels, compared to US. Currently enrolled SPTs (n=45) and US (n=8) between 18 – 45 years were recruited and tested on the following outcomes: 1) stress as measured by perceived stress scale (PSS), 2) 7-day moderate-to-vigorous physical activity (MVPA) through accelerometry, 3) strength as measured by isometric hand grip strength, 1-rep max leg and chest press, and aerobic fitness as measured from VO2peak, 4) blood pressure and fasting glucose. T-tests were used to compare group means. US were younger and had higher BMI compared to SPTs ($p<0.05$). No differences in stress score, strength, blood pressure or fasting glucose were observed between groups. Compared to US, SPTs demonstrated significantly lower MVPA but higher aerobic fitness ($p<0.01$). Our results suggest that SPTs and US did not differ in stress, strength or cardiometabolic health, while SPTs demonstrated higher aerobic fitness. Future work is needed to identify the role of social determinants of health in stress and cardiometabolic risk factors in SPTs.

MAKANA WOODS
California State University, Long Beach
The Biomechanical Effects of Different Resistance Band Positions During a Side Step Exercise
Location: Optimist

Current research indicates that muscles that function to abduct and externally rotate the hip, affect knee joint health. This study was created to analyze the movement pattern and muscle activation of a side step activity using four different resistance band positions on the legs, above the knee, below the knee, on the ankle, and around the feet. This exercise is typically performed to strengthen the hip abductor and hip external rotation muscles. The muscles analyzed for the study are the Gluteus Maximus, Gluteus Medius, and Tensor Fasciae Latae, on the stance leg of both male and female subjects. Subjects will be performing a side step activity across two force plates, and their movement is analyzed in the frontal plane. The usage of a motion analysis and motion capture system, electromyography sensor devices, force plates, and retroreflective markers, will allow for kinematic and kinetic variables to be compared and evaluated across subjects. The subject's height and weight are measured, and they are asked to do a 5-minute warmup on a treadmill, walking or running at a self-selected pace. Maximal voluntary isometric contraction (MVIC) tests are performed to record the activation the muscle produces to maximally contract. As the resistance band is moved proximally after the initial placement of the band for the side step activity, subjects will maintain a neutral head posture. Five successful trials will be recorded, with a focus on the stance leg stepping onto each force plate.

August 1, 2023 - 4:00 PM Clinical Medicine, Dentistry and Public Health Breakout V: Panel D

GIOVANNA ABRAHAO
University of Washington - Seattle
Gender Differences in Care Satisfaction among Patients with a Diagnosis of Heart Failure at a Large Academic Medical Center in the Pacific Northwest
Location: Pathways

Research has shown that poor communication between medical teams lead to errors and adverse patient outcomes. Interprofessional bedside rounds (IBR) in which care team professionals develop daily care plans in collaboration with patients and families, are associated with a reduction in these unsatisfactory outcomes. However, little is known about how IBR and related care outcomes may be influenced by gender differences in patients. In this study, I ask, “Are there gender differences in patient satisfaction with their heart failure team’s rounding model and care plans?” I screened preliminary data from questionnaires completed by patients hospitalized with a diagnosis of advanced heart failure at the time of study enrollment, at 10 days post-discharge, and at 30 days post-discharge as part of an ongoing parent study. I stratified data by an individual’s gender indicated in their medical records and cross-referenced that information with self-reported data from enrollment questionnaires. Participant recruitment is ongoing with more than 60 participants currently recruited, of which 68% are male (n = 42) and 32% are female (n = 20). Preliminary results, based on analysis of 23 quantitative questions on perceptions of rounds, suggest a gender difference in satisfaction: male participants reported feeling that their care team respected the role that they wanted to take in their heart failure management at a 4.6 out of 5.0 whereas female participants rated this at a 3.4 out of 5.0. Additional research is needed to understand associations between adherence to IBR and gender differences in patient satisfaction.

JULYSSA LOPEZ
Westminster University
Utilitarianism and COVID-19
Location: Pathways

Although the COVID-19 pandemic was declared over, the devastating effects it had on individuals and their families all over the world are everlasting. The pandemic has highlighted the impact of utilitarian ethical practices by healthcare providers on marginalized individuals. Although utilitarianism can imply the best for the greater good, it also allows for more inequality, forcing the worst off to accept inequalities that do not benefit them. John Rawls is best known for his Difference Principle and Theory of Justice. These were presented as an alternative to utilitarianism. He worried that utilitarianism may fail to protect the fundamental rights and liberties of a person in its attempt to maximize social welfare. He argues that a principle allowing some citizens advantages that do not benefit the worst off implies that the latter are not equally worthy members of society. This research conducts a systematic review informed by a case study as well as personal interviews through a health equity lens to better understand utilitarianism, Rawls’s principles and decision making. Research could inform how utilitarianism has created a new reality during the COVID-19 pandemic where sickest patients have become the lowest priority, while the healthiest become top priority. It could also inform several more mechanisms for healthcare providers decision making used through a utilitarian lens during the COVID-19 pandemic. Further research on utilitarianism and Rawls’s principles is needed to provide health equity for marginalized individuals with known or unknown underlying health conditions.

ANGEL NAVARRETE
UW Whitewater
Evaluation of STRYV365 Coaching and Video Game to Improve Youth Positivity and Resiliency
Location: Pathways

More than 2 in every 3 children report at least one trauma event by age 16 (SAMHSA, 2023). Trauma events encompass a myriad of obstacles including poverty, death, jail, exposure to substance misuse, and frequent moves. Prolonged trauma can cause toxic stress and impair learning, memory, and self-regulation (NSCDC, 2020). STRYV365 aims to equip youth with a resilient mindset by improving self-management of attitudes, emotions, and behaviors—such that youth can better cope with stress and enjoy positive life experiences. This is accomplished through trauma-informed programs such as Peak Team and Brain Agents. Peak team coaches guide student decision making, social awareness, and emotional management skills during school. Brain Agents is a complementary video game to improve critical thinking and teach breathing exercises.
Our research goal is to longitudinally assess the effects of STRYV365 programs on outcomes of youth feelings, behavior, and schoolwork. All 400 consented participants, grades 5-9 at four Milwaukee schools complete 6 surveys over 2 years, and more than 100 will participate in focus groups and interviews. Themes include sources of pride, emotions when stressed, goals, life challenges, and relations with neighbors. We also will analyze their standardized exams, attendance, and suspensions over 3 years.
We expect STRYV365 programs will increase emotional regulation, cause less fighting, and less suspensions. We expect the combined programs will have the greatest effect, followed by Peak Team alone, with Brain Agents alone being more effective than no intervention.

August 1, 2023 - 4:00 PM Engineering Breakout V: Panel A

LOUKIA AGOUDEMOS
University of Wisconsin-Madison
Engineering Extracellular Matrix-Based Platforms to Model Hypoxic Aortic Valves
Location: Innovation

Calcific Aortic Valve Disease (CAVD) affects 2.5 million Americans and is characterized by fibrocalcific remodeling of the aortic valve extracellular matrix (ECM). Thickened diseased aortic valve ECM hinders adequate oxygen diffusion to the aortic valve interstitial cells (VICs), creating hypoxic conditions. Currently, there is limited research on the role hypoxia plays in CAVD progression or the possibility of contributing to biological sex differences seen in CAVD. Thus, we created gelatin-based scaffolds with embedded aortic valve interstitial cells (VICs) that are 0.6 mm, 1.4 mm, or 2.4 mm thick in order to mimic native valvular thickening and achieve a range of oxygen gradients. To evaluate hypoxia in our scaffolds, we measured levels of angiogenic factors, expression of genes that are transcriptionally regulated by hypoxia, and expression of prolyl hydroxylases, which are regulators of the hypoxia response. We found that VEGF secretion increased with hydrogel thickness. Also, male VICs secreted more VEGF than females. CCN2 is transcriptionally silenced in hypoxia and we found decreased expression of CCN2 in VICs seeded in hydrogels compared to VICs seeded using traditional, 2-dimensional cell culture techniques. GLUT1 is transcriptionally activated by hypoxia, and we found increased expression of GLUT1 in VICs seeded in hydrogels. Prolyl hydroxylase expression was decreased in VICs seeded in hydrogels. These combined data indicate that scaffolds with varied thickness were effective in creating hypoxic conditions. Further, male VICs experience more hypoxia than females, which may contribute to CAVD sex differences.

RYAN GREVSMUEHL
University of Arizona
3D Printing of Conductive Polymers
Location: Innovation

Peripheral nerve loss is serious and can lead to a loss of function in parts of limbs or a limb all together. Recent studies have shown that electrical stimulation via conductive polymer nerve guides helps human neural progenitor cells differentiate and regenerate new nerves. The conductive polymer that will be inspected in this study is a mixture of poly(3,4-ethylenedioxythiophene) polystyrene sulfonate (PEDOT:PSS), Polyvinyl Alcohol (PVA), and deionized (DI) water. The goal of this study is to successfully 3D print structurally stable hollow cylinders by changing how the solution is made or the dimensions of the structure. The solution is made by mixing 4 mL of DI water, 18-24 percent concentration of PVA, and 100 uL PEDOT:PSS for every mL of DI water for 2-6 hours at 95C. Then the solution is put in a freezer at -20C for 1-24 hours. After the solution is done freezing it can be 3D printed using a CELLINK INKREDIBLE into a cylinder that can either have filament or no filament in the middle. After a successful structure has been 3D printed the structure undergoes one or multiple freeze thaw cycles. The data collection is based on the structural integrity of the 3D structures that are successfully printed after the freeze-thaw cycles. It has been found that PVA concentrations above 24 percent do not fully mix together and leaves clumps of PVA which clogs the 3D printer.

XHIVANI VALENCIA
UC Davis
A Fully Implantable Neural Recording Adaptor for use in the Non-Human Primate Animal Model
Location: Innovation

Neural prosthetics have the potential to benefit individuals with conditions such as locked-in syndrome and paralysis. Currently, many brain-computer interfaces require connectors that pass through the scalp, which limits their potential for daily use at home and is a significant source for infection. The Wyss Center's ABILITY system offers a promising solution in that it’s fully subcutaneous, using a wireless system to pass the information from below the scalp to a receiver above the scalp. This system was designed to be compatible with human skulls and has successfully undergone testing on sheep. Before it can be tested in humans the device must undergo validation in non-human primates, who have smaller and rounder skulls than humans or sheep. To accomplish this, the team at UC Davis has decided to create a platform that will be fitted to each individual monkey’s skull and accommodate the size of the ABILITY system. I assisted the team in developing this implantable mounting platform. Specifically, I translated the CT and MRI images into 3D CAD files and worked to customize the platform CAD model to fit each individual skull. Finalization of this platform will enable testing and validation of the ABILITY system in rhesus macaques at the California National Primate Research Center, which will represent an important step toward the realization of fully implantable neural prosthetics for patients.

August 1, 2023 - 4:00 PM Engineering Poster Session 3

NHYIRA ASANTE
Rochester Institute of Technology
Exploring Feminization Maxillofacial Surgery with 3D Surgical Planning
Location: Optimist

The study aims to gain insights into the three-dimensional and bidimensional anatomical changes resulting from surgical interventions performed by virtual surgical planning in the lower facial region with the purpose of facial feminization by evaluating specific cephalometric points. Materials and Methods: The project will be carried out through the analysis of computed tomography (CT) scans in a sample of 10 patients undergoing facial feminization processes in the lower facial third with the following osteotomies: genioplasty, mandibular angle reduction, sagittal bone cuts, and lateral cortex reduction of the mandibular body. The quantified variables will be performed on 13 anatomical landmarks for the lower facial third. All measurements will be made using the software Mimics (Materialise, Leuven, Belgium) of the patients in their original state (pre-surgical) and also will be carried out after the osteotomies are performed virtually. Results: Determine the volumetric and two-dimensional differences quantified to establish the reduction rate in facial feminization processes in the chin, lateral vertex, and mandible angles.

KIMBERLY AYALA
California State University, Long Beach
Geometry characterization of heart valve leaflets using patient-specific cardiac-resolved CT images
Location: Optimist

Advancing personalized care in heart valve treatment requires a comprehensive understanding of the leaflet biomechanics and geometry. The aortic valve, located between the left ventricle and thoracic aorta, usually has three leaflets called the tricuspid aortic valve. The mitral valve, between the left atrium and left ventricle, has two leaflets in its native state but three in artificial valves. The aortic valve opens during systole and closes during diastole, while the mitral valve exhibits the opposite pattern of valve dynamics. This research aims to investigate the leaflet geometries of artificial aortic and mitral valves using patient-specific cardiac-resolved computed tomography (CT) images and computational modeling. CT images have ten time frames, representing a complete cardiac cycle, acquired from patients who underwent heart valve replacement. By utilizing open-source software for medical imaging analysis, I generated the 3D models of the leaflets by extracting their boundaries for each cardiac frame. In the next step, I plan to utilize 3D CAD software to create an idealized tri-leaflets model and compare the efficacy of the two methods to finalize the methods for leaflet characterization, applicable for both post-operative mitral and aortic valves. Key parameters I plan to quantify include the valve area, which indicates the extent of valve opening and closing, leaflet mobility, such as the range of motion and coordination during the cardiac cycle, and valve coaptation, which denotes the proper alignment and closure of the leaflets. I expect to gain insights into various aspects of post-operative valves, and the accentuation of valve leaflets.

August 1, 2023 - 4:00 PM Humanities Poster Session 3

EVELYN ISAIS
University of California, Santa Barbara
Mexican-American Perspectives in the LDS church
Location: Optimist

Amidst the abundant scholarship on Lamanite identification within Latine communities, there is still a need for further exploration and understanding of the perspectives held by Latine individuals affiliated with The Church of Jesus Christ of Latter-Day Saints (LDS). According to LDS beliefs, the term Lamanite originates from the Book of Mormon, considered a sacred scripture by the church, and is used to describe individuals or groups believed to be descendants of ancient inhabitants of the Americas. This study aims to explore how Latine individuals interpret Lamanite identification as an ethnic/racial category and the reasoning behind embracing or rejecting it. Conducted through semi-structured interviews, this research will focus specifically on Mexican-American members and ex-members of the church. By examining the concept of transculturation, the study seeks to delve into the participants' understanding of Lamanite identification as an ethnic/racial identity. The literature on Lamanite identification demonstrates that for some Mexican Americans, it signifies a connection to a lost ancestral history. In contrast, for others, it represents an ethnic/racial category that colonial mentality used to oppress Indigenous groups. Anticipating diverse responses, this study aims to uncover how participants utilize the Lamanite identification to comprehend their positionality in both the United States and Mexico. By shedding light on the nuanced perspectives surrounding Lamanite identification, this research contributes to a more comprehensive understanding of how Latine individuals within the church navigate their ethnic and racial identities, enriching the discourse on cultural heritage and heritage-making practices.

MAYA KING
Loyola Marymount University
A Bridge Amongst Communities: Global Peacebuilding in Museums
Location: Optimist

The United States of America accounts for the highest number of museums in the world, with roughly 33,000 institutions across the nation as of 2021 (Study in Switzerland 2021). In a national context, these museums serve as liaisons that transcend time, space as well as social boundaries, allowing for information and constructive dialogue around global conflicts and phenomenon that not only educates the public on the past and present but also engage audiences in more critically examining and understanding the world around them. Globally, museums are functioning as platforms for necessary socio-political discourse and are leading institutions in serving as bridges in peacebuilding amongst social groups with high social tensions. This research focuses on museums as an operable tool in navigating peacebuilding globally in considering historical contexts of cultural conflicts as well as recentering marginalized groups and their narratives in retelling stories that contribute to national and global identities as well as realities. This ongoing research takes a dual approach to conceptualizing engaged topics through case studies and ethnographic collections, with hopes to assert the complexities of peacebuilding in museums during late-stage capitalism across the globe. Through the examination of museum strategies, programs, and operations, and future collections of personal accounts, this research works towards conceptualizing the engagement of civic action and advocacy in the context of a changing socio-cultural and economic landscape causing the needs of communities, governments, and corporations to intersect in the overall efficacy of museums. In understanding the global efforts in aiding to mend social disparities and intolerance, it is intended that these efforts are utilized to theorize museum organizing in the US to better counter perpetual social unrest.

MONSERRAT LUPIAN
University of California, Santa Barbara
Choosing what to say: An eye-tracking investigation of name agreement
Location: Optimist

When you look at an object how do you know the name of it? For objects with multiple names, how do you decide which name is the most appropriate? Name agreement refers to how well people agree on what an object should be called. Objects with low name agreement (couch/sofa) typically have multiple possible names whereas objects with high name agreement have few (apple). The present study examines how people decide which name is the most appropriate. Because names for objects differ regionally, the first part of the experiment will be a norming study utilizing visual stimuli from the Bank of Standardized Stimuli (BOSS) to gather materials for the eye tracking portion of the study. A Qualtrics survey of about 100 images (50 high and 50 low agreement) prompting individuals to name said stimuli will be used to ensure that the materials properly reflect the participants' high and low name agreement norms. These materials will then be used in an eye tracking experiment which will examine how much implicit competition there is between labels for an item at different points in time. In this study, we will track participants' eyes while they view images and written labels and ask them to pick the label that best matches the image. To measure competition, we will track when and for how long people look at each label during the decision-making process. This will allow for a better understanding of how participants decide between competing labels for a given object.

KOU-NEHNWAY MEHN
Cal Poly Humboldt
An auto-ethnography: The socio-political effects of the Liberian civil war
Location: Optimist

This research project focuses on Liberian immigrants' experiences when settling into the United States faced during the Liberian civil war. The political systems that create complex living environments that lead to migration and the effects of migration policies on displaced populations are addressed through these interviews. The research is a collection of ethnographical interviews with Liberian Americans detailing their experiences migrating to the United States. Interviewees are questioned on their migration experience to their lives in Liberia and the United States: the answers are then coded for similarities. The project is meant to exemplify the experiences of those immigrants who moved to the United States during the Liberian civil war and show the analysis of the socio-political factors of the United States migration policy. The purpose of this study is to see the commonalities of what makes migration to the United States difficult through the policies that are in place: oftentimes, the migration process can be difficult for immigrants. Those who become immigrants through disruptive events (such as war) aren't strangers to difficult situations.

August 1, 2023 - 4:00 PM Math, Statistics, and Physics Breakout V: Panel A

DANIEL ALVAREZ
Loyola Marymount University
Flow Rate Analysis Through eDNA Membrane Holders
Location: Discovery

Our project aims to test flow velocities through eDNA membrane holders under oceanic conditions. By varying initial conditions, we simulate a range of initial oceanic flow rates for both experimental and numerical trials. To obtain experimental data, we use the particle image velocimetry (PIV) method to quantify fluid velocities entering and exiting the membrane holder. To compare experimental results to an analogous numerical model, we use ANSYS (fluent) to model the experimental flow conditions and calculate entering and exiting velocities. We compare results of both trials to cross-verify our results and to further understand how the membrane holder affects ambient flow. Initial results show good agreement between numerical and experimental results, and that flow is relatively unaffected by the holder, i.e. sufficient flow passes around and through the holder. In addition, trials test multiple shaped membrane holders to improve design ideas. Data taken in each trial will be used as supporting evidence for both patent and publication purposes.

KALEB GRAHAM
East Central University
Grad's Nth Moment
Location: Discovery

By examining the J integrals of the Grad approximation from the Boltzmann equation, we discover the nth moment formula of these integrals. We look to the physical definitions in an attempt to understand the Grad 13th moment approximation. We utilize the conservation equations in some of our derivations. We hope to apply this scheme to the Edgeworth approximation.

JEVIDA OWENS
Fayetteville State University
Securing Digital Medical Images Using Linear FSecuring Digital Medical Images Using Linear Feedback Shift Registers Based Encryption "Back Shift Registers Based Encryption
Location: Discovery

Digital society plays a significant role in data communication. The aim of this research is to develop and program a solution for encrypting and decrypting digital medical images. The primary objective is to enhance the security of these images, preventing unauthorized manipulation and tampering during storage or transmission. Digital medical imaging involves electronically capturing images such as CT scans, X-rays, and MRIs, which represent the objects being examined. These images utilize RGB values and other object attributes. The research plan focuses on implementing Linear Feedback Shift Registers (LFSRs) to generate random keystreams that will be utilized for encryption and decryption processes. Additionally, the research aims to investigate potential security vulnerabilities associated with LFSR-based encryption methods. By exploring these vulnerabilities, the research will contribute to the development of a comprehensive encryption software solution.

August 1, 2023 - 4:00 PM Neuroscience Breakout V: Panel A

KIMBERLY CRUZ
University of Nevada Las Vegas
Diabetes and Neuroinflammation, Risk Factors for Alzheimer's Disease
Location: Catalyst

Alzheimer's disease (AD) is progressive brain degeneration with key symptoms including cognitive impairment and memory decline. AD is marked by three core pathological features, including a build-up of beta-amyloid plaques, neurofibrillary tangles, and sustained immune response in the brain. Age is the largest known risk factor for AD. Diabetes - can increase the risk of developing AD by up to 4 fold. Diabetes is marked by elevated levels of sugar in the bloodstream for a sustained period, also known as chronic hyperglycemia. Several animal and human studies have shown that when in a sustained state of hyperglycemia, it can initiate inflammation in the brain and increase AD pathology.
This experiment investigates the effects of high blood sugar levels by examining the neuroinflammatory pathways in the brain to determine whether the increased AD-like pathology diabetes is a result of a hyperglycemic state itself, or if it's the result of hyperglycemia-induced neuroinflammation. We used immunohistochemistry to measure immune cells (i.e., microglia and astrocytes) in the hippocampus region in the brain, which is involved in learning and memory and is the first region to be affected by AD. The preliminary study did not yield significant differences in regard to neuroinflammation severity. However, we are looking to increase our sample size moving forward in this project. Given the rapidly increased trajectory of diabetes and AD diagnosis, it is important to understand the mechanistic role by which chronic hyperglycemia influences neuroinflammation and AD, to better ameliorate treatments targeting AD.

MELIKA CUMMINGS
University of Nevada Las Vegas
Genetic Correlation of Peripheral Blood Cells and Alzheimer's Disease Hints Toward Blood-Brain Barrier Interaction
Location: Catalyst

Blood-based biomarkers for neurodegenerative illnesses such as Alzheimer's disease (AD) have been extensively researched. AD is a neurodegenerative condition characterized by a variety of pathophysiological distinction such as amyloid β peptide aggregation and a gradual decrease in cognitive function. However, the cerebrovascular pathophysiology relationship of this illness remains unknown. It is postulated that dynamic crosstalk between the brain and systemic responses may be crucial. Due to central nervous system proxy and endothelium permeability, peripheral blood cells (PBC) and their abundance are potential indicators of the blood-brain barrier (BBB) postulate. The pathogenesis of PBCs has been related to a negative influence on neurodegenerative illnesses and several peripheral blood cell link pathways have been investigated, yet none have presented a categorical meta-analysis link to AD via abundance and count effect. In this work, we investigated genomic abundance associations of AD populations to peripheral blood cell counts, whilst suggesting cerebrovascular interplay within the AD brain under synergistically genetic enacting biomarkers. Though employing PBC GWAS with AD genotyping data in polygenic index calculations and regression analyses, we associated nine PBC phenotypes with AD case population. Future blood-biomarker determination may supplement clinical diagnosis for early AD detection

KARISSA MCCURN
University of Nevada, Las Vegas
Investigating Alterations of the GABAB Receptor in a Tau Model of AD
Location: Catalyst

Alzheimer's disease (AD) is a neurodegenerative disease that is characterized by diminished cognitive functioning that leads to memory loss. This cognitive decline is due to the presence of neuroinflammation, amyloid beta (Aβ) plaques, and neurofibrillary tangles (NFTs) composed of hyperphosphorylated tau protein (pTau). Evaluations of AD brain tissues also demonstrated alterations in γ-aminobutyric acid (GABA) and GABAergic signaling. The GABA receptor B (GABAB), found on microglia cells, is associated with the regulation of the immune response. Our previous studies illustrate a relationship between AD pathologies and variations of GABAB. In an amyloid model, we reported significant decreases in the GABAB receptor. In addition, a novel mouse model developed by our lab, with a knockdown of the GABAB receptor on microglia, crossed with the amyloid model, led to significant increases in Aβ. These findings indicate overlap of pathways involved in amyloid pathology and the GABAB receptor. Further examination into the implications of GABAB with tau pathology is necessary.

To assess this, our research will use the well-established Tau P301S mouse to investigate changes in several GABAergic signaling mechanisms compared to the wildtype (WT) mice. The goal of this study is to identify any alterations in GABAB. This analysis will require the use of Western blotting to quantify the protein levels of the GABAB subunits; GABAB1 and GABAB2. The exploration of the role that tau pathology has on the modification of the GABAB receptor is crucial to the understanding of AD.

ALAINA ORTIZ-LAVIA
The University of Arizona
Determining the Age of Onset of Cognitive Impairment in Male and Female TgF344-AD Rats
Location: Catalyst

Alzheimer's disease (AD) is an age-dependent neurodegenerative disease characterized by the pathological progression of aggregated and accumulated amyloid beta (amyloidosis) and hyperphosphorylated tau (tauopathy) leading to cognitive failure. Specific brain regions including the hippocampus, locus coeruleus, and cerebral cortex that are associated with learning and memory function are most susceptible to AD pathology. Cross sectional and longitudinal studies by Cohen et al 2013 and Berkowitz et al 2018 utilize the transgenic rat model (TgF344AD), which expressed the two mutant genes, amyloid precursor protein (swAPP)and presenilin-1 genes (PS1ΔE9) resulted in the full expression of AD pathology plaques, hyperphosphorylated tau and development of neurofibrillary tangles. These studies suggest that the onset of cognitive impairment due to disease occurs at 9 months old. In this present study, using the hippocampus dependent spatial version of the Morris Water maze task, we assessed the precise age-of-onset of cognitive impairment in TgF344AD and wildtype (WT) male and female rats at 4, 5, 6 months and 8,9,10-months-of-age. Current results suggest regardless of sex, there are no significant differences observed in spatial memory performance between the AD and WT rats at 4,5,6-month-old. Ongoing testing of the 8,9,10-month-old rats enables for the determination of the precise age of onset due to AD pathology. Additionally, these rats will also be tested on the elevated zero (EZ) maze task to evaluate neuropsychiatric anxiety-like behavior associated with early development of AD. These results may procure a deeper understanding of the early cognitive and behavioral characteristics of AD progression.

August 1, 2023 - 4:00 PM Neuroscience Poster Session 3

LAURA ARROYO
University of Wisconsin-Madison
Persistence of Zika virus-specific antibodies in infants using translational macaque model
Location: Optimist

In-utero Zika virus (ZIKV) infection is a significant public health threat for infants as it can be vertically transmitted from mother to fetus resulting in several health problems including physical and neurodevelopmental deficits. Current diagnostic approaches for confirming in-utero ZIKV infection rely on detection of ZIKV RNA or ZIKV-specific IgM antibodies in infants after birth. These biomolecules are inherently transient making it difficult to reliably confirm in-utero infection, especially in the case of maternal infections that happen early in gestation. ZIKV-specific IgG detection in infants after 12 months of age suggests the development of their independent production of ZIKV-specific IgG when maternal IgG has cleared and not passively transferred maternal IgG, which is suggestive of in-utero infection. Previously, we have shown that ZIKV-infection of pregnant macaques results in differential maternal infection control, like what is seen in human cases. We hypothesize that poor maternal infection control in pregnant macques will result in greater rates of fetal infection causing ZIKV-specific IgG detection in infant samples for more than 12 months. We will measure ZIKV-specific IgG titers in ZIKV-exposed infant serum samples using a whole virion ELISA at 1, 3, 6, 12, 18, 24, 30, and 36 months of age and determine association with maternal virologic control. Further investigation and research may lead to enhanced diagnostic methods that allow for earlier detection and timely interventions in infants, improving their quality of life.

ALEXANDRA GARCIA
University of California, San Diego
Social isolation promotes diverse behavioral responses and impacts medial prefrontal cortex processing of social contact
Location: Optimist

The social environment around us influences our behavior. For example, divergent social behaviors emerge from different durations of social isolation (Lee et al., 2021). Acute social isolation produces prosocial behaviors, and chronic social isolation results in antisocial behaviors following re-introduction to a social group. Many lines of research point toward the medial prefrontal cortex (mPFC) as a potential region for processing and representing features in our social environment. However, the exact time course of social isolation and its impact on social behavior remains an outstanding question, and the neural circuitry underlying social homeostasis remains unknown. To explore how the mPFC encodes social information and undergoes a state change following social isolation, we used in vivo cellular resolution calcium imaging coupled with computer vision and machine learning tools to measure mPFC neural activity and behavioral responses as animals engaged in a juvenile intruder task. As part of this experimental design, adult male mice are presented with a novel juvenile male mouse in acute versus chronic isolation conditions (2hr, 6hr, 24hr, 7d, 14d, and 28d) to first determine how different durations of isolation impact social behavior. We recorded their social interaction time and performed multi-animal pose estimation using SLEAP (Pereira et al., 2022) to discover differences in behavioral motifs. Additionally, we conducted calcium imaging using miniature endoscopes in the mPFC of mice engaged in social behavior after group-housing and isolation. Overall, our findings may uncover the neural mechanisms relevant to our processing of social information to dictate our interactions with the environment.

ALEX REED
University of California, Santa Barbara
Mammalian target of rapamycin (mTOR) activity and expression within the Prefrontal Cortex (PFC) is unrelated to driving sucrose-seeking
Location: Optimist

Previous research has shown that humans with cocaine use disorder exhibit hyperactivity in the ventromedial prefrontal cortex (vmPFC). Similarly, animal studies have shown increased phosphoinositide 3-kinase (PI3K), protein kinase B (Akt1) and mammalian target of rapamycin (mTOR) signaling in the vmPFC of rats following cue-elicited cocaine-craving. Previously, our lab showed Everolimus, an FDA-approved mTOR inhibitor, dose-dependently blocks cue-elicited responding for cocaine as well as incubation-related changes in the PL (prelimbic) subregion of the vmPFC. Herein, adult male and female Sprague Dawley rats conditioned to self-administer sucrose pellets underwent gavage infusion with vehicle or Everolimus prior to cue testing. Subsequent immunoblot studies assessed mTOR activation in the PL and infralimbic (IL) subregions of the vmPFC. Lastly, male and female rats trained to lever-press for sucrose pellets received microinjections of vehicle or Everolimus into the PL. Systemic gavage infusions of Everolimus reduced phospho-mTOR levels in the IL but did not decrease sucrose-seeking compared to early withdrawal controls. Microinjections of Everolimus into the PL also did not have any effect on sucrose intake compared to vehicle treatment. Thus, both systemic and localized administration of Everolimus failed to reduce sucrose-intake and sucrose-seeking, respectively. Since incubated sucrose-craving is not associated with elevated mTOR activity in the vmPFC nor is mTOR activity necessary for incubated sucrose craving, these findings suggest distinct mechanisms and neural adaptations for cocaine vs. sucrose-seeking.

August 1, 2023 - 4:00 PM Psychology and Cognitive Science Poster Session 3

ANDEE GONZALEZ
California State University, Long Beach
Social Media Crypto Frenzy and Financial Decisions on P2P Lending
Location: Optimist

The purpose of this research is to determine how fintech and online platforms affect behavior and financial decision making. Investing and trading apps are common among Gen Z and Millennial users because of the convenience, and trust users have towards online platforms. Social media is well known for incentivising mindless herd behavior and celebrities can utilize these platforms while endorsing crypto. Celebrity endorsement often contributes to poor financial advice of their followers and may lend credibility to scams (White and Wilkoff, 2023). Technology advances changed how we live our lives, and has made us adapt to various mobile applications for different uses. Financial technology is one of the most growing and transformed technologies that is now allowing for new users to start investing, trading, or make impactful financial decisions easier and more accessible. To support financial inclusion, some P2P lending platforms have incorporated blockchain and crypto collateral (Gonzalez, 2022). This study analyzes finance students conditioned through testimonials towards pro-social decision making on a mock P2P site.

ESTEFANI GUTIERREZ
California Lutheran University
Perception of CEO vs AI in the workplace
Location: Optimist

As new technologies, such as artificial intelligence (AI), start to be implemented into the workplace it allows people to complete many tasks more efficiently. This includes how leaders could manage and communicate within the organization. Previous research shows that for a leader to have strong outcomes they must be perceived as credible, legitimate, and honest. This study aims to see people's perceptions of the CEO regarding their openness, credibility, and care for their employees when they think the CEO is using AI to communicate. To test this, we surveyed the general public and asked them to read an email from a CEO to the employees. Participants were randomly assigned to think the email was written by either 1) the CEO, or 2) a communication team, or 3) AI. Participants were then prompted to answer questions regarding their perception of the CEO. The key hypothesis is that when the CEO communicates through an email written by AI, the participants will show negative feelings toward the CEO. Therefore, our anticipated results are that people who read the email that was said to be written by AI will feel that the CEO was not very open with them, that the CEO didn't care about their employees, that the CEO wasn't credible, and that they don't have much confidence in their CEO. The importance of this study is to get a better understanding of how people will accept AI being used by leadership to manage a company or communicate with the team.

SAVANNA HERNANDEZ
California State University, Long Beach
Home Math Environment versus Siblings
Location: Optimist

Research on the Home Math Environment (HME) disproportionately highlights white and middle-to-high SES families and results from these studies may not be generalizable other cultural contexts. Given the rising U.S. Latino student population entering the U.S. school system, it is important to engage this population in research on the HME and ensure strength-based approaches are taken into consideration to increase Latino student's success. In this study, we conduct an analysis of U.S. Latino parent participation with their child's education to examine how their HME engagement varies across the number of children in the household. Specifically, we will take into consideration if, and how, this variation occurs across direct and indirect HME activities. Results of this study will provide researchers with insights to facilitate further exploration of the HME and intervention development within Latino family's contexts to continue to examine Latino children's learning of math language during the preschool years.

JASMINE LUU
Wesleyan University
Investigating the Efficacy of Non-Invasive Brain Stimulation on Symptoms and Cognition of Schizophrenia: A Systematic Review and Meta-Analysis
Location: Optimist

Schizophrenia is typically diagnosed by its positive symptoms of hallucinations, delusions, and irregular behavior. However, the negative and cognitive symptoms of schizophrenia are often overlooked despite its profound interference with everyday life and functionality. Currently, antipsychotic medications primarily treat positive symptoms and have shown to have minimal effects on negative and cognitive symptoms of schizophrenia. Antipsychotic medication's lack of efficacy brings attention to alternative treatment options. Although most studies have investigated its use in depression, a growing number of studies have begun to assess electrical stimulation effect on symptoms and cognition in schizophrenia. There is a lack of research looking into numerous moderating variables such as stimulation site, dosage, etc. on negative and cognitive symptoms. These issues will be examined by performing a systematic search and conducting a meta-analysis following PRISMA guidelines (Moher et al., 2009). This study aims to determine whether these non-invasive brain stimulation treatments are viable as well as identify various treatment or patient characteristics that may affect the efficacy of these treatments. By refining and progressing the issue of non-invasive brain stimulation as an effective treatment option for the negative and cognitive symptoms of schizophrenia, future research could focus on pinpointing the active components of these treatments. Some key components would include finding the underlying mechanisms involved in specific negative and cognitive symptoms.

August 2, 2023 - 9:00 AM Clinical Medicine, Dentistry and Public Health Breakout VI: Panel E

BLAIN DENGET
North Carolina State University (NCSU)
The Effect of Gadolinium Retention in Children's Microbiome and Health Disparity Impacts'
Location: Pinnacle

Gadolinium-based contrast agents or GBCAs have been used since 1988 in medical settings for internal imaging specifically in magnetic resonance imaging (MRIs). In recent years studies have focused on gadolinium retention in the body and trace amounts of the metal has been found in the brain, tissue, bones, and children's fecal matter. Cadmium is another toxic metal similar to gadolinium, and both have been associated with various detrimental health outcomes, however, recent evidence suggests that when these metals are present together, their toxic effects may be enhanced through synergistic interactions. Previous research has also assessed the effects of the toxic metals in adults but few have analyzed the ramifications in children and none have investigated the possible effects on the gut microbiome. The human gut microbiota plays a crucial role in maintaining overall health, influencing various physiological processes, immune responses, and metabolic functions. Furthermore, emerging evidence suggests that gadolinium retention may contribute to health disparities among different populations. Certain demographic factors, such as race, ethnicity, and maternal college education, have been identified as determinants of gadolinium accumulation in the body. In this project scientific data collected will investigate a sample of children with gadolinium retention and compare it against another group of children. The fecal material samples will be compared for associations with microbiota communities, obesity, demographics, and other covariates. The implications and long-term effects of gadolinium retention are not yet fully understood but regulatory agencies, such as the FDA, are reexamining the possible implications of GBCAs and creating guidelines and recommendations accordingly. Despite the effects not being completely comprehended it is a harmful chemical and should not be retained in the body. The purpose of this research is to bring awareness of this corrupting chemical and encourage future research with larger study groups.

LAUREN HERRERA
The University of North Texas at Dallas
Quantification of PET Radiomic Features in Breast Cancer Patients
Location: Pinnacle

The medical imaging world is currently in the process of exploring the striking predictive abilities of radiomics to revolutionize disease-specific personalized treatment management. Radiomics extracts quantitative data from images that can be analyzed and correlated to tumor biology and thus disease status. Radiomics can be especially powerful for cancer detection, prognosis, and treatment evaluation. In this retrospective study, we examined the radiomic changes within 5 patients with breast cancer undergoing neoadjuvant chemotherapy (NAC) at three stages (visits) pre-, during, and post-treatment. By extracting radiomic features, this project aims to quantify the changes before, during, and after the NAC visits. The data used in this study were obtained from public domain Quantitative Imaging Network (QIN) Breast Collection. Radiomic features from the breast cancer region were then semi-automatically extracted using the open source software, 3D Slicer. 107 radiomic features were extracted and then analyzed statistically using a t-test. The results show that radiomic features can differentiate tumor biology between each visit due to the neoadjuvant chemotherapy. This shows that quantifying radiomic features is clinically relevant to tumor biology, and can potentially aid as an adjunct during NAC.

EBELIN GUADALUPE MONTOYA MARTINEZ
UC Davis
Effects of Epilepsy Surgery on Nondominant Brain Hemisphere Functions
Location: Pinnacle

Epilepsy is a disorder of abnormal electrical activity, or seizures, that affects the brain. Underrecognized symptoms of epilepsy include impacts on social interactions, decision-making capacity, or mood. Epilepsy surgical treatment planning includes identifying where seizures start relative to where neurological functions are located. Current clinical methods evaluate dominant-hemisphere functions, such as language, memory, or sensorimotor function. There are not quantitative tests for nondominant hemisphere neuropsychological outcomes that significantly impact quality of life (QOL), such as decision-making or emotional tone perception. This research assesses how well, if at all, nondominant-hemisphere functions are considered in pre-surgical planning to determine what percentage of patients who undergo surgery for epilepsy were counseled about functional losses other than language, sensorimotor symptoms, or memory. This research will reveal whether nondominant-hemisphere surgical costs were adequately predicted during treatment planning by assessing pre and postoperative QOL, emotional awareness, and decision-making. Completion of this research contributes to the goal of comprehensively identifying likely functional losses from epilepsy surgery, including those that are not well-assessed by current methods, to help counsel patients about risks and benefits of surgical treatment for epilepsy. The next step of this research is developing quantitative algorithms to gauge nondominant hemisphere costs of epilepsy surgery.

TERESA NOLL
University of Arizona
The Blood-Testes Barrier and Leukemia
Location: Pinnacle

The blood-testis barrier (BTB) is a tight blood-tissue barrier that divides seminiferous epithelium in the testicles. Leukemia is a cancer of bone marrow cells that causes errors in DNA replication. Acute lymphoblastic leukemia is a common childhood cancer that rapidly progresses. There are chances of relapse when cancer is once again present in the body after it was determined to be cancer-free. Males are 40% more likely to experience a relapse due to the BTB. Leukemic cells will become trapped in the testicles when the BTB contracts, and released when it relaxes. These released leukemic cells will then once again spread in the body. Transporter dynamics may affect results depending on the models used. Experiments conducted in vitro determined that human models provided more accurate transporter dynamics in comparison to mouse models. These xenobiotic transporters and further research will aid drug discovery in regard to drugs that are able to pass through the BTB and target leukemic cells. In this continuation of a study from the summer of 2022, an in-depth analysis of mouse histology provides insight into the destruction of tissue in the liver and kidneys. Using Sprague-Dawley rats, the same experiment is replicated to an animal which is more similar to the human physiological function in comparison to the aforementioned mouse models.

August 2, 2023 - 9:00 AM Education Breakout VI: Panel B

EDUARDO AVILA
Wichita State University
An Analysis on the Effect of Transportation Use and Student Absenteeism Literature Review
Location: Odyssey

Student absenteeism is an issue facing many school districts across the United States. Literature in the field of education has often overlooked the effects of transportation on student attendance, creating a need for educators and administrators to further examine the efficacy of public transportation programs that allow students to ride fare-free to school. An extensive assessment of the literature revealed that there are few papers investigating the relationship between student absenteeism and the use of public transportation. The link between attendance and transportation has largely been focused on school busing programs, which have been found to increase student attendance and reduce chronic absenteeism. However, fare-free public transportation programs were found to harm student attendance. Further research should examine how unlimited access to stops can affect student attendance. Additional research could also look at how similar programs in rural areas perform. Further findings could aid school districts in budgetary decisions to keep such programs and help to reduce chronic absenteeism.

LUIS BOLANOS JIMENEZ
UCLA
A Freirean Approach to Analyzing Mentoring Practices Among Formerly Incarcerated Community College Students
Location: Odyssey

This study aims to understand the relationship between credible messenger mentoring practices, involvement with faculty-informal mentoring, and their impact on the educational journey of formerly incarcerated community college students. Therefore, the following research questions are asked: 1)How does credible messenger mentoring impact the pathway of formerly incarcerated community college students into a four-year institution? 2)How does the involvement with faculty-informal mentoring impact the pathway of formerly incarcerated community college students into a four-year institution? The study will employ a Freirean theoretical framework and methodology by applying Paulo Freire's problem-posing method. Additionally, Dr. Fierros and Dr. Dolores Delgado Bernal's platicas Chicana/Latina Feminist methodology informs the study's data collection methods with the goal of not furthering the co-researchers trauma or causing them to relive traumatic experiences with authoritative figures. Notably, Freire's three-step approach will allow the transformation of participants into active co-researchers. 1) Through an unstructured platica, co-researchers will help name the problem. They will be asked what they think are the most important issues or challenges they have confronted as formerly incarcerated students at HighPeak Community College. 2) Based on their responses to the previous question, co-researchers will help identify the causes of the problems they named through an unstructured platica. 3) The co-researchers and I will platicar how we can understand the causes of the problems named while solving the issues they have identified. It is suspected that the co-researchers will identify the issues or challenges faced at HighPeak Community College surrounding the themes of community and resources.

JIAONNY JENKINS
Roosevelt University
Elastic Educators: A Critical Look at Educational & Professional Development Practices in Connection to Black Literature
Location: Odyssey

As social-emotional development continues to be a goal of public-school education, it is essential for educators to be provided the tools needed to effectively understand their personal relationship with imperialism and white supremacy and reasonably account for the impact this position has on the communities in which they educate. Educators are asked to teach students ideas like self-confidence, empathy, racism, colorism, homophobia, etc., through literature without formal guidance for navigating the role of the educator as an individual in relation to the topic being taught and the students themselves. The deeply personal relationships teachers build with students are important and require environments and practices that nurture them. By creating the most updated literature review on the topic, this research proposal intends to create room for full actualization of a common priority within the education field: The students' needs. This proposed study aims to answer the following questions: What do students need to feel safe in their learning space? What does professional development look like in a profession that relies on social and emotional connections to be effective? How does the introduction of Black literature into the literary canon affect traditional teaching pedagogy? In this review, I will analyze the relationship between education and Black liberation, and take a critical look at self-efficacy in teachers and current professional development practices in an effort to understand the role each of these aspects plays in the creation of equitable spaces for Black students.

August 2, 2023 - 9:00 AM Engineering Breakout VI: Panel B

VICTOR DIAZ
California Polytechnic State University, Humboldt
Enhancing Deception Detection: A Multimodal Approach Using Supervised Machine Learning with Visual Features
Location: Pathways

Deception detection is a complex challenge. Research has demonstrated that the accuracy of the latest computerized polygraph testing techniques is 98% accurate [8.]. Several human-controlled variables help to achieve this level of accuracy[8.]; hence there is a lack of availability when implementing these techniques. This is where this research aims to reduce the requirements of lie detection by relying on Visual Features that are tracked with computer vision. The proposed multi-modal will track movements of the face and body to detect when a person is trying to detective. The model proposed will use data consisting of videos collected from public court trials[15.] and a variety of videos from Youtube. The classifier features to be tracked: Movement and Ground Truth micro expressions with Improved Density Trajectory (IDT), Facial Action Units (AU) with OpenFace, and MUMIN coding with 3D-CNN. By using fusion, the features will be processed utilizing a variety of algorithms: Decision Tree, Random Forest, Support Vector Machine (SVM), and Logistic Regression. This research aims to find a model with a methodology that increases or matches the current deception detection accuracy using only Visual Features.

ETHAN FELDMAN
Rochester Institute of Technology
Detecting Review Manipulation using Transfer Learning in Heterogeneous Knowledge Graphs
Location: Pathways

Recent studies have revealed an increasing trend of "fake" reviews in the vast array of products available on e-commerce platforms. Consequently, consumer confidence in online rating platforms has plummeted to an unprecedented low, causing a trust crisis between individuals and companies. Recognizing the significance of this issue, researchers and practitioners have devoted considerable time and effort to detecting these deceptive reviews. Graph neural network (GNN) machine learning models have become a popular tool for detecting this manipulation; however, most existing methods suffer from a variety of limitations. Numerous models predominantly depend on homogeneous datasets that focus on only a single type of manipulation. Furthermore, a significant number of models struggle to obtain genuine fake reviews for training purposes, leading to the use of artificially generated reviews. This approach introduces bias into the models and hampers their ability to consider broader contextual information beyond their specific manipulation focus. To address these shortcomings, our study employs a novel zero-shot transfer learning approach using a heterogeneous GNN to detect review manipulation. By utilizing a network of interconnected review-reviewer-product data, we can provide valuable context for training the model. Additionally, leveraging the plentifully labeled product nodes allows us to transfer insights to review and reviewer observations that lack known labels. Our method manages the limitations of previous approaches and creates a model more robust to deception. We hope to improve manipulation detection and increase trust in online rating platforms.

JAVON HICKMON
University of Washington
Thinking Beyond Images: Using Chain-of-Thought Prompting to Harness the Power of Language in Multimodal Models
Location: Pathways

Image classification is a fundamental problem in Computer Vision, and recent progress in Multimodal Machine Learning has enabled researchers to train large models using both images and text as input. Alongside the improvements in Multimodal Learning, recent work in Natural Language Processing has demonstrated the effectiveness of chain-of-thought prompting — a technique that allows the model to generate its own series of intermediate steps — in improving the performance of Large Language Models, particularly for tasks that involve common sense and symbolic reasoning. Despite these recent advancements, little work has been done to understand how improvements for Large Language Models affect the performance of Multimodal Models. I aim to demonstrate that incorporating chain-of-thought prompting into Multimodal Models can lead to significant improvements in accuracy for the task of few-shot image classification. I leverage OpenFlamingo, a powerful open-source 9 billion parameter Vision Language Model, to generate intermediate descriptions for the classification results, eliciting a chain-of-thought. Preliminary results indicate chain-of-thought improves the accuracy of few-shot image classification. Improving the task of image classification furthers the generalizability of Multimodal Machine Learning, effectively reducing the impact of hidden biases from a single modality of data which will result in fairer and much more representative systems.

JIMENA JIMENEZ
University of Minnesota Twin Cities
Applying the Theory of Stochastic Computing to Networks of Spike-Based Neural Networks for Ultra Low Power Applications
Location: Pathways

Spiking neural networks (SNNs) have emerged as a third-generation artificial neural network, employing spiking neurons to encode data through spikes, closely resembling biological neurons. SNNs offer promising potential for efficient computing, leveraging event-driven, parallel processing, and are being explored for modeling the dynamics of the human brain and implementing compact deep learning neural networks. This research introduces a novel approach to implementing SNNs for ultra-low-power applications using stochastic computing. Stochastic computing (SC) is a unique computing paradigm that operates on probabilities rather than traditional binary numbers. Probabilities are encoded via streams of 0s and 1s. One of the major advantages of SC is its simplicity in performing multiplication operations. Unlike traditional algorithms that require complex multiplication circuits, SC achieves multiplication using just a single AND gate, which significantly simplifies the computation process. This research presents two models for a digital representation of the Izhikevich model spiking neuron synthesized for a field-programmable gate array (FPGA). One model employs a classical binary radix representation, while the other integrates stochastic computing theory. The stochastic computing-based design reduces the number of logic gates required for computation, resulting in lower power consumption and improved scalability. These findings contribute to advancing energy-efficient neuromorphic computing architectures by thoroughly investigating the application of stochastic computing in spiking neural networks.

August 2, 2023 - 9:00 AM Math, Statistics, and Physics Breakout VI: Panel B

ANGELEA ARNETT
University of Nebraska-Lincoln
Acoustic Levitation and Quantum Mechanical Behavior of Styrofoam Balls
Location: Innovation

We investigate two different systematic arrangements of ultrasonic (28,000 Hz) acoustic waves and Styrofoam particles in combination with schlieren imaging. For both arrangements, schlieren imaging is used to visualize the particle's motion within the acoustic wave. The first arrangement is a standing acoustic wave in which Styrofoam balls are levitated. Using a camera to image the system, the positions of the levitated Styrofoam balls are recorded and compared to theoretical predictions of the positions due to the acoustic radiation force. We find that the acoustic radiation force can be used to map the spatial pattern where the Styrofoam balls are levitated in the acoustic waves. The second arrangement is a double-slit acoustic system with Styrofoam particles launched into the system. Trajectories of the Styrofoam balls will be recorded using computer software, and then compared to an experimental simulation of Bohmian trajectories that are predicted for a double-slit electron diffraction system. The simulated trajectories are created by using the quantum potential and Schrodinger equation to map the evolution of all possible particle positions that are under consideration. We look to find if a double-slit acoustic wave diffraction pattern with particles being launched into the system may be a systematic visual analog to an electron undergoing diffraction in a double slit. We finish by discussing the possible future applications of this experiment as an instructional tool. We gratefully acknowledge support from the U.S. National Science Foundation under Grant No. PHY-2207697.

OSMIN CACERES
University of California, Los Angeles
Imaging Low Surface Brightness Galaxies Using Hydrogen-Alpha Emission
Location: Innovation

Although galaxies appear to be defined by their starlight, almost all galaxies like the Milky Way have flattened disks, the very outermost parts of which are filled with hydrogen gas, and not stars. HII regions are clouds of ionized hydrogen gas commonly found in the outer arms of a spiral galaxy where bluer massive stars form. These very hot stars also ionize the hydrogen, and the recombining electrons give rise to Hydrogen-alpha emission. We are using deep imaging of nearby galaxies to explore Hydrogen-alpha and far-ultraviolet emission as indicators for the rate of star formation in the edges of nearby galaxies. The Halos and Environments of Nearby Galaxies (HERON) project images 30 nearby large galaxies in Hydrogen-alpha and will be compared to far-ultraviolet data from the Galaxy Evolution Explorer satellite. Under the supervision of Professor Rich, I planned and executed observations using the CCD cameras mounted on the Centurion 28-inch and Centurion 18-inch telescopes. The CCD images were captured using automation software, Sequence Generator Pro and Maxim DL. We have conducted observations for over 100 nights, and have obtained nearly 1000 hours of data on 30 nearby galaxies. The results will improve our understanding of star formation, the accretion of hydrogen from the intergalactic medium, and the process of photoionization caused by hot ultraviolet stars and active galactic nuclei.

CHRISTIAN MARTINEZ
University of Arizona
Type IIn Supernovas and their Apparent Bias in their Blue-Shifted Hydrogen-Alpha Lines
Location: Innovation

Type IIn supernovae (SNe IIn) are characterized by their spectral features, notably the presence of a blue-shifted hydrogen alpha (H-alpha) line in their spectrographs. This phenomenon has puzzled astronomers for years, prompting investigations into its cause. We shall present novel research aimed at elucidating the mechanism responsible for the blue-shifted H-alpha line and propose a compelling explanation involving the role of dust formed within the supernova.

Our research findings indicate that dust, generated during post-Supernova, plays a crucial role in masking any redshifted Hα line in the spectrograph. By analyzing observational data from a sample of Type IIn supernovae, we have identified a consistent pattern where the H-alpha line exhibits a blue-shifted profile. This blue-shift can't always be the case when viewing all Supernovae.

We propose that the presence of newly formed dust within the supernova scatters and absorbs the redshifted photons, effectively masking their detection in the spectrograph. The scattering and absorption processes by the dust produce a net blue-shifted effect on the observed H-alpha line. This explanation not only accounts for the observed spectral characteristics but also provides insights into the formation of dust within Type IIn supernovae.

Our research advances the understanding of the complex interplay between dust and the spectroscopic properties of Type IIn supernovae. By demonstrating how dust causes the blue-shifted Hα line, our study challenges previous hypotheses and provides a compelling explanation for this mystery. The findings here have implications for future observations and efforts aimed at unraveling the mechanisms underlying Type IIn supernovae.

ISAIAH STEVENS
North Carolina State Unviersity
Modeling CTEPH Hemodynamics Using Radius Correction Algorithms and 1D Fluid Dynamics Simulations
Location: Innovation

Chronic thromboembolic pulmonary hypertension (CTEPH) is a fatal pulmonary artery disease characterized by mean pulmonary arterial pressure (mPAP) greater than 20 mmHg, presence of lesions, blood clots, and other obstructions. Surgical intervention is required to treat CTEPH, either through the removal of clotting factors by pulmonary endarterectomy or increase blood flow past embolisms by balloon pulmonary angioplasty (BPA). Mathematical models of pulmonary hemodynamics can alleviate the requirements of these procedures by providing hemodynamical insight in silico. Prior to hemodynamic simulation, data on the patient's pulmonary arteries must be obtained through images. CT images from 1 control and 7 CTEPH patients were obtained from Duke University Hospital. From these images and manual segmentation, volumetric models of the pulmonary arteries were obtained using 3D Slicer. Centerlines, which contain data on radius, length, and position through every artery, were extracted using the Vascular Modeling Toolkit. From these, changepoints—points within a vessel expressing significant statistical difference—were identified. Changepoint locations in each vessel were then used to create a radius-correction algorithm. Likewise, an asymmetric binary tree was used to extend arterial networks past their centerlines. Simulations were then used to generate blood pressure and flow of a patient's arterial network. Due to segmentation uncertainty, multiple network configurations were used and parameter changes were observed. Comparing these quantities between subjects will assist in the standardization of critical values, such as mPAP and blood flow, in CTEPH diagnoses. Further, in silico optimization of mPAP values through lesion removal will decrease potential patient risk and hasten CTEPH intervention.

August 2, 2023 - 9:00 AM Neuroscience Breakout VI: Panel B

PENELOPE LILLEY
University of Washington
Restoring Function in Spinal Cord Injury with Non-invasive Stimulation
Location: Optimist A

Spinal Cord Injury (SCI) can often result in loss of motor, sensory and autonomic function. The current standard of care is patient-specific physical therapy (PT) interventions to allow existing neural pathways to provide some compensation. Transcutaneous electrical stimulation is a new technique where electrodes placed on the skin over the spinal cord send electrical pulses to nerves in or near the spinal cord. Transcutaneous stimulation can be combined with PT to improve arm or leg function. Does the timing or combination of these two interventions affect the recovery of the participants? Four participants in this study have an incomplete C2-C7 spinal cord injury, their injury occurred at least one year before the study, resulting upper extremity dysfunction. Baseline measurements are conducted over four weeks. Intervention consisted of six weeks of PT alone and six weeks of stimulation combined with PT, in a randomized order, followed by a twelve-week follow-up. Preliminary results indicate that improved upper extremity motor function and sensation were superior with PT combined with transcutaneous stimulation. These gains in function and sensation persist throughout the follow-up period without further stimulation. Transcutaneous spinal cord stimulation paired with PT could become the new standard of care for improving outcomes in people spinal cord injury for more than one year. In addition, future research may see greater benefits if the intervention can begin less than a year after injury, when the spinal cord may have a greater capacity for recovery.

DANIEL MEZA
UCLA
Determining Optimal Calcium Indicator for Imaging Neuromuscular Junction Development in C. elegans
Location: Optimist A

The first innate behavior expressed by embryonic C. elegans is a dorsal-ventral head oscillation governed by a group of six glutamatergic IL1 neurons. These neurons are mechanosensitive and synapse with head muscle cells, but precisely how they regulate this behavior isn’t known. To determine whether the neurons are muscle-excitatory or inhibitory, Genetically Encoded Calcium Indicators can be used to see if neural activity corresponds to behavior. GCaMP is a group of these indicators and has multiple generations and variants for a range of calcium affinities and thus sensitivities and dynamics. We are interested in determining which version of these GCaMP proteins is optimal for the imaging of neuromuscular junctions in C. elegans embryos. To compare the relative intensities between different GCaMP we created separate constructs containing the following: a GCaMP; a muscle-specific promoter unc-120; and a calcium-independent fluorescent protein, to act as a counterstain. We have generated two strains with GCaMP7s via microinjection, along with our previously established GCaMP6f strain. Preliminary imaging has demonstrated that analysis is possible, but currently expression of the construct isn't consistent between worms or cells. Integration of the construct into the genome is currently underway to produce worms that consistently express the fluorescent proteins in all muscle cells. Further imaging and analysis will follow. Determining the appropriate reagent will allow us to better understand the emergence of behavior.

ALLY SANCHEZ
Westminster University
How Cellular Stress Placed Upon an Organism Change Locomotion, and Reproduction Patterns
Location: Optimist A

Aging can be measured by a progressive decline in mitochondrial function which causes the slowing of cellular metabolism which influences mobility and locomotion. Behavioral and genetic experiments have focused on genetic pathways by which cellular oxidation affects how an organism moves and thus how it ages. Recent studies have that there is a critical window during development when mitochondrial stress can exert beneficial effects. This has led to the concept of mitohormesis, a term used to define the activation of an adaptive stress response that results in a beneficial effect on health and lifespan. To better understand the connection between cellular stress, physiological changes, and aging, locomotion and reproduction assays will be utilized in a small transparent nematode named Caenorhabditis elegans (C. elegans), which has genome counterparts to some human genes. The impact of stress on C. Elegans will be observed by depriving them of food and exposing them to drastic changes in temperature, to observe and quantify what stress placed upon an organism does to their locomotion and reproduction patterns. We expect these stressful changes to the environment to cause a decrease in locomotion speeds, and a reduction in reproduction rates, this study should provide us with additional information on aging in a model than can help us understand the influence or cellular stress on an organism.

TORIAN STYLES
University of Arizona
Beyond Brainstorming: Rumination as a Potential Catalyst for Creativity
Location: Optimist A

In recent years there has been a growing body of literature which seeks to employ network science as a means to describe various cognitive phenomena. One such approach involves implementing semantic networks as a measure for creativity (Beaty & Johnson, 2021; Siew, Wulff, Beckage, & Kenett, 2019), which despite being historically difficult to effectively operationalize due its complex and multidimensional nature (Beaty & Johnson, 2021), has nevertheless been a salient focus of cognition researchers due to the high social value placed on creative output. One of the factors which has emergently been shown to correlate positively with creativity is rumination, which can be characterized by persistent, negative, and repetitive thinking about one's self or experiences (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008), and which has been associated with the presence and exacerbation of psychopathologies like depression (Watkins & Roberts, 2020). Despite its negative reputation, extant literature seems broadly to corroborate this positive association (Verhaeghen, Joormann, & Aikman, 2014; Wang, Zhao, Yuan, & Shi, 2021). However, there appears to be an absence of literature examining this link through a network-theoretic lens, an approach which could help strengthen the empiric link between rumination and creativity, in addition to further clarifying semantic distance as a robust operational surrogate for the latter. This presentation seeks to summarize research conducted to better establish the aforementioned link by answering the following question: Is there a statistically significant, positive correlation between mean semantic distance and trait rumination in a task of chained free-association?

August 2, 2023 - 9:00 AM Psychology and Cognitive Science Breakout VI: Panel E

SABRINA FLORES
University of Washington
Identifying Effective Pharmacological & Non-Pharmacological Treatments for ADHD in Adolescents
Location: Optimist B

Attention Deficit/Hyperactivity Disorder (ADHD) is one of the most common psychiatric disorders affecting adolescents. A successful transition to adulthood requires interpersonal, organizational, and planning skills, making adolescence a critical time to treat ADHD symptoms, which include distractibility, disorganization, hyperactivity, and impulsivity. Sibley et al. (2014) concluded that medication and behavior therapy produce similar positive effects on ADHD symptoms in adolescents. This project aims to update findings of the prior review based on the past decade of research. First, I conducted an electronic database search using four categories of terms: (1) sample age, (2) disorder, (3) treatment, and (4) randomized control trial. Inclusion criteria were then applied: (1) published between 2013-present, (2) ages 10-19, (3) ADHD diagnosis, (4) quantitative data reported for at least one ecologically valid outcome measure (e.g., ADHD symptom severity), (5) in studies where individuals not meeting age or diagnostic criteria are included, data must be presented separately, (6) treatment efficacy study. 20% of the studies were randomly selected for an inter-rater reliability probe. Next, I collected data on type of study, methodology, and participant demographics for every study. Effect sizes were calculated for several outcome measures. This review is still in its preliminary stages, but predicted findings include considerable growth in the number of effective treatments for ADHD in adolescents. The next steps will involve determining trends for each treatment and concluding findings. This review will update the current literature on adolescent ADHD and will allow for more effective treatment.

CHRISTINA LOZANO
Fayetteville State University
Exploring Support Patterns in Online Communities for Inflammatory Bowel Disease: A Qualitative Analysis
Location: Optimist B

Inflammatory bowel disease (IBD) is a severe autoimmune condition characterized by significant and often debilitating gastrointestinal symptoms leading to embarrassment, pain, isolation, and frustration. Online support groups have emerged as valuable platforms for individuals with IBD symptoms to seek solace, share experiences, and access support. This research aims to comprehensively explore the types of support sought and received by individuals in online communities dedicated to IBD. An additional goal is to bridge the gap in understanding between healthcare providers and patients, ultimately improving the quality of healthcare services provided. Utilizing a qualitative exploratory design, the study employs a content analysis of posts from IBD-related subreddits on Reddit, a popular social media site. Data was coded using a previously developed coding scheme from a pilot study. A qualitative thematic analysis revealed that users most often sought medical advice, with “medication related clarity” being the most popular, followed by “diagnostic/symptom clarity.” Additionally, “expression of negative emotions/thoughts” was found to be associated with the majority of posts. The significance of this research lies in equipping healthcare providers with a deeper understanding of patients' needs and preferences, particularly regarding diagnostic clarity and taboo/personal topics related to IBD. The findings have implications for health psychology, gastrointestinal medicine, and cyberpsychology.

Keywords: Inflammatory bowel disease, online support groups, social media, qualitative analysis, support seeking, medical advice, patient care, information needs.

PAW SHELL
University of Minnesota
The Relationship Between VMS and Autonomic Function to Establish Whether Females with VMS have Autonomic or Vascular Dysfunction that Contributes to BP Dysregulation
Location: Optimist B

Cardiovascular disease (CVD) is the leading cause of death in postmenopausal females, and vasomotor symptoms (VMS; hot flushes and night sweats) of menopause are associated with an increased risk of CVD. However, the mechanisms of this increased CVD risk in females with VMS are still unknown. Autonomic dysregulation, sympathetic and parasympathetic dysfunction is a potential driver of CVD risk in postmenopausal females. This study aims to determine how a hot flush influences sympathetic activity and blood pressure in postmenopausal females. This study will involve two visits. Visit One: Participants will provide consent and complete questionnaires to determine eligibility, history of hot flushes, and physical activity questionnaires. The questionnaires are Patient Health Questionnaire (PHQ-9) to evaluate depression, State-Trait Anxiety Inventory (STAI) to assess levels of anxiety at the moment and generalized anxiety. In addition, participants are also required to fill out the Menopause-Specific Quality of Life Questionnaire (MENQOL) to rate their level of menopausal symptoms in the previous 28 days in 4 categories: psychosocial, vasomotor, physical, and sexual. Visit Two: Participants will arrive at the laboratory in a fasted state and will have abstained from alcohol, caffeine, and physical activity for 12 hours. A total of five participants experienced 12 hot flushes during the study. While there was no change in mean arterial pressure (MAP) during a hot flush (Before HF: 96±13 mmHg; During hot flush: 98±13 mmHg; p=0.34), there was an increase in heart rate (Before HF: 72±10 bpm; During hot flush: 76±10 bpm; p=0.01). Muscle sympathetic nerve activity was successfully acquired for one hot flush. During this flush, MSNA burst frequency increased from 43 bursts per minute before the hot flush to 70.82 bursts per minute. There was an increase in MSNA burst incidence from 61 bursts per 100 lbs before the flush to 65 bursts per 100 lbs during the flush. No statistical tests were run for MSNA given the small sample size.

CHASITY WEBB
University of Texas at Austin
The Effects of a Nonverbal Autistic Childs Diagnosis on Primary Caregivers
Location: Optimist B

Autism Spectrum Disorder (ASD) is a neurodivergent disorder characterized by a developmental disability caused by differences in the brain. While problems with social communication and interaction and restricted or repetitive behaviors or interests can be traits commonly observed in individuals diagnosed with ASD, there are many other traits for this disorder. My Investigation will be looking at the mental, physical, and emotional effects of having a child between the ages of 4 and 18 years old diagnosed with nonverbal ASD on the primary caregivers. Notably, these mental, physical, and emotional effects, such as caregiver burden, caregiver strain, depression, and more, have been increasingly high in primary caregivers of individuals with ADS. Based on previous research in this area, I hypothesize that parents and caregivers with nonverbal autistic children will exemplify high levels of distress, that effective communication between primary caregivers and their nonverbal Autistic child will significantly mitigate caregiver stress, and that external factors such as community, financial support, self-care will significantly mitigate caregiver stress. By addressing these factors, this research aims to enhance understanding and inform interventions to support the well-being of caregivers in this context.

August 2, 2023 - 9:00 AM Sociology and Public Affairs Breakout VI: Panel C

JESSE ALONZO
UW-Whitewater
Trans-itioning Academia: Trans and Gender-expansive College Students' Experiences Across Disciplines
Location: Discovery

Although, on average, 1/189 U.S. adults are trans(gender), an umbrella term for someone whose gender identity does not fully align or conform to what is typically associated with and culturally expected of their gender and/or sex assigned at birth, trans adults are 21% less likely to attend college, highlighting the need to improve the retention and recruitment of trans and gender-expansive (any non-cisgender individual that was added because 66% of 925 non-cisgender youth selected "I prefer to identify my gender as (blank)" over "transgender)" people (Crissman et al., 2017; Baum et al., 2014). Therefore, this study will unpack their lived experiences with different class sizes/types and classes and faculty and staff of various disciplines in semi-structured, individual interviews with approximately five to ten non-cisgender undergraduates enrolled at or graduated within the last year from UW-Whitewater, an American, public, midwestern university, contextualizing their experiences with published research conducted at other American 4-year institutions. These students will likely report more negative experiences with their core, foreign language, and STEM classes and faculty and staff. Conversely, they will likely share more positive and neutral experiences with arts and communication, sociology, women's and gender studies, and humanities classes and faculty and staff. Trans and gender-expansive students, additionally, will likely recommend faculty and staff facilitate pronoun sharing, undergo mandatory training, incorporate trans/LGBTQ+ scholarship or content into their curriculum, utilize affirming visual representation, and have a non-discrimination/no-tolerance policy in their syllabuses.

CAMERON CULBERSON
University of Wisconsin- Whitewater
The School-to-Prison Pipeline and its Effects on Young Black Males
Location: Discovery

This literature review will examine the school-to-prison pipeline and its effects on young Black males. The school-to-prison pipeline refers to the systemic process in which educational policies and practices disproportionately push students, particularly those from marginalized backgrounds, into the criminal justice system. Young Black males are significantly overrepresented in this pipeline, facing numerous obstacles that hinder their academic and personal success. In return, this contributes to their increased likelihood of becoming involved in the criminal justice system. This review will explore the various factors that create and maintain the school-to-prison pipeline for young Black males, including zero-tolerance policies, inadequate support services, and biased disciplinary practices and teacher expectations. In addition, it also investigate the long-term consequences of this pipeline, including diminished educational opportunities, increased dropout rates, and higher rates of incarceration. This review will analyze the existing research on potential interventions and solutions to mitigate the school-to-prison pipeline and its effects on young Black males. By examining the current literature, this review aims to raise awareness about the school-to-prison pipeline's disproportionate impact on young Black males and advocate for evidence-based policies and practices that promote equity, fairness, and educational opportunities for all students, but especially young Black males.

ELLA GBETANOU
University of Nebraska-Lincoln
Indigenous Heritage and Arabic Heritage Communities' Perspectives on Language Instruction and Other Cultural Supports in Education Settings
Location: Discovery

This research project addresses the lack of language instruction and cultural competence for children/youths in Lincoln, Nebraska, who have heritage languages other than English. The populations include Indigenous and Arabic Heritage Language communities. Using Participatory Action Research (PAR) and Indigenous Methodologies, we invited the listed communities into three collective forum events. During these forums, community members were asked by a speaker, a part of the research team, the following question: "If I were to hire a group of scholars from the University of Nebraska to do a project that the Arabic heritage/Native Community needs, I would ask them to address the following issue". From there, additional issues and concerns were identified within the public school system and the communities' interpersonal cultural hubs that may have been caused by the lack of cultural awareness. Using qualitative coding, notes from these forums were analyzed to uncover phrases, topics, and issues that could be grouped into major themes. These themes will be formatted into a problem/solution tree diagram for additional discussion. In continuation of this project, additional focus groups will be held to further address the problems and solutions that community members might identify, ultimately leading to useful knowledge about significant support for linguistic and cultural competencies for Indigenous and Arabic heritage communities. Educators in public schools, private schools and other educational institutions/organizations could utilize the findings of this project.

LEYA SIKUJUA JEANNEVEVA
Westminster University
The Challenges and Barriers Faced by Refugees in Pursuing Higher Education in the United States
Location: Discovery

Refugees, as displaced individuals seeking a safe haven, encounter numerous challenges when attempting to pursue higher education, including enrollment in colleges and universities, within the United States. These abstract aims to provide a concise overview of the various barriers that impede their education aspirations. This study explores the multifaceted challenges faced by refugees in accessing higher education, highlighting socioeconomic, cultural, and bureaucratic obstacles. Socioeconomic factors such as limited financial resources often hinder refugees' ability to afford tuition fees, textbooks, and other educational expenses. Additionally, refugees frequently lack access to financial aid programs and scholarship, limiting their opportunities. For educational advancement. Cultural barriers pose another significant challenge for refugees' students. Language barriers, inadequate language support service, and limited proficiency in English hinder effective communication and academic success. Cultural differences and unfamiliarity with educational system in the United States further compound these challenges, potentially leading to feeling of alienation and exclusion. Bureaucratic hurdles also impede refugees' educational pursuits. Complicated and lengthy application processes, visa restrictions, and documentation requirements can be overwhelming, particularly for individuals with limited resources and support networks. Navigating unfamiliar administrative systems and understanding the intricacies of the U.S higher education system present additional obstacles. Furthermore, the lack of recognition and evaluation of prior education and qualifications obtained in their home countries may undermine refugees' chance of pursuing higher education. The absence of transparent and streamlined procedures for assessing foreign credential creates barriers to enrollment and limits academic mobility for refugees' students. Understanding these challenges is crucial for developing targeted interventions and support system to promote educational opportunities for refugees. By addressing financial constraints, enhancing language support services, streamlining administrative processes, and establishing robust system for credential evaluation, policymakers, educational institutions, and communities can contribute to removing barriers and fostering an inclusive enrolment for refugees' students in the United States.

August 2, 2023 - 10:15 AM Anthropology, Gender, and Ethnic Studies Breakout VI: Panel F

TIFFANY DAVIS
Howard University
The Gay Agenda: How Black People Respond to LGBTQ Politics in the Media
Location: Pinnacle

Using the 2020 Collaborative Multiracial Post-Election Survey (CMPS), I examine the extent to which Black individuals in the United States are less likely to support progressive LGBTQ policies? Specifically, I examine under what conditions news media outlets influence Black public opinion regarding public policies related to lesbian, gay, bisexual, transgender, and queer (LGBTQ) people. George Gerbner (1969) cultivation theory posits that long-term exposure to media increases the probability of viewing reality as being closer to television's depiction. McCombs and Shaw (1972) posit a theory agenda setting, which argues that media can influence public agenda by elevating one issue above others, thus serving as a point of reference to understand how the television industry functions. First, I hypothesize that Black people who watch cable news at high levels are less inclined to support progressive policies on LGBTQ rights, than Black people who utilize other news media sources. Second, I hypothesize that Black people who more often consume news from various conservative media outlets are less inclined to support progressive policies on LGBTQ rights, than Black people who get their news from other media outlets. This study can help us better understand the role of media and how it shapes Black public opinion towards LGBTQ rights.

LOGAN FORD
Howard University
Black Women and Political Participation
Location: Pinnacle

While Black women continue to grapple with the historical legacies of racial and gender discrimination, they persistently outperform their male counterparts, as well as women of other racial/ethnic groups in their rates of political participation, such as voter turnout. Using the 2020 Collaborative Multiracial Post-Election Survey (CMPS), this research will examine to what extent socio-demographics (SES) (such as educational attainment and income) as well as political ideology explain high rates of political participation among Black women, relative to their white female counterpart? I expect to find that Black women with higher levels of SES will be more participatory, than white women of the same SES. In terms of ideology, liberal-identifying Black women will hold higher levels of political participation than liberal-identified white women. This study will help us to better understand Black women's political participation and what factors influence their propensity to engage in activism.

SYNIA TAITT
Howard University
Trust Issues: Race, Trust and Police Legitimacy
Location: Pinnacle

Leading up to the 2020 presidential election, we saw mass uprisings amongst Black Americans to protest avid racism, and police brutality which has increasingly targeted Black American individuals. Using the 2020 Collaborative Multiracial Post-Election Survey (CMPS), I will examine the extent to which "linked fate" among Black people influences attitudes toward trust in the police, during the 2020 Presidential election? Dawson (1994) developed the concept of linked fate or the perception that an individual's fate is tied to those of their racial in-group. I seek to address how perceptions of linked fate impact attitudes on trust in the police, among Black respondents. I hypothesize that Black individuals with higher levels of linked fate are more likely to disagree that the police are trustworthy, in comparison to their counterparts with lower levels of linked fate. This research can help us to better understand the influence of Black intra-racial group ties on views toward trust in state institutions, such as the police.

NYIHAJI WOODS
Howard University
Maybe In My Backyard?: Support For Affordable Housing Developments Across Racial Groups
Location: Pinnacle

Housing affordability remains a major obstacle for millions of Americans who wish to become homeowners. The costs of homes and rental units have skyrocketed, leaving homeownership out of reach of many in the middle and lower class. Despite the desperate need for affordable homes, some residents oppose the construction of new homes in their neighborhoods and policies that benefit low-income renters. Some residents may argue that these kinds of policies lower property values, attract crime, and destroy the character of their community. While empirical research suggests that racial and class stereotyping play a role in opposition towards these kinds of policies, little research has been conducted examining the role socio-demographics have on attitudes towards housing initiatives (Tighe 2012). Using the 2020 Collaborative Multiracial Post-Election Survey (CMPS), my research uses race and socioeconomic status to examine the extent to which different groups of people will demonstrate support for some policies. I hypothesize that racial minorities will be more supportive towards low-income housing policies than white Americans. I expect that stronger support for low-income housing policies can be attributed to higher levels of in-group solidarity among black respondents compared to other racial groups.

August 2, 2023 - 10:15 AM Anthropology, Gender, and Ethnic Studies Poster Session 4

SIMRET HABTE
Loyola Marymount University
Drawn Into The Picture: Afro-Descendant Mexican Women And Ethno-Racial Identity Expression In Art
Location: Centennial Ballroom

Mestizaje is the dominant ethno-racial identity in Mexico and refers to a mix of European (Spanish) and Indigenous ancestry. It is closely tied to the national identity and resulted in the erasure of the Afro-descendant population in the country's history. As a result, Blackness is often perceived as being in opposition to 'Mexicanness'. Despite the significant presence and contributions of Afro-descendant Mexicans, Blackness has been written out of all aspects of the public image of Mexico. Recently, recognition of Afro-descendent Mexicans has grown. However, there is a disconnect between insider and outsider perceptions of Blackness and the representations of Afro-descendent Mexicans that capitalize on their cultural identity without understanding their identity and life experiences. Erasure of Black Mexican women from the national identity is especially persistent. Mass media representations reflect this erasure and reveal the perceptions of race and gender identity in Mexico. Black Mexican women are often stripped of agency over their own identity and representation. However, for marginalized populations like Afro-Descendant women, art is also an accessible medium to regain that lost agency and assert their voice in public discourse of their identity as it is a portrayal of their gendered racial experience that is controlled by them.

EMMA KARDOKUS
Montana State University
Manifest Destiny and Masculinity: Chinese Migrant Workers as Extensions of the American Empire
Location: Centennial Ballroom

Cultural perceptions of gender in what is currently the United States have had various qualities based on a myriad of factors, including both race and era of discussion. This work was made to explore early perceptions of Chinese migrant laborers in the western United States, particularly focusing on the expansion of the American empire and how railroad workers contributed to the idea of Manifest Destiny. It seeks answers to questions pertaining to intersections of discrimination and the position of laborers as tools rather than as human beings with essential roles. By looking at personal narratives, historic articles, and even epitaphs, internal and external expectations and perceptions of masculinity in these workers come to light, as well as provide a history of discrimination that allows one to examine modern ideas of a similar vein.

ATHENS MARRÓN
Cal Poly Humboldt
Aquí Estamos!: Latinx/a/o Students in Rural California
Location: Centennial Ballroom

Aquí Estamos!: Latinx/a/o Students in Rural California' focuses on the schooling experience of Latinx/a/o students in predominantly white schools, and the impact schooling pedagogies and culture have on their sense of belonging and confidence in school. Through interviews with four high school students, we aim to understand how the practices and culture of Humboldt County schools impact the schooling experience of Latinx/a/o students and how they have found space, community, sense of belonging, and validation in these predominantly white spaces.

DARRELL WHITE
California State University, Long Beach
Women's Rhetoric in an 18th-century Ladys Magazine
Location: Centennial Ballroom

In the June 1761 issue of The Lady's Magazine, Anna Marie B**** announces the magazine's ability to "form the minds of young ladies" (497). In my presentation I look to show how representation through women's authorship gives the magazine ethos. I will analyze the specific ways the magazine centers the rhetorical genius and intellectual merit that Anna Marie B**** alludes to in the above-mentioned issue. Anna Marie B**** is joined by Charlotte Lennox, an author whose pursuit of using writing to earn an income made a name for herself in the 18th century. In the October 1759 issue, Lennox emboldens the magazine to continue its rhetorical campaign that refuses to ignore women's cultural and intellectual merit relative to men. Lennox being a proto feminist author herself praises the magazine for its scheme to "enlarge the knowledge, correct the judgement, and polish the manners of the fair sex."(64) Through my close readings of Feyjoo's "Defence of Women" I analyze the language used in association with women in the magazines essay. Feyjoo protests the "superficial manner of [women's] education" (497). I will argue that The Lady's Magazine operated as a rhetorical handbook to model for young women how to cultivate public displays of genius. My research will illustrate how language in The Lady's Magazine is used as a tool to help women to resist hegemonic forces of their time.

August 2, 2023 - 10:15 AM Atmospheric and Environmental Science Poster Session 4

IXEL MEDRANO
University of California, Santa Barbara
How Human Recreational Activity Along the California Coast Impacts Large Animal Presence
Location: Centennial Ballroom

Previous research observing wildlife in recreational areas in the Colorado Mountains has found that certain smaller species are more active within the range of human populations compared to larger species, which tend to modify their behavior to avoid any human interactions. Research like this is able to inform local policymakers and government planning agencies when designing new recreational environments for people living in the area. California coastal regulations and laws are very stringent regarding developing land, which emphasizes the importance of expanding this research from mountain ecosystems to more coastal habitats. The present study focuses on large wildlife observed in two California coastal regions, which have differing levels of human activity present. Human activity levels (high or low) were categorized based on the number of human-made trails in the area. Data collection involved using multiple cameras to capture images of large animals in these two areas to calculate the presence of different species over the span of about 6 months. It is predicted that (1) high human activity along the California coast will show a lower presence of large animals compared to the low human activity area, and (2) there will be lower large animal activity during the day than at night.

AMANDA ROSE
Southern Oregon University
A Thematic Content Analysis of Collaborative Ecosystem Restoration in the U.S. by Tribal and non-Tribal Partners
Location: Centennial Ballroom

Ecosystem restoration has emerged as a dynamic solution to address pressing environmental challenges, such as threats to biodiversity and land degradation. Recent studies emphasize the need for Western science to embrace Indigenous Traditional Ecological Knowledge and engage in partnerships with Indigenous Peoples for effective restoration initiatives. However, these partnerships often face political complexities and are hindered by the enduring legacies of colonialism, particularly concerning land rights, connection to place, and traditional stewardship. Drawing upon the interdisciplinary fields of Environmental Science, Policy, Sustainability, and Native American Studies, this research employs thematic content analysis to synthesize the findings from a systematic mapping project on collaborative ecosystem restoration in the U.S. by Tribal and non-Tribal partners. By identifying recurring themes, this study aims to provide researchers and practitioners with a deeper understanding of the current scholarship on collaborative ecosystem restoration in the United States, specifically involving Tribal and non-Tribal partners. The analysis focuses on identifying the key elements and characteristics of robust and enduring relationships, while also highlighting areas for improvement to guide future collaborations.

August 2, 2023 - 10:15 AM Biology Poster Session 4

OLIVIA CHEE
California Lutheran University
Investigating a Novel Transgene's Insertion Site in Drosophila melanogaster
Location: Centennial Ballroom

Comprehending the mechanisms behind gene expression and its regulation plays a vital role in unraveling the intricate processes occurring within living organisms. Drosophila melanogaster's genome has been extensively studied through a multitude of transgenesis experiments made possible by the introduction of transgenes. Swoosh (SW) is a novel expression pattern of a white+ (w+) transgene in Drosophila melanogaster being studied in the Marcey laboratory. The SW phenotype displays w+ low-level expression throughout the eye with a band of high-level expression along the D-V equator, with adjacent curving. This expression pattern suggests that the transgene has fallen under the transcriptional control of a nearby important developmental gene that is expressed equatorially. The equator is an important signaling center during eye development. We are molecularly mapping the insertion site of the w+ transgene in order to search for this putative developmental regulator in nearby genomic sequences. Our objective is to isolate and determine the precise genomic coordinates of the SW, w+ transgene, along with its surrounding DNA, in order to comprehend its potential interaction with a gene of developmental importance indicated by the transgene's equatorial expression. To explore genes that may influence the expression of the SW transgene, bioinformatic analysis of SW will be performed, using w+ primers and PCR with genomic DNA obtained from genetic lines containing SW. The aim of this research is to further enhance our understanding of epigenetic control, the molecular mechanisms involved in development, and the modification of gene expression in genetically engineered organisms.

JULISSA CRUZ BAUTISTA
Wesleyan University
How the Arp2/3 complex ATPase controls branched actin network turnover under force
Location: Centennial Ballroom

Polymerization of the cytoskeletal protein actin into branched filament networks generates forces that power cell movement. These branched networks sense and respond to external forces and adapt by altering the branch density. The Arp2/3 complex is a complex of 7 proteins including 2 actin-related proteins that bind and hydrolyze ATP (Arp2 and Arp3) that nucleate new branches (referred to as “daughter” filaments) on existing “mother” filaments. Abnormal expression of Arp2/3 subunits has been linked to the proliferation and pathology of various cancers and neurological dysfunctions. It is crucial to comprehend Arp2/3's structural and functional characteristics as well as the molecular processes that control its activity if we are to understand the molecular origins of these disorders and develop novel treatment approaches. Of particular relevance is how the stability of these branched networks responds and adapts to force. Past research in this lab has shown that the Arp2/3 complex from fission yeast “ages” and debranches more easily under force (applied with hydrodynamic flow) when it hydrolyzes and subsequently releases the gamma phosphate from ATP. We are currently investigating if the human Arp2/3 complex also “ages” the same way and identifying if Arp 2 and/or Arp 3 are responsible for this “aging” effect with hydrolysis inactive Arp2 and/or Arp3 mutants.

ANTHONY GARAY
California Lutheran University
Molecularly Mapping the Insertion Site of a Transgene with a Novel Expression in the Eye of Drosophila melanogaster
Location: Centennial Ballroom

Understanding gene expression and its regulation is crucial for unraveling the complexities of biological processes in organisms. The genome of Drosophila melanogaster has been the target of a multitude of transgenesis experiments since transformation via transgenes became available. The white+ (w+) transgene has commonly served as a reporter due to its ability to facilitate the identification of transformed organisms. In a genetic background where individuals exhibit a white-eye phenotype (white-), the expression of the w+ transgene allows for the quick identification of transformed organisms, which display a red pigment phenotype in the eye. Interestingly, the expression of the transgene is variable in transformed flies, with expression patterns being affected by genomic location, epigenetic status, and regulation by genes in the area of insertion. Our transgene of interest, deemed Racing Stripe (RS), is expressed along the dorsal ventral midline, “equator” region and important developmental signaling center of the Drosophila eye. Our objective is to isolate and determine the precise genomic coordinates of the RS, w+ transgene and its flanking DNA, to understand its potential interaction with a developmentally important gene indicated by RS's equatorial expression. We will conduct bioinformatic analysis to explore genes that influence RS transgene expression. A forensic analysis of RS will be conducted using w+ primers and PCR with genomic DNA from RS-containing genetic lines. The work aims to further elucidate the nature of epigenetic control, molecular mechanisms of development, and gene expression modification in genetically engineered organisms.

August 2, 2023 - 10:15 AM Chemistry and Biochemistry Poster Session 4

BIANCA BUSOGI
University of Texas at Austin
Encoding Unnatural Amino Acids via the One-Pot PURE Cell-Free System
Location: Centennial Ballroom

This project aims to expand the OnePot PURE (protein synthesis using recombinant elements) transcription-translation system to simultaneously incorporate two to three unnatural amino acids into a protein. Cell-free (in vitro) synthetic biology releases the researcher from the constraints of keeping a cell alive. For one, endogenous DNA no longer inhibits the production of your desired product, and secondly, researchers can conduct more rapid experiments for various genetic constructs concurrently. The OnePot PURE system uses 36 individually purified protein factors in conjunction with tRNA, purified ribosomes, and a small amount of compounds and ions for efficient polypeptide translation. The PURE method lends itself to superior control of the translation process. If successfully done, it opens the door for creating novel biopolymers with various applications in biomedicine, energy, and sustainability.

LUIGI D GUTIERREZ CRUZ
California State University, Long Beach
Enantiomeric Resolution of Spirobifluorene Derivatives via Chiral Auxiliaries: Diastereomers
Location: Centennial Ballroom

Spirobifluorenes are newly synthesized macromolecules with applications in organic-semiconducting technology such as OLED devices, gas storage/separation, biotechnology, and solar panel energy conversion efficiency. Typically, inorganic molecules are used for these applications as metals have intrinsic conductive properties and organic molecules do not. But, their unique structure allows their molecular orbitals to overlap in such a way that gives rise to these useful optical and electronic properties. As of now, separating their complementary configurations (enantiomers) of L and R has only been done using HPLC which is costly and purifies a few milligrams at a time. We are adding a special group to our molecules to make them non-complementary configurations of themselves: Different configurations cause the molecules to have different properties, from which we can now isolate the L and R arrangement using practical chemistry techniques . This approach will cost less and produce more at a time. We hypothesize that building larger materials out of only L or R will enhance their semi-conducting properties because of their uniform spatial arrangements. Increasing the capabilities of spirobiflourenes makes them an even more attractive idea towards the advancement of organic-semiconducting technology.

August 2, 2023 - 10:15 AM Clinical Medicine, Dentistry and Public Health Breakout VII: Panel F

JUA'CHELLE HARMON
Eastern Michigan University
The Impact of Food Insecurity on the Development of Psychopathology in Childhood and Adolescence: A Literature Review
Location: Odyssey

With the widening inability to access affordable and nutritious food, many people worldwide deal with food insecurity. This raises concerns for the well-being of children in the United States because of the impact food insecurity has on the development of children regarding psychopathology. Recent research suggests that maternal depression, household sensitivity, parenting, and exposure to violence may directly link food insecurity and psychopathology. This paper reviews and synthesizes the evidence for these links and possible mechanisms to help determine future implications in terms of intervention for experienced food insecurity and related psychopathology.

Keywords: early childhood, food insecurity, psychopathology, mental health, children, adolescents

ABIGAIL RADEMACHER
Southern Oregon University
Sustainable Agriculture reversing the Industrialization of Food Production
Location: Odyssey

Organic and local farming has gained popularity in recent years as a means of decentralizing the food supply chain. I will analyze the effects of this shift in food production on food security and market production from the perspectives of producers, distributors, retailers, and consumers in this extensive literature review. With a focus on how a de-industrialization of the agricultural industry will cause damage to specialization and innovation in food production, as this model of food production served as the foundation for American development and prosperity as a result of the Neolithic revolution. Farmers in the United States are currently one of the poorest populations, growing the nation's food within rural impoverished communities with thin profit margins that they use to feed and house their families. At the end of this review, I will discuss a variety of economic policies that ensure consumer desires are met without jeopardizing the livelihoods of our nation's growers and producers.

JENNY VANG
University of Minnesota - Twin Cities
Food Insecurity Interventions in Healthcare Systems - A Systematic Review
Location: Odyssey

Food insecurity can be defined as one’s lack of access to food sources and unmet nutritional needs due to social, economic, cultural, and geographic factors. Food insecurity interventions may offer access to healthy or fresh food, nutrition education, food vouchers, referrals, and direct cash while reducing food insecurity. The purpose of this systematic review is to examine the effectiveness of US-based food insecurity interventions. English-language studies published after 2018 that addressed US-based food insecurity interventions that may be used by health systems with patients described as food insecure, low-income, or presumed low-income were included in the review. The main outcomes were food insecurity status, healthcare costs, utilization of intervention(s), and health of patients with diet-related chronic disease or illnesses. Additional outcomes include changes in health behavior, self-efficacy, patient or provider acceptability and satisfaction. PICO Portal was used to screen studies and extracted data will be recorded in Excel spreadsheet. Results will be put into evidence tables. Insights of current food insecurity interventions can inform program development and reduce food insecurity in the US.

August 2, 2023 - 10:15 AM Education Breakout VII: Panel C

ARJANA S. ALMANEIH
University of Texas at Austin
Defining Student Success: The Institutional, The Individual, and Identity Spaces
Location: Pathways

In higher education, student success is a focal point of policy discussions and decisions. The definition of student success is intermittently defined through graduation rates, academic achievements, and job placements — but who is setting parameters for this spectrum? Student voices should be a critical pillar in defining success as higher education stands in a volatile and mutable state amid a post-COVID world. This qualitative study uses a convenience sample to interview students at the University of Texas at Austin who self-select as historically excluded racial identities (namely Latinx, Black, Indigenous students) to assess the individuals' definitions of student success. Students discuss whether identity spaces support their success and to what extent. For this study, the use of the term identity space refers to a physical or non-physical setting on the college campus that recognizes and celebrates the marginalized identities of those who occupy the space. Using gathered data from interviews, conclusions are drawn conjoint with the growing literature. This presentation argues that students should have a voice in how the university defines success and; whether one believes in the institutional or individual definition, identity spaces contribute to the success of historically excluded identities in higher education. The growing argument that centers around identity discourse among the university, politics, and mass media fortifies the exigence of this research.

ESTELLA ARMENTA
Wichita State University
Sexual Assault and Domestic Violence Prevention Education: Delivery in COVID-19
Location: Pathways

The COVID-19 pandemic affected many students across the globe. The focus of this study was for middle and high school students in the Midwest. Students had to adapt their education to be given either in-person, online, or a hybrid of both. The lab had interviewed 20 community prevention educators to better understand how the COVID-19 pandemic had impacted their work. The questions asked in the interviews ranged from the prevention educator's job responsibilities and what their prevention education delivery method was before, during, and after the school lockdowns and pandemic environment took place. The study aimed to understand how COVID-19 affected the delivery of sexual assault and domestic violence prevention education in middle and high schools. A secondary content analysis was conducted and found that almost half of the interviews revealed concerns of a lack of engagement with students, educators found teaching off their devices difficult, and the limited time they received to teach material. The benefits within this study were not consistent overall. An example of the benefits would be the usage of pre-recorded videos, polls and engagement within the presentations. Some educators reported no concerns with the delivery of education regarding sexual assualt and domestic violence. Interview answers suggest reteaching this generation of students sexual assault and domestic violence prevention education more thoroughly.

JACQUELINE JONES
UCLA
Adversity and Resilience in First-Generation and Transfer College Students
Location: Pathways

Experiences of adversity in childhood and adolescence can have lifelong consequences in academic and social contexts. When previously studied, adversity subtypes are usually weighted equally without looking at their differences or factoring in community and familial factors that may moderate these experiences. Furthermore, a holistic approach is needed to capture the resilience of the underrepresented population of first-generation and transfer students. This study aims to uplift these students' experiences while learning more about the developmental underpinnings of adversity and protective factors that may interact with their challenges as first-generation and transfer students. We are actively recruiting college students for our IRB-approved survey to learn more about their past and present experiences. By utilizing multiple measurement tools such as modified version of the Adverse Childhood Experiences scale and the Social and Emotional Resources Inventory, we aim to provide the prevalence of adversity subtypes and protective factors within the student population and potential mediators among adversity subtypes. Incorporating a holistic approach to identify protective factors in a diverse student population may help inform campus programs, guide interventions, and promote trauma-informed educational practices.

ARNECIA PAUL
Eastern Michigan University
COVID-19 Pandemic Era Children's Challenges: Teachers' Perceptions of Preschoolers' Social-Emotional Development Post-Pandemic in the Classroom
Location: Pathways

In 2020, the COVID-19 pandemic caused many disruptions in people's daily lives. One of those disruptions was shifting from being able to socialize and interact with others to isolating from everyone around you. Being in isolation challenged people of all ages, specifically young children. The majority of current preschool-aged children experienced almost two years of isolation from others due to the pandemic. At the time, now preschool-aged children were very young babies and toddlers. As of now, we are in the post-pandemic era and are transitioning back to "normalcy." Preschool-aged children are facing challenges in their social-emotional skills due to being isolated at a critical time in their development. This project aims to explore teachers' perceptions of preschool-age children's social-emotional development post-pandemic in the classroom. For this oral presentation, the literature review examines existing research about (a) the Covid 19 Pandemic, (b) the impact Covid- 19 has had on young children, (C) the importance of social-emotional skills and well-being, (d) teacher's thoughts on social skills, and (e) Identifying Gaps in Social Emotional Skills.

August 2, 2023 - 10:15 AM Engineering Breakout VII: Panel C

JEMONE COCHRAN II
Eastern Michigan University
The Construction and Examination of a Dyno Engine
Location: Innovation

Engine dynamometers are test systems used to evaluate internal combustion engine performance and conduct research. Currently, a new engine dynamometer system is under construction in the Energy Systems Laboratory at EMU, located at the GameAbove College of Technology – which will be operating using a modified production 3-cylinder 1.0L Ford engine. My role in this project was to assist in the design, construction, and validation of various customized components in the engine dynamometer system – including exhaust ventilation, air intake, fueling, and electrical components. These components were constructed with the tools found in the laboratory, and using several manufacturing and Engineering principles along with it. These components needed to be installed before any tests could be run with the Engine dynamometer. Next phases of the project will include (1) determining baseline engine performance both when motoring and firing, (2) determining engine performance and system operating limits for various operating parameters including power, torque, and coolant and oil temperatures.
Keywords: Dynamometer, LabView, Engine, Components, Torque, Power

TYLER DOWNEY
University of Nebraska-Lincoln
Novel Wheel-Leg Model and Design for a Pipe-Navigation Robot
Location: Innovation

In recent years, robots for pipe inspection have become more prevalent and are of much interest. The purpose of this research is to develop a new pipe robot architecture that is capable of accommodating different pipe diameters while being able to maneuver through complex pipe networks. There are millions of miles of pipelines in the United States alone, and these require frequent inspections and maintenance. It is difficult for humans to keep up with pipe maintenance because they are difficult to access, hence the importance of a pipe robot. The design of the robot puts emphasis on a novel wheel-leg design with the availability to connect in a multi-link form. This robot will incorporate a “scissor-lift” like design for the leg architecture allowing for it to stretch and compress. Alongside, the robot will have a modular multi-link design in order for it to navigate through sharp turns. CAD modeling is being used in order to design the robot which is then going to be 3D printed and assembled. Once assembled, a motor will be attached to one of the legs allowing for the robot to move. When completed, the robot will be tested in a tunnel environment with different inclines to ensure the robot will not slip while moving. We conclude that the leg design will be successful and allow for the robot to accommodate different diameters while making sharp turns. The results of this research will be useful in many industries and will allow for easier upkeep of pipelines.

LILIANA FIGUEROA
UC Davis
Design and Integration of an ISS Inspection CubeSat using HDD Reaction Wheels, Sublimation Cooling, Computer Vision and Two-Fault Tolerant Cold Gas Propulsion
Location: Innovation

CubeSats, or nanosatellites, have revolutionized space exploration and research by offering a low-cost, versatile, and easily deployable option for various applications. These standardized satellites, typically sized in increments of 10x10x10 centimeters (1U) and up to 1.33 kilograms, are utilized in Earth observation, scientific research, technology demonstration, and education. The International Space Station (ISS) serves as a research laboratory in Low Earth Orbit (LEO); however, the ISS faces numerous hazards in space, including micrometeoroid impacts, space debris and radiation exposure. Ensuring the station's maintenance and the safety of astronauts necessitates robust inspection capabilities. Under Professor Stephen K. Robinson’s Human, Robotics, Vehicle Integration and Performance Laboratory (HRVIP) involves CubeSat research for the external inspection of the ISS to meet the maintenance and safety concerns of astronauts onboard: computer hard disk drives (HDD) as reaction wheels as a cost effective option for attitude determination and control (ADCS), computer vision for remote inspection, thermal cooling via sublimation and two-fault tolerant cold gas propulsion system. The requirements for a 3U inspection CubeSat are derived from a Design Reference Mission (DRM) outlined in the thesis by Josh Day from HRVIP who proposed the design of a cold gas propulsion system to demonstrate the feasibility of a two-fault tolerant system architecture for an inspection cubesat. This research aims to integrate the CubeSat research at HRVIP into the preliminary design and integration of a 3U inspection CubeSat for the ISS based on the DRM.

August 2, 2023 - 10:15 AM Engineering Poster Session 4

COLTON BOYD
Cal Poly Humboldt
Learning From our Elders: A Canoe-based Approach to Software Design for Increasing Indigenous Participation in Computing
Location: Centennial Ballroom

Traditionally computing education assumes a Western worldview, excluding non-Western perspectives and requiring assimilation to Western ways of knowing. To overcome this, we propose an Indigenous-centered process for software design and data visualization that decolonizes computing concepts and provides Indigenous students with a culturally relevant and empowering learning experience. Inspired by the traditional canoe-making techniques of the Yurok Tribe and the Eastern Cherokee Tribe, our approach integrates object-oriented programming, UML, and Class Diagrams into a canoe-based software design framework. By empowering Indigenous communities with better access to computing and an improved understanding of data, we foster inclusivity and diversity within the field. Furthermore, our Indigenous-centered process offers a valuable alternative to traditional computing education, no longer enforcing a single Western worldview. To evaluate the effectiveness of our proposed solution, we interviewed Indigenous Environmental Science Graduate students and an Indigenous Professor of Forestry at the University of Minnesota to gather early-stage qualitative feedback on the potential impact of applying our approach in learning computing concepts for integration in Traditional Ecological Knowledge-based coursework. Our work aims to provide Indigenous students with an enhanced ability to work with data while making data visualizations more meaningful. By embracing Indigenous perspectives and cultural practices, we create a new path to learning traditional computing not tied to a Western worldview.

ERICK GUTIERREZ MONJE
California State University, Long Beach
Creating and Maximizing Performance of a Lab-Scaled Carbon Dioxide Electrolyzer
Location: Centennial Ballroom

With the rise of greenhouse gases in our atmosphere, it calls for new renewable energy technologies to be created to reduce the air pollution in our atmosphere. One technological advancement that is in early development is the carbon dioxide electrolyzer. A carbon dioxide electrolyzer is a process system that converts carbon dioxide into electricity through the use of an anode, cathode, and membrane. There is not much research done on this technology, as it is still a very new system that is being studied. I am working with Dr. Carlos Morales-Guio at the University of California, Los Angeles, and his group to develop a lab-scaled model of a carbon dioxide electrolyzer. The goal of this project is to create an efficient model by changing the anode, cathode, membrane, and area to maximize the performance of the carbon dioxide electrolyzer. We will 3D design the electrolyzer using Fusion 360 and will be 3D printing all the parts to create the lab-scale prototype. After the project is complete, we will send it to industries to scale-up to use at an industry size and to reduce the greenhouse gases in our atmosphere.

VALERIE KEODY
Cal Poly Humboldt
Air Quality Sensor Network Data Analysis and Modeling
Location: Centennial Ballroom

Wildfires occur globally and are increasing in frequency and severity. Wildfires are harmful due to the fire's destruction and the generated smoke. Smoke consists of numerous air pollutants; however, particulate matter (PM) is a common pollutant that causes short and long-term health effects. PM is harmful due to its small size, enabling it to be easily dispersed. For humans, particulate matter of size 2.5 micrometers or less (PM2.5) can travel deeply into the respiratory tract and cause adverse health effects. The use of low-cost air quality sensors has increased to monitor real-time air quality. Network data analysis can be applied to sensors to assess PM2.5 concentrations. The goal is to determine if network data analysis can detect an extreme air quality event approaching an area equipped with low-cost air quality sensors. The Karuk Tribe reside in Northern California and are afflicted with unhealthy air quality due to wildfires. Low-cost air quality sensors exist throughout the tribe's region. This research will utilize Python to develop a program that receives real-time data, removes outlier data, and creates spatial and temporal plots. The plots are observed to identify a pattern before periods of unhealthy air quality. Quantitative criteria will be defined based on the observed patterns. The defined criteria will be implemented in the code and tested with alternative historical data for validation. This research will produce a code that receives real-time data, cleans the data, and determines if the real-time air quality forecasts a period of unhealthy air quality.

August 2, 2023 - 10:15 AM Math, Statistics, and Physics Breakout VII: Panel C

SHILENE DAVIS
University of Colorado Denver
The Effects of Professional Development Seminars on Physics Student Outcomes at the University of Colorado Denver
Location: Optimist A

A STEM education has always included teaching technical skills and the core theories of the discipline, from the equations a scientist might use in their day-to-day job to what lab equipment one might expect to use. In the early 2000s, there was a shift from teaching exclusively technical skills to including programming centered around professional skills, which include resume writing, what types of jobs there are for scientists, and other skills and knowledge that long-time professionals might take for granted. In this shift, there has not been as much of a focus on showcasing the benefits to the students, and many programs have been hesitant to embed some form of professional development courses or seminars in their program curriculum and instead put the burden of learning these on the students.

This project puts qualitative and quantitative data of the effects that professional development courses have on student retention and outcomes in a highly diverse demographic of students from the University of Colorado Denver. To achieve this, Dr. Rogers and I looked through academic records of students from 2013 to 2023 and collected retention rates, grade outcomes, and indicators of success (defined as either getting a job or into graduate school within a year of graduation). We then looked at the trends within the students who met our success indicators to see if there was a shift from before the seminars were implemented to after. This presentation covers parts of an ongoing project.

DAIJA HOLLIDAY
North Carolina State University
Ethnic Minoritized Students in STEM Environments: Analyzing How Classroom Composition and Belongingness Affect Performance
Location: Optimist A

Ethnic minoritized individuals are not entering science, technology, engineering, and mathematics (STEM) fields in postsecondary and work settings at equitable rates. Utilizing the persistence framework (Graham, et al., 2013), the current study seeks to explore how adolescent ethnic minoritized students' experiences in STEM classes with diverse teachers and peers, perceptions of belonging, peer discrimination, and measures of academic coping are related to their grade performance in STEM classes. Adolescent participants (N = 473, M age = 15.13, SD =0.869) enrolled in five low-to-middle income public schools in the Southeastern United States self-identified as Black/African-American, Latinx, and Other (non-white). Stepwise regression analysis was used to explore how aforementioned variables interact with classroom race composition and grade performance. In addition, mediation and ANOVA analysis further explored interaction and differences between variables. Results from analyses revealed that once belonging and peer discrimination were added into the model, student racial composition was no longer related to STEM grades. Therefore, we tested if belonging or discrimination mediated this relationship. We found that belonging was a significant mediator, but discrimination was not: students who had more same-race peers in their class reported higher STEM grades. This relationship was explained by belonging: same-race peers in STEM classes predicted belonging in STEM classes which predicted STEM grades. Findings will be discussed in light of the minoritized students' experiences in school settings.

TIERNEY HUFF
Fayetteville State University
From STEM Innovation in Ancient Civilization to an Underserved Racially Minoritized Population in the 21st Century: A Systematic Literature Review of How Systems Impact Black Students in STEM
Location: Optimist A

Contributions of ancient civilizations to STEM have been undervalued and overlooked, which may have resulted in a negative impact on black people's tenacity and retention in STEM. Eurocentric ideas oversaturate mainstream historical narratives and academic conversation, which has potentially erased, marginalized, and excluded non-European contributions to STEM. Black students are underrepresented when it comes to their retention and perseverance in pursuing science, technology, engineering, and mathematics (STEM) degrees. To bridge the gap between ancient history and the interpersonal social determinants of Black STEM students (BSS), historical and cultural influences that have affected their experiences and opportunities must be acknowledged and addressed. The purpose of this literature review is to apply the Preferred Reporting Items for Systemic Reviews & Meta Analysis (PRISMA) approach to determine what factors exist and what is missing in the literature on how systems (educational) impact Black students who are interested in pursuing STEM disciplines. The findings will enable us to identify topics that have not been covered in the literature, as well as elements like social and interpersonal variables that support BSS retention and persistence. The results of this study have the potential to help us better understand why Black students continue to persist in STEM disciplines at a lower rate and develop interventions that benefit Black students majoring in STEM at my college of choice, Fayetteville State University, a historically Black university, who require this support by expanding and improving existing STEM interventions.

August 2, 2023 - 10:15 AM Math, Statistics, and Physics Poster Session 4

MIONTRANESE GREEN
California State University, Long Beach
Impact of Zero Emission Vehicle Transition on Asthma-related Emergency Department Visits in California
Location: Centennial Ballroom

The electrification of the transportation sector is crucial for mitigating climate change and has potential co-benefits for public health. This project examines the early phase transition to zero-emission vehicles (ZEVs) in California and its impact on local asthma-related emergency department (ED) visits. Utilizing publicly available datasets from 2013 to 2019, the study analyzes ZEV adoption data, asthma-related ED visit rates, and population characteristics at the zip code level. Descriptive statistics and visualization techniques provide insights into ZEV adoption trends. Linear regression models assess the effects of factors such as registered ZEVs, socioeconomic variables, and calendar year on ED visit rates. Preliminary analysis suggests beneficial respiratory health impacts from reduced air pollution emissions due to the ZEV transition. However, disparities in ZEV adoption among population groups raise concerns about equitable distribution of co-benefits. The study aims to identify communities that could benefit from future policies promoting equitable outcomes. The findings contribute to understanding the health and environmental impacts of ZEV adoption, informing future policy interventions. The project emphasizes addressing inequities in ZEV adoption through effective outreach and accessibility of accurate information. Presentation of findings in a group poster highlights the importance of achieving equitable co-benefits and improving public health outcomes through successful ZEV adoption.

RASHAD HALL
California State University, Dominguez Hills
Studying the Dynamics of drug treatment in Chronic Myeloid Leukemia
Location: Centennial Ballroom

Chronic Myeloid Leukemia (CML) is a type of cancer that begins in the bone marrow and later accumulates in the blood. CML results from an unbalanced translocation where the ABL gene on chromosome 9 is shifted so that it sits next to the BCR gene on chromosome 22 forming what is called the Philadelphia Chromosome. Imatinib – known in the industry as Gleevec – is a successful therapy for CML. It is known that quiescent CML stem cells are resistant to Imatinib, about 25% to 33% of CML patients treated with it will become resistant or intolerant to the treatment. Before Imatinib appeared in the market, Interferon was the standard course of treatment for patients with CML. A particular property of Interferon is that it allows Imatinib to fight leukemic stem cells by breaking their dormancy and driving them to enter the proliferating population. In this work, we are going to analyze the dynamics that exists between CML cells and immune cells under the presence of the combined therapy imatinib-interferon with the assistance of a mathematical model. One of our main objectives is to study the imatinib-interferon combination therapies that could serve to maintain remission on CML patients breaking the resistance of CML to Imatinib treatment.

NHAT PHAM
University of California, San Diego
Computational Analysis of Bubbles with Overlapping Generations Model
Location: Centennial Ballroom

Bubbles arise in economic situations where the price of a good increases significantly compared to its fundamental value, but they are difficult to study and detect in their formation. The study of bubbles with general equilibrium theory has produced new results, especially Hirano and Toda's recent 2023 papers on the uniqueness of a rational bubble solution in equilibrium. We use the underlying main theorems in Hirano and Toda (2023) to induce possible bubble conditions in the overlapping generations model (OLG) by changing model parameters computationally to characterize how bubbles would form in any economy.

August 2, 2023 - 10:15 AM Psychology and Cognitive Science Breakout VII: Panel F

ANDREA SANTIBANEZ TRUJILLO
University of South Carolina
The Effects of Exposure to Domestic Violence on Children's Development
Location: Optimist B

Domestic violence is a repetitive pattern of aggressive behavior from one partner to an individual usually done to gain influence and rule over the other. This violence can take several aggressive forms such as emotional, psychological, or physical (Office on Violence Against Women (OVW) | Domestic Violence, 2023). On most occasions, domestic violence is done by a male who victimizes a woman who may have children (Statistics, 2020). Therefore, children may also become victims or witnesses of domestic violence (DV). I have personally witnessed DV in my home in middle school. I began to develop anxiety, depression, isolation, and eating problems. Therefore, it is important to note the significance of the effects that DV or intimate partner violence may have on children's psychological, socio-emotional, physical, and behavioral development. Past research has shown that DV may greatly impair the long-term development of children (Almis et al., 2020). I believe that the secondary data I review will support the idea that DV at home significantly affects a child or teenager's development such as experiencing depression, anxiety, and difficulty navigating life through the use of abusing drugs. This research is conducted to shed light on the need for and to stop DV in order for children to feel safe and live a life without barriers in connection to violence. This will be done by analyzing cross-cultural data, primarily from Latin America and The U.S. by reviewing the most significant effects across cultures.
Keywords: Domestic violence, intimate partner violence, development, children, adolescents, Latin America.

KHADEEJA ALI SYEDA
NC State University
Bullying and Temperament: Differential Patterns for Social and Physical Aggression
Location: Optimist B

Bullying is a type of aggression characterized by the repeated and coercive use of power in peer groups. Contrary to previous beliefs, children who go down the path of becoming bullies don't all exhibit the same etiology (Marini et al. 2010). Individual temperamental factors can predict physical and social aggression, and it is important to understand which of these are significant in order to intervene before aggressive behavior can begin. The current study seeks to answer the following: what factors predict the likelihood of being nominated as a physical or social bully by your peers? Participants included 830 sixth and ninth graders recruited from public schools located in the Southeastern United States. They were asked to nominate three peers each for the categories of a social ("This person gossips and says things about others. This person is good at causing people to get mad at each other and often leaves others out") and physical bully ("Bullies others…this person is often hurting or picking on others by pushing or hitting them"). Participants also completed a questionnaire that measured subscales of temperament. Regression analyses were done to examine whether the subscales of temperament related to nominations as a social or physical bully. The results suggest that fear and high pleasure-seeking were positively associated, while pleasure sensitivity and shyness were negatively associated as predictors of physical bullying. Similarly, shyness was negatively associated as a predictor of social bullying.

CARINAH TOWNSEND
North Carolina State University
The Role of the Family in Evaluations of and Responses to Dyadic Bullying for Adolescents
Location: Optimist B

Bullying is a widely recognized occurrence at middle and high schools (Shin, 2019). However, the role a child takes in bullying events (i.e., the perpetrator, the victimized, or the bystander) can be dependent on the strength of their familial relationships (Moral and Ovejero, 2021). We examined the role of the family in evaluations of and responses to dyadic bullying for adolescents. We recruited 896 participants from public schools from grades 6 (N = 450) and 9 (N = 446). Participants completed an online survey that asked them to evaluate multiple dyadic aggression scenarios. Regression analyses revealed that positive familial relationships (unstandardized beta = -.369, standardized beta = -.209, p = <.001) were related to judging the bullying as less acceptable. Students who reported high family management were more likely to initiate active interventions. Further, females and younger students were less likely to view aggressive acts as acceptable and black students were more likely to practice inactive intervention methods. Findings suggest that bullying intervention programs should give more consideration to parent-child relationships.

August 2, 2023 - 10:15 AM Psychology and Cognitive Science Poster Session 4

MARIANA BARAJAS
Loyola Marymount University
Navigating the Isolated Path: Exploring Social Isolation Among First-Generation College Students (FGCS)
Location: Centennial Ballroom

This qualitative research study aims to examine the experiences and perceptions of social isolation among 30 first-generation college students. Social isolation has been identified as a significant concern among this population, impacting their overall well-being and academic success. Through in-depth interviews, this study sheds light on the multifaceted nature of social isolation and its implications for first-generation college students. A purposive sampling technique was employed to recruit a diverse group of 30 first-generation college students from large urban universities. Semi-structured interviews were conducted, with each participant sharing their personal experiences, challenges, and coping strategies related to social isolation. Thematic analysis was employed to identify recurring patterns and emergent themes within the data. The findings reveal a complex interplay of factors contributing to social isolation among first-generation college students. Key themes that emerged include limited social capital, feelings of cultural disconnection, academic pressures, and financial constraints. Participants reported various consequences of social isolation, including decreased motivation, reduced academic performance, and heightened mental health issues. Additionally, the study highlights the significance of support systems and peer networks in mitigating social isolation. The study underscores the urgent need for targeted interventions and support mechanisms to address social isolation among first-generation college students. Recognizing the multifaceted nature of social isolation, universities should develop comprehensive strategies that encompass academic, social, and emotional support. Building culturally sensitive programming, fostering inclusive environments, and promoting mentorship opportunities are crucial in combating social isolation and enhancing the overall well-being of first-generation college students.

MAX CARTAGENA
Cal Poly Humboldt
The Effects of Current anti-LGBTQ+ Political, Media, and Social landscape on the Well-being of California Sexual and Gender Minority College Students
Location: Centennial Ballroom

Sexual and gender minority (SGM) individuals are being targeted at an unprecedented level in modern US history. The past several years have seen an exponential increase in legislation and hostile public statements by right-wing politicians and others that target SGM individuals. Much of this specifically targets those who identify as transgender and gender diverse (TGD) individuals. This includes bills that restrict bathroom usage, participation in sports, access to medical care, the right to privacy, articles of clothing that may be worn, who one can marry and restrictions on medical care. Alongside this has been a rise in news covering the legislation as well as a rise in outlets that promote anti-LGBTQ+ rhetoric. This study will examine California SGM college students' perceptions of safety in California, perceptions of safety on their campus, and whether or not they feel optimistic about the future regarding SGM rights. In addition, participants' prospects for the future and if they have been influenced by anti-LGBTQ+ legislation will be investigated. Lastly, the effects of media relating to anti-LGBTQ+ rhetoric and legislation will be looked into. University administrators and others may use information gathered by this study to lessen the negative effects on SGM individuals of the current hostile environment.

ESTEFANIA VALENCIA
Loyola Marymount University
Neuropsychological Test Score Differences Between Hispanic/Latino and White College Students
Location: Centennial Ballroom

College students completed a test battery with various tests and surveys. Analyses were run on those that identified as either Hispanic/Latino or White race/ethnicity (n = 45). The tests included in the analyses were Symbol Search (SS), Digit Symbol (DS), and Letter Number Sequencing (LNS). In the NP-NMBRS Study on Mexico-USA borderland populations, these tests were shown to be overestimating the scores of the Spanish speaking adults when applying the standard neuropsychological norms; these norms derive from research done on white participants. The analyses on data from the students did not show statistically significant difference between race/ethnicity's (SS: p = .318; DS: p = .077; LNS: p = .513). However, graphs did show a trend of difference which suggests there could be another variable that affects scores, such as language and acculturation. Race/ethnicity is not the best variable to look at when looking at how norms should be adjusted for various groups. Future research will include data from the surveys Abbreviated Multidimensional Acculturation Scale and Language Experience and Proficiency Questionnaire. This data could provide a better insight into how the norms apply differently to students that attend an English-speaking college.

August 2, 2023 - 10:15 AM Sociology and Public Affairs Breakout VII: Panel D

RACHEL GRAVINA
The University of Arizona
Examining Gun Attitudes Amongst Latinos
Location: Discovery

The attitudes, morals, and practices toward guns are referred to as gun culture in the field of sociology. Previous research on gun culture has been predominantly focused on white male gun owners. There is a lack of research on gun attitudes amongst the Latino population. This is a considerable oversight, as lived experiences can affect the perceived need to own a gun. The study will examine how cultural identity and perceived threats, such as fear of victimization and displacement, influence security precautions amongst the Latino population in Pima County, Arizona. The research questions are: 1. How does lived experience as a racial/ethnic minority impact personal beliefs towards safety? 2. Is there a relationship between perceived threats and positive gun attitudes? 3. Does collective and/or individual displacement and experiences of diaspora contribute to the need for security? The study will consist of a pre-interview survey and 15-30 interviews. Survey questions will feature demographic questions to filter for interview applicants and allow me to better focus interview questions on participants' lived experiences and family history. The survey will be advertised through social media and cultural centers at the University of Arizona and Pima County. Proposed participants will include individuals residing in Pima County that identify as Latinos and Indigenous individuals from Southwest tribes. Conducting research via interview will allow me to gain insight into each individual's definition of gun culture, and allow me to ascertain how each individual's unique cultural heritage may influence their attitudes towards guns.

HILDANA LIBEN
University of Colorado Denver
Understanding Perceptions of Safety at Denver’s Light Rail Transit Stations
Location: Discovery

The Crime Prevention through Environmental Design (CPTED) guidelines, adapted to transit by the American Public Transportation Association (APTA) focus on implementing strategies of surveillance at transit centers. CPTED guidelines for transit are intended to provide transit agencies with both safety principles and effective utilization through a range of recommended environmental design elements, including and not limited to security cameras, lighting, and visibility. The objective is to assess whether these guidelines are adequate in promoting perceptions of safety for riders of the Regional Transportation District’s (RTD) light rail stations located in the Denver Metropolitan Area. This study uses field research observations of ten stations in neighborhoods with different incomes – five in low-income communities, and five in upper-middle to higher income communities – to determine how neighborhood incomes interact with station safety elements to affect riders’ safety perceptions. Overall, this research didn’t confirm that higher income neighborhoods receive better solutions to combat safety concerns compared to low-income areas, as some stations in neighborhoods with low incomes felt safer. The findings provide insights into the factors that contribute to the average transit rider’s perceived sense of safety at transit stations. They also reveal inconstancies between what the agency presents as important safety and customer service elements to what some riders perceive to be important in their transit experience. This evaluation will help address the gap between RTD’s measures of system safety, which primarily focuses on technology and system performance, to the riders’ actual feelings of safety while waiting for and riding transit.

MIRAKLE WRIGHT
University of Colorado Denver
Silicon Valley Philosophies: Analyzing The Rise of AI as an Existential Risk in Global Media
Location: Discovery

In recent years, the idea of AI as an Existential Risk has become increasingly prevalent in the media. This research aims to track that trend, and critically analyze the idea of AI as an Existential risk. Existential fears around AI can cause us to ignore the present harms that AI has already enacted, particularly against marginalized groups. Understanding the proponents of this narrative and their impact on the public perception of AI is paramount. Using the emerging field of Critical AI as a theoretical basis, this research focuses on Timnit Gebru and Émile P. Torres' emerging work on the set of philosophies that inform the conversations around AI as an Existential Risk. These philosophies are Transhumanism, Extropianism, Singularitarianism, Cosmism, Rationalism, Effective Altruism and Longtermism (TESCREAL). Using a combination of computational analysis techniques and natural language processing (NLP) tools, namely, Named Entity Recognition, Topic Modeling and Sentiment Analysis, we analyze the trends and topics associated with AI as an Existential Risk in the global news coverage in the English language. In conjunction with Gebru and Torres' analytical framework, we anticipate that the presence of TESCREAL Philosophies in the news coverage of AI will occur frequently and grow in importance over time, along with the increasing influence of the proponents of these philosophies in AI discourse. This research is crucial for understanding how these philosophies can potentially be influencing AI policy and regulation decisions.

Key words: Existential Risk, AI, Artificial Intelligence, Artificial General Intelligence, TESCREAL

August 2, 2023 - 1:30 PM Atmospheric and Environmental Science Breakout VIII: Panel A

KELLY GRAZIADEI
University of California Davis
Urban Tree Nutrition: A Database of Edible Trees for Feeding Cities
Location: Pinnacle

The urban forest offers a variety of services from mitigating climate change to offering people places for cultural recuperation. But urban forests are rarely incorporated into local urban food systems as a solution to combat food insecurity and to augment human nutrition. In this study, we examined Ginkgo biloba as an initial model species to compare different cultivars' nutritional profiles, with future plans to repeat this analysis on other commonly planted urban tree species. We negated statistically significant differences between varieties in order to set the precedent for interspecies collection of the top 1123 urban tree species planted across the US. Nutritional profiles of Ginkgo biloba were collected through an extensive online search of published scientific materials, hard-copy plant encyclopedias, and website databases fact-checked against the literature. Data was collected in Excel and run through several analyses in R Studio. The curation of a database of urban tree nutritional profiles will allow for the creation of a new tool—based on urban tree traits and nutritional values—to aid urban farmers and communities in selecting and planting climate-appropriate and nutritionally-sound urban food trees across the US. This should help to further diversify and secure urban food systems, build resilience within and across communities, and add to the growing knowledge on ecologically-sound solutions for more sustainable cities.

JAREN MOJICA
University of Texas at Austin
Waste Management at the University of Texas at Austin Sporting Events: An Analysis of Production and Disposal
Location: Pinnacle

Sporting events hosted by universities generate substantial waste, presenting significant environmental challenges that need to be addressed through effective waste management. This research aims to analyze waste production and disposal at the University of Texas at Austin's sporting events, with the objective of offering practical recommendations for sustainable waste management. The study involves examining the types and quantities of waste produced, evaluating the current waste management strategies, and exploring best practices from various sectors. The data will be collected through waste audits, surveys, interviews, and document analysis. Statistical and thematic analysis methods will be employed to analyze the collected data. Furthermore, the research will include case study comparisons with waste management practices at other universities or sporting events. The outcomes of this study will inform event organizers and university administrators about existing waste management practices, identify areas that require improvement, and provide actionable recommendations for waste reduction and recycling. By implementing sustainable waste management practices, the University of Texas at Austin can demonstrate its commitment to environmental stewardship and serve as an inspiration for other institutions to adopt similar approaches. This research project contributes to the existing knowledge on sustainable waste management in university sports and has the potential to create a positive impact on the environment while fostering a culture of sustainability.

CRISTIAN SWIFT
University of Washington
Random Forest Regression Models for Predicting Phytoplankton Biomass Partitioning in the North Pacific
Location: Pinnacle

The partitioning of phytoplankton biomass is crucial for understanding how climate change impacts the carbon cycle as it sheds light on the distribution and dynamics of different phytoplankton groups. However, there is a significant knowledge gap regarding the environmental factors that drive the partitioning of phytoplankton biomass, particularly in warm, nutrient-poor regions expected to expand under future ocean conditions. This study focuses on the dominant phytoplankton groups in these regions: Prochlorococcus, Synechococcus, and eukaryotic picophytoplankton (less than 2 micrometers in diameter). Using random forest regression models, we assessed the predictability of phytoplankton biomass based on salinity, temperature, light intensity, and dissolved inorganic nutrient concentrations (nitrate, phosphorus, and iron). Model performance was evaluated using 1,200 observations obtained through high-frequency flow-cytometry in surface water of the North Subtropical and Subpolar gyres. In this presentation, I will share the insights gained from our initial results and emphasize the importance of various environmental factors as predictors of phytoplankton biomass. These regression models are specifically designed for the location and timing of this study. However, I will discuss how to set a path for further research to refine these predictive models by including more variables and cruise datasets. Preliminary results highlight the importance of nitrate, salinity, and to a lesser extent, iron, as predictors of Prochlorococcus biomass. Conversely, phosphate and nitrate emerge as the primary drivers of Synechococcus and picoeukaryote biomass, respectively.

MARIAN WALKER
UC Santa Barbara
Restoring California's Native Coastal Scrublands: Understanding Limitations to the Growth and Distribution of Artemisia californica
Location: Pinnacle

Restoration projects aim to reestablish native plant communities and support the growth of biodiverse ecosystems although, the variability of the natural environment presents challenges to those goals. At the University of California Santa Barbara's North Campus Open Space (NCOS), the success of coastal sage scrub restoration relies on the strong establishment of keystone species, including California sagebrush (Artemisia californica). This study investigates the correlation between California sagebrush growth (plant size) and soil bulk density. We hypothesized that areas of NCOS with lower soil bulk density are more favorable for supporting California sagebrush communities than those with higher soil bulk density. This relationship was explored by gathering soil samples and measuring longest branch lengths across two distinct zones. Results from statistical analyses indicate a weak correlation between soil bulk density and longest branch length across both zones (R = 0.161, r2= -0.413) which provides a potential explanation for approximately 41.3% of the decrease in plant size as soil bulk density increases. While bulk density does not fully explain the differences in California sagebrush growth, our results indicate that it may be an important contributing factor to differential growth in restoration sites. Understanding this relationship may help land managers improve the success of California sagebrush establishment at NCOS and similar restoration sites across the state.

August 2, 2023 - 1:30 PM Biology Poster Session 5

CRISTINA PORTILLO
Cal Poly Humboldt
Nest Tree Selection of Swainson's and Red-Tail Hawks in Butte Valley, CA
Location: Centennial Ballroom

Butte Valley is home to around a dozen breeding raptor species, between the only national grassland in California, and surrounding agricultural farms such as strawberries, alfalfa, barley, and garlic. There is not an abundance of habitat selection due to agriculture farms, and the most common tree species used by nesting raptors in this area is western juniper (Juniperus occidentalis), followed by ponderosa pine (Pinus ponderosa) and some have nested on platforms on electrical poles and pivots. I collected microhabitat data from occupied nest trees to determine what type of tree characteristics Swainson's (Buteo swainsoni) and Red-tailed Hawks (Buteo jamaicensis) prefer for their nest trees in Butte Valley, California. These microhabitat data were collected alongside longterm population monitoring efforts. Microhabitat data collected included tree height, nest height, number of trunks, diameter at breast height, density of canopy, the presence or absence of lichen and type, and doing the point-centered quarter method to collect these data at the nest tree and nearest neighbors to compare their availability in the environment. We expect Swainson's and Red-tailed Hawks prefer older and larger tree characteristics. The implication of these results could inform which trees are selected for western juniper removal, which is an anticipated treatment in Butte Valley by the U.S. Forest Service.

NOÉ REYNA
The University of Texas at Austin
Coming to one's senses: Stickleback molecular processing varies across populations and environments
Location: Centennial Ballroom

Anthropogenic climate change forces organisms to adapt to rapidly changing environments and colonize new habitats, as their survival and fitness depend on their ability to respond to novel ecological challenges. How animals respond to these challenges and (sometimes) opportunities is not well understood. Here, we use the three-spined stickleback fish Gasterosteus aculeatus to ask how adaption to novel environments is reflected in the genetic population structure, neuromolecular processing, and neuroanatomy of three sensory modalities – olfaction, vision, and mechanosensation. Originally a marine species, sticklebacks have invaded freshwater lakes and streams across the Northern hemisphere, exhibiting an impressive capacity to adapt to widely different environments. Focusing on the waters of Iceland, we collected individuals from eight populations from marine, lowland spring-fed, highland spring-fed, and highland glacial environments, which vary in turbidity. We first assessed the transcriptomes of three sensory brain regions involved in olfaction (olfactory bulb), vision (optic tectum), and mechanosensation (torus semicircularis) and identified gene expression variation associated with ecotype. We then identified SNPs across the entire transcriptome and asked whether genes that contribute to the genetic population structure and are also differentially expressed might be casual to the differences. We also associated quantitative neuroanatomic traits including brain area and volume with turbidity across populations. Our results reveal how variation in selective pressures and evolutionary divergence is reflected in genetic, transcriptomic, and anatomic changes in the brain.

KYLIE YANT
California State University, Long Beach
Assessing the Role of WRKY57 in Bolting Associated Leaf Senescence in Arabidopsis thaliana
Location: Centennial Ballroom

Leaf senescence is the successive process in which older leaves mature and then die, indicated by leaf yellowing. This is a critical developmental stage in all plants, including the model species Arabidopsis thaliana, and is imperative to the plant's fitness, as nutrients are recycled back into the growing and storage tissues of the plant. The WRKY gene family encodes transcription factors that play critical roles in response to abiotic stressors. WRKY57 gene expression is induced by drought and overexpression of WRKY57 results in drought tolerance. Our lab is interested in WRKY57 as it may also be important for the regulation of leaf senescence in response to flowering, termed bolting in Arabidopsis thaliana. My project is to monitor WRKY57 gene expression after bolting and to isolate wrky57 T-DNA mutants and determine if they display early senescence. Two T-DNA insertions, SALK_006206 and SALK_076716, localize to the WRKY57 gene. To identify individuals that were homozygous for mutant alleles, we used PCR primers that spanned the insertion site. Two homozygous individuals were isolated for each T-DNA insertion. These PCR products were then sent for sequencing, after which we designed real-time qPCR primers to quantify WRKY57 transcripts. The WRKY57-1 primer pair amplified cDNA linearly and was used to quantify transcripts in response to bolting. We found that WRKY57 was up-regulated. Next, we will determine if T-DNA insertion lines block WRKY57 gene expression, and will quantify bolting-associated leaf senescence through loss of chlorophyll and activation of NIT2 gene expression.

August 2, 2023 - 1:30 PM Chemistry and Biochemistry Breakout VIII: Panel A

BARAA AL-JASIM
University of Minnesota - Twin Cities
Synthesis and Structure-Activity-Relationship Study of 1,4-Acylthiazepanes as BD2-Selective BET Bromodomain Inhibitors
Location: Odyssey

Selective inhibition of the bromodomain and extra-terminal domain (BET) family of proteins is a promising method to regulate gene expression and disrupt pathways associated with diseases, including inflammation and certain cancers. Inhibitors that selectively target the D2 bromodomain within BET proteins have been shown to attenuate undesirable side effects in clinical settings compared to non-selective inhibitors. The need for D2 bromodomain selective inhibitors is an ongoing challenge in small-molecule drug discovery. Current non-selective inhibitors that target both the D1 and D2 bromodomains exhibit dose-limiting toxicity, minimizing their therapeutic potential. Recently, the Pomerantz lab developed inhibitors based on the 1,4-thiazepane scaffold identified from a small molecule screen of 3D-enriched fragments to target the D2 bromodomain in BET proteins. 1,4-thiazepanes exhibit high 3D character, which allows for potential conformational diversity and favorable interactions with the D2 bromodomain as it mimics the acetylated lysine on the histone tail. In this study, we synthesized various 1,4-thiazepanes, with different substituents on the benzene ring, through key reactions, including cyclization with α,β-unsaturated esters and 1,2-aminothiols to yield 1,4-thiazepanones, and subsequent reduction and acylation to yield 1,4-thiazepanes, which were characterized by 1H NMR spectroscopy. Competitive AlphaScreen assay was employed to evaluate the selectivity and binding affinity for D2 bromodomains. By varying substituents on the benzene rings, we can explore the electronic properties of the ring system to further optimize selectivity and affinity and introduce new vectors for the 1,4-thiazepanes to target D2 bromodomains.

LEONARDO LUGO
The University of Arizona
Addressing Inhibition of The GroEL Chaperonin in Gram-Negative Bacteria
Location: Odyssey

Globally, bacterial infections are ranked as one of the leading causes of death, with lower respiratory infections ranking fourth among all causes of mortality. In response, clinical settings have implemented measures for the prevention and treatment of infections. Antibiotic treatments have traditionally targeted several proteins which include beta-lactamases, transpeptidases, ribosomal subunits, dihydropteroate and dihydrofolate synthetases, DNA supercoiling enzymes, penicillin-binding proteins, and RNA polymerase. However, bacteria rapidly develop resistance to these antibiotics. The ESKAPE pathogens (Enterococcus faecium, Staphylococcus aureus, Klebsiella pneumoniae, Acinetobacter baumannii, Pseudomonas aeruginosa, and Enterobacter spp.) are highly drug-resistant and account for more than 900,000 deaths worldwide each year. Thus, there is a need for the development of antibiotics that do not target canonical antibiotic targets. The GroEL/GroES chaperone is a protein found in all eubacteria and is necessary for cell viability under all conditions tested and, in every species tested. While current lead compounds inhibit cell viability in gram-positive ESKAPE bacteria, inhibition in gram-negative ESKAPE bacteria continues to be a challenge, due to the outer lipopolysaccharide layer and efflux pumps. Here we focus on the development of compounds that inhibit GroEL/GroES based on Entryway rules for gram-negative ESKAPE bacteria. To characterize the inhibition of GroEL/GroES, we utilize the protein substrate and an ATPase assay. By applying the Entryway rules to inhibitors of GroEL/GroES, greater inhibition and decreased cell viability of gram-negative ESKAPE bacteria will be sought. Compounds meeting both the criteria of accumulation and inhibition will be further validated as antibiotic candidates in clinical applications.

OLUWASEUN TAIWO
Southern Methodist University
Design, Synthesis and Evaluation of Structurally Modified Carbapenem Antibiotics
Location: Odyssey

Tuberculosis is an airborne infectious disease caused by Mycobacterium tuberculosis which severely affects the lungs. It can be caught by breathing in the air that an infected person has contaminated through coughing, sneezing, or speaking. Mycobacterium tuberculosis is a pathogen that is estimated to latently infect about a quarter of the world's population (Chin et al.,2023). Carbapenems can be described as parenteral bactericidal beta-lactam antibiotics that have an extremely broad spectrum (Werth, 2023).

The goal of this summer's research is to develop a carbapenem antibiotic that would be responsive against multi-drug resistant mycobacteria which is responsible for multi-drug resistant tuberculosis. The research focus is designing and modifying antibiotics that would be selective against 31 specific bacterial strains using chemical synthesis.

Methodology:
1. Design and modify the antibiotics using chemical synthesis.
2. Purify and analyze them with Nuclear Magnetic Resonance spectroscopy to ensure their structure and purity.
3. Send the chemicals produced to Micromyx which will analyze its selectivity against 31 bacterial strains.
4. If the compound is found to be very active, it will be sent to microbiologists to test its structural biology against transpeptidases which are enzymes that catalyze the transfer of an amino acid residue or a peptide residue from one amino compound to another.

August 2, 2023 - 1:30 PM Clinical Medicine, Dentistry and Public Health Poster Session 5

GABY ALMARAZ
California State University, Dominguez Hills
Money or a Mouth-Watering Reward? A Neurophysiological Comparison of Monetary and Food-Related Reward Salience
Location: Centennial Ballroom

Research suggests that the rewarding value of food plays a significant role in increasing desire to consume more high-caloric foods. This study will test if neural indices (as measured by ERPs) of food-related reward anticipation, receipt, and loss relate to food intake and differ from other salient rewards, specifically money and positive feedback.175 participants will be recruited to participate in our study. The participants will complete three reward-based computer tasks where they get the chance to earn a favorite food, money, or receive positive feedback. The tasks will be completed in a counterbalanced fashion while ERP data is collected. Participants will be given a choice- if they choose correctly, they get the reward; if incorrectly, they lose a part of their earnings. The participants will be told the goal is to find the pattern that will maximize their reward, but feedback will be randomly assigned to 50% reward and 50% loss trials. Participants will then record their daily food intake using the online Automated Self-Administered 24-hour Dietary Recall (ASA24) for three randomly selected days for the upcoming week. Reward anticipation will be analyzed using a 3-Task (Neutral, Money, Food) ANOVA on SPN amplitude. Reward receipt and loss will be analyzed using a 3-Task (Neutral, Money, Food) by 2-Outcome (Gain, Loss) ANOVA on RewP amplitude. Finally, two multiple linear regressions will be conducted using age, weight, gender, and the SPN or RewP amplitude during the food task to predict average caloric intake from the ASA24 recalls.

YERALDINE POLO
California State University, Long Beach
Assessment of School Food Environments Through a School Nutrition Staff and Student Perspective
Location: Centennial Ballroom

The National School Lunch Program (NSLP) is estimated to have fed 30.4 million children in 2016. With the passing of the Healthy Hunger-Free Kids Act (HHFKA) of 2010, the NSLP took the initiative to combat obesity rates in children. As of 2018, the USDA has reversed and weakened many school meal standards set by the HHFKA of 2010 following concerns of decreased student participation rates. Completion of a literature review demonstrated no student participation decrease resulting from strengthened nutrition standards. This study investigates the impacts of recent school nutrition policy changes from two perspectives: school nutrition staff and recent high school graduates. Qualitative interviews will be conducted with school nutrition staff with the purpose to investigate (i) the goals of their program, (ii) methods used to encourage consumption of fruits, vegetables, and whole grains, (iii) extent of collaboration between staff and students/parents, and (iii) any challenges faced. In addition, a survey will be implemented with the goal to assess school food environments from the perspective of former high school students. The survey will aim to investigate (i) methods school nutrition programs utilize to increase consumption of nutritious foods, (ii) extent of collaboration between schools and students, and (iii) suggestions students may have to improve their school food environment. The aim of this study is to evaluate school nutrition programs to develop and implement strategies that improve the consumption of healthier school meals. By doing so, the study will contribute to the promotion of children’s health by changing school environments.

MAIA SABLE
California Lutheran University
Perceptions of Older Adults in the Health and Fitness Industry
Location: Centennial Ballroom

Past research in the health and fitness industry has shown that in order to increase one's life span, exercise is vital to maintain health and increase quality of life. However, despite increases in longevity and productivity into older age, older adults are stigmatized and portrayed in a negative light causing them to experience discrimination and ageism. Therefore, it is important to understand how contextual priming impacts perception and implicit ageism among people in late adulthood. It is also important to understand how older adults perceive themselves and if implicit ageism exists within their own population. Lastly, it is beneficial to understand gender differences present within the fitness industry and how they could affect older individuals. In this study, participants will be recruited through several locations in the Ventura and Los Angeles areas. Participants will also be recruited through social media platforms including Facebook and Instagram. In addition, a sample of traditional undergraduate students will also be recruited through the California Lutheran University SONA system for the undergraduate psychology department. After providing their informed consent, participants will be randomly assigned to one of four contextual priming conditions: positive male, positive female, negative male, negative female. Participants will complete a variety of questionnaires addressing ageism, open-ended questions, as well as demographic information. The study will use a between-subjects two-way ANOVA to compare the effects of contextual priming and gender on implicit ageism. Data is currently being collected on older adults.

August 2, 2023 - 1:30 PM Communication, Economics, and Geography Breakout VIII: Panel A

JOCELYN LOPEZ
University of California, Davis
Analyzing Media's Role in Shaping Immigration Policy Discourse and its Implication to the Latinx Migrant Community
Location: Pathways

This study aims to comparatively analyze the discourse surrounding three prominent immigration policies: Build a Wall/Build the Wall, Remain in Mexico/Migrant Protection Protocol, and Title-42. By utilizing various databases, including NexisUni, the focus is on tracking the discourse used by the New York Times and Los Angeles Times, which have strong ties to the Latinx immigration community, in framing these policies. Two qualitative analyses are used—tracking discourse analysis and qualitative content analysis— paying particular attention to the headlines used by the newspapers. Through this comparative analysis of the discourse present in national newspapers, this study seeks to enhance the understanding of how immigration policy is framed in the media and the impact it may have. Furthermore, the research aims to promote a humanitarian narrative surrounding the migrant community within the ongoing debate on migrants. By shedding light on the framing of immigration policies in the media, this study hopes to contribute to a more informed and empathetic public discourse on the subject.

ELON MORRIS
University of California, Los Angeles (UCLA)
Concrete Developments: Hidden Forms of Spatial Inequality and its Relation to Green Space
Location: Pathways

Across the U.S., many Black communities lack equal access to green spaces and consequently are affected by their absence. Current studies focus on the positive impacts of green space on communities of color including physical, mental, and environmental benefits. Urban green spaces include any open areas in cities like parks, gardens, or recreational outdoor spaces with natural greenery. Unfortunately, in Los Angeles, green space availability compared to other cities across the U.S. is low when measuring park space per person by race/ethnicity. Park inequities are more profound when analyzing differences between Black and white communities. This absence of local green space is a severe disadvantage to communities of color in urban areas as they are more susceptible to rising temperatures. Green space can mediate the effects of heat to help communities better cope with changing temperatures. Therefore we must understand the history of racially discriminatory practices to explain how spatial inequality of green space developed: Why are Black populations in Los Angeles concentrated and geographically segregated in areas with significantly less green space compared to white neighborhoods? How have government-sponsored segregation policies influenced Black settlement in LA? This project answers these questions through historical research, policy analysis, and engagement with theoretical work on Black geographies and geographies of exclusion.

GIGI N/A
UCLA
Indigenizing Public Space As Resistance Against Gentrification for Indigenous People in Los Angeles
Location: Pathways

My research examines the urban experiences of Indigenous communities and their use of public spaces in gentrified-impacted neighborhoods in Los Angeles. I argue that through the use of public space, Indigenous people are able to Indigenize placemaking and create a sense of belonging as a means to reclaim their right to the city. Ultimately, I aim to answer questions such as: What role does gentrification play in the use of public spaces? How do they Indigenize the process of placemaking to negotiate public space and resist gentrification? The methods intended for this research are photovoice. This method gives participants the opportunity to tell their own stories through a camera lens. Alongside photovoice, I will employ a focus group of Indigenous people from various backgrounds to engage in an open-ended discussion about their experience with gentrification. Lastly, I will compare LA maps to articulate the geography of gentrified impacted neighborhoods and Indigenous geography. This is significant in fortifying the notion that gentrification is a heinous process that has material and negative impacts on Indigenous communities. It will shed light on how gentrification is interlinked with settler colonialism and is a violent tool to further erase, displace, and marginalize Indigenous communities.

August 2, 2023 - 1:30 PM Education Poster Session 5

LILIANA CHAVEZ
University of Wisconsin-Madison
Black, Indigenous, People of Color (BIPOC) Parents' Desires for Their Children's Education
Location: Centennial Ballroom

Numerous studies point to linkages between parents' and caregivers' aspirations and a student's academic performance, highlighting the importance of understanding these aspirations. There is a lack of knowledge about the desires that Black, Indigenous, and People of Color (BIPOC) parents have for their children's education beyond a narrow focus on schooling and academic achievement. Using a broad lens to understand parents' aspirations is essential, as it may reveal more culturally relevant aspirations outside formal school walls. This study examines BIPOC mothers' desires for their children's education, learning, or development during their PreK-12 education and how they engage in and support their education based on these desires. The data for this project is a subset of a more extensive qualitative study of educational support for BIPOC mothers during the 2020-2021 school year. This paper explicitly analyzes semi-structured interviews with 15 mothers of children enrolled in a midwestern school district marked by racial opportunity gaps. Preliminary data analysis suggests that BIPOC mothers maintained intense desires for their children to have good formal education opportunities and desire for their children to learn beyond the school's curriculum in ways that develop their children holistically. This project highlights BIPOC parents' desires for children's education beyond formal schooling, allowing for a better understanding of their overall educational aspirations. Understanding parents' educational desires for and engagement in their children's education is important as it can inform family-school relationships and policies.

KAYLA DUMORE
Southern Oregon University
Indigenous Pedagogy in Action at Southern Oregon University: A Work in Progress
Location: Centennial Ballroom

Southern Oregon University was one of the first universities on the West Coast to have a Native American Studies Program. 25 years later, the program continues to grow. Native students, scholars, and professors have woven Indigenous pedagogy throughout their curriculum, providing an informed and holistic education. This research asks "What is the affect on student success when Indigenous pedagogy is applied in classrooms at Southern Oregon University?" Self report survey data and semi-structured interviews will be used to answer that question. After completing spring term of 2023, students were presented with a survey aimed at collecting data regarding how they felt the class affected their success. The professor will also be interviewed to further assess how Indigenous pedagogy was integrated into the classroom, as well as how affective they believe it was. While no results have been found thus far, it is anticipated that the implementation of Indigenous pedagogy within classes will have a significant positive impact on student success. If the anticipated results prove to be true, it will not only reaffirm the idea that Indigenous knowledge sovereignty is important but also that Native American Studies deserves a place in Higher Ed. This study touches on subjects of tribal and knowledge sovereignty, and can be used to advocate for more Native American Studies curriculum in Post Secondary Education.

BEA RAMOS
Southern Oregon University
How Productivity Is Measured in Lean vs. Green Office Spaces
Location: Centennial Ballroom

With lean office structures rising, researchers examine whether office environments affect employee productivity. In collaboration with commercial businesses, studies on ventilation and overall design help determine whether building inhabitants perform better in green or lean workspaces. The metrics include employee surveys with ranking to gain insight into each worker's perception of happiness, wellness, and productivity. The results on the impact of human behavior derived from worksites benefit firms as manageable areas like air quality, work engagement, happiness, and concentration levels optimize employee results and increase profits. Once the areas needing improvement are highlighted, organizations can create pathways toward a more enjoyable and innovative office-based landscape.

August 2, 2023 - 1:30 PM Humanities Breakout VIII: Panel A

NAOMI HAMMONDS
UCLA
Where Do I Fit in? An Examination of Sense of Belonging in Black STEM Undergraduates
Location: Innovation

Many colleges and universities continue to highlight the diversity among their student populations, but fail to ensure their retention and success once admitted. With pushes for diversity, equity, and inclusion initiatives, UCLA discusses these as finite goals, when in reality, these should be less of a goal and more of what we do rather than what we should do. In this qualitative study, I examine the effect of student connections, among other college experiences, on the sense of belonging of Black STEM undergraduates. This study uses interviews with Black-identifying undergraduate students to understand their lived experiences. By examining these interviews, I clarify common themes to thus propose interventions to better institutional practice, policy, and the overall experience and success of Black students in STEM. Using the anti-deficit achievement (Shaun R. Harper) and Black Joy frameworks, I framed my interview questions to also examine the positive contributing factors that lead to Black retention instead of falling into the exhaustive, negative narrative portrayed in this research field. Through my research, I will draw parallels and differences between gender groups and the varying levels of belonging between STEM and humanities majors, while affirming the impact of intersectionality. My research will affirm the need for more student-centered action for marginalized students and the impact sense of belonging has on student experience and major retention.

ALHONDRA LOPEZ
Westminster University
Zoo Ethics
Location: Innovation

Zoological parks are wildlife exhibitions that can be either entertainment or serve educational purposes. Over the years, zoos have been reframing their goals to conservation and animal advocacy to educate the public about wildlife. However, the reality is that not all zoos meet the ethical criteria to house wildlife. Recent scholarship reports that zoo animals present abnormal behaviors than animals in the wild. I argue that the current ethical responsibilities of Zoos are failing to protect the mental, emotional, and physical health of animals in captivity. Because I agree there is a lack of understanding on how to fulfill the lives of animals held in captivity. My case study asks: Does Hogle Zoo (a zoo accredited by AZA) do enough to promote the physical, emotional, and mental health of large mammals in captivity? My goal is to enhance the animals welfare in the context of a multispecies environment (humans, animals, and surroundings).

TANYA MARTINEZ
University of Minnesota
Dice Rolls, Acting and Reenacting: Role Playing Games in the Classroom
Location: Innovation

Role playing games have often been reserved for musty basements and mythical gremlins, but role-playing games in the classroom can allow for the democratization of education, encouraging a deep immersion in history in a way that would not be possible in a traditional classroom setting. Education is not one size fits all. Reacting to the Past is a role-playing game which requires students to act out various roles and work together in order to advance the objectives of their assigned character roles in a particular, crucial moment in history. Students are encouraged to study and then express the political, religious and personal values and philosophies of their assigned character roles through presentations and writing. The project at hand centers around facilitating the design and development of a Reacting to the Past game on the subject of the controversy surrounding Moliere's play, Tartuffe (1664) which gained notoriety for its criticism of religious hypocrisy. Students will play nobles, theatermakers, and ecclesiastes who vigorously debated whether art should play a role in critiquing society. The play itself was censored and banned due to its satire of the most powerful entities in France: the Catholic Church. But does satire change society, or does theater itself (as an institution) condone trickery and illusion? Ultimately, the use of role-playing games in education allows for a revitalization of student interest in history, which is further accentuated by the active roles students play in their own educations.

LEYA SIKUJUA
Westminster University
The Challenges and Barriers Faced by Refugees in Pursuing Higher Education in the United States
Location: Innovation

As displaced individual seeking a safe haven, refugees encounter numerous challenges when attempting to pursue higher education in the United States. This research study aims to provide a concise overview of the various barriers that impede their education aspirations by exploring the multifaceted challenges refugees face in accessing higher education including socioeconomic, cultural, and bureaucratic obstacles.
Socioeconomic factors such as limited financial resources often hinder refugees' ability to afford tuition fees, textbooks, and other educational expenses. Additionally, refugees frequently lack access to financial aid programs and scholarships for educational advancement. Furthermore, cultural barriers often pose another significant challenge for refugee students including limited proficiency in English, inadequate language support services, and unfamiliarity with the education system in the United States leading to feelings of alienation and exclusion. Bureaucratic hurdles also often impede refugees' educational pursuits. Complicated and lengthy application processes, visa restrictions, and documentation requirements can be overwhelming, particularly for individuals with limited resources and support networks. Furthermore, the lack of recognition or the incomplete evaluation of refugees' prior education attainments in their home countries, including the absence of transparent and streamlined procedures for assessing these credentials, may also undermine refugees' chances of entering and advancing their way through the higher education system in the United States.

Through structured interviews with ten refugees living in the United States that are either aspiring to enter the American higher education system or advance their way through the American higher education system, this research study seeks to better understand the challenges they face in furthering their education since understanding these challenges is crucial for developing targeted interventions and support systems for promoting better higher educational opportunities for refugees. By addressing financial constraints, enhancing language support services, streamlining administrative processes, and establishing a robust system for credential evaluation, policymakers, educational institutions, and communities can contribute to removing barriers and fostering a more inclusive higher educational experience for refugee students in the United States.

August 2, 2023 - 1:30 PM Psychology and Cognitive Science Breakout VIII: Panel D

MONIQUE MILLER
University of Nebraska-Lincoln
The Relationship Between Parents' Gendered Beliefs and Gendered Emotion Socialization Behaviors
Location: Optimist A

This study aims to examine the impacts of parental emotion socialization on child social-emotional development by including both fathers and mothers, thereby addressing the understudied role of fathers in this domain. Previous research has primarily focused on mothers, neglecting the importance of fathers' contributions to gendered parenting and its effects on children's emotional development. Additionally, inconsistencies in the literature on gender-differentiated parenting may stem from a lack of consideration for parents' gender stereotypes. By investigating parents' beliefs about masculinity, this study seeks to account for gender-stereotyped beliefs within the sample, a factor often overlooked in previous studies. To enhance our understanding of gender differences in children's emotion regulation and expression, this study examines Parents (N = 60 fathers, 68 mothers) who completed the Coping with Toddlers' Negative Emotions Scale (Spinrad et al. 2007) to measure parents' emotion socialization behaviors and the Male Role Norms Inventory-Very Brief (McDermott et al., 2019) to assess traditional masculinity ideology. A multiple regression will be conducted to test whether parents' masculinity ideology is related to their emotion socialization behaviors, and whether the target child's sex (male or female) moderates this association.

SARAH OMAR
University of Nebraska–Lincoln
The Role of Parental Trauma-Related Distress in Emotion Socialization and Child Internalizing Symptoms
Location: Optimist A

Research demonstrates that parental posttraumatic stress disorder (PTSD) is linked to increased levels of parenting stress, lower parenting satisfaction, and overall negative parenting. Beyond impacting parenting behaviors, parental PTSD symptoms are also associated with child outcomes, including increased internalizing symptoms (i.e., depression and anxiety). Emotion socialization--the process by which parents teach their children how to express and regulate their emotions --is one aspect of parenting that may be sensitive to parental psychopathology. Emotion socialization facilitates child emotion knowledge, expression, and regulation, which is important for overall socioemotional development. Given that there is limited research exploring PTSD and emotion socialization, the present study aimed to examine the associations between parental trauma-related distress, emotion socialization, and child internalizing symptoms.

MCKENZIE REESE
Loyola Marymount University
Nuances of Maternal Health: Social Determinants of Health
Location: Optimist A

Maternal health, specifically regarding mothers already at elevated risk due to mental health adversity, plays a crucial role in shaping the well-being of both mothers and their infants. This research project aims to explore the social determinants of health that contribute to favorable maternal and infant physical outcomes following delivery for mothers with adverse mental health concerns. By examining various domains, including sociodemographic, psychological, behavioral, and environmental factors, this study seeks to identify the key determinants that influence the health outcomes of these mothers and their infants.
The importance of this research addresses significant gaps within the current maternal healthcare system, particularly regarding psychological factors throughout pre-pregnancy, pregnancy, and post-pregnancy phases. By examining social determinants of health, this study seeks to identify factors that have the most substantial impact on maternal and infant well-being.
The research question is: How do certain domains, namely sociodemographic, psychological, behavioral, social, and environmental factors, result in favorable maternal and infant physical outcomes post-delivery for mothers with adverse mental health concerns? By examining these specific domains, we aim to identify the specific determinants that significantly influence the physical well-being of both mothers and infants, paving the way for the enhancement of maternal healthcare policies and practices.
Through the findings of this research, we anticipate contributing valuable insights into the complex interplay between social determinants of health and maternal mental well-being, providing a foundation for the development of evidence-based interventions and support mechanisms aimed at improving the overall health outcomes of this vulnerable population.

AALIYAH WILLIAMS
Fayetteville State University
Predicting Military Couples Life Satisfaction from their Mental and Physical Well-being
Location: Optimist A

While controversies revolve around the ideal lifestyle for military couples and families, recent studies have shown that individuals whose spouse served or is actively serving in the military face many similar obstacles much more than civilian couples face. Therefore, this study will be focusing on trying to find out military spouses' satisfaction with life based on their physiological and psychological well-being. Data collected for a larger study on the career adaptability and satisfaction of military spouses will be analyzed using regression analysis to predict the life satisfaction of military spouses from physical and mental well-being. The results will be presented in tables and figures and followed by a discussion of the implications and applicability of the findings in providing services to military spouses. The conducted research will provide useful insights that catalyze military couples' well-being, providing them with the necessary resources, support, and interventions needed to improve their overall life satisfaction.

August 2, 2023 - 1:30 PM Psychology and Cognitive Science Breakout VIII: Panel G

CANAAN BRACEY
University of Wisconsin - Madison
Psychological and Physiological Effects of Different Objects of Breath Meditation
Location: Optimist B

The effects of different objects of attention in the same style of practice have not yet been studied. Breath awareness is a foundation technique in secular mindfulness-based interventions and many meditation traditions. Some research has compared the effects of breath meditation to other forms of meditation practice, but no research has yet examined whether the location in the body attention to the breath is placed has detectable effects on the practitioner's subjective experience and physiology. This study will test whether attention placed on the breath in the belly versus the nostrils (two classical anchors for the breath) result in differences in subjective experience, respiration or heart rate. I will utilize a within-subjects cross-over design. Each participant will be randomly assigned to focus on either the belly or nostrils for 3-5 minutes of practice (final duration determined following piloting). After a 10-minute period of structured rest, the participant will then focus on the other breath anchor. For five minutes before and continuously throughout the experiment, I will collect respiration and heart rate using Bluetooth belts, ECG electrodes and the BIOPAC system. Participants will complete a battery of self-reports at baseline (e.g., affect, mindfulness, self-regulation, meta-awareness) and repeat a smaller battery of self-reports immediately after the first session, before the second session, and after the second session. Results may also allow future research to identify individual differences that predict differential response patterns. Ultimately, this learning may support personalized introductory paths to meditation practice that are best suited to each individual.

JOYAN CYRUS
UC Davis
Independent Influences of Chronic and Temporary Accessibility on Social Judgment
Location: Optimist B

Accessibility refers to the easiness and effortlessness of cognitive operation, affecting the likelihood with which mental representations may be activated from memory. Chronic accessibility pertains to concepts or schemas that maintain a consistently high level of accessibility within memory. Constructs that are chronically accessible have lower activation thresholds, facilitating them to be activated more easily from memory when prompted by external cues. Conversely, temporary accessibility is predominantly influenced by contextual factors rather than knowledge representations. The degree of temporary accessibility for a construct is determined by the recentness of exposure to relevant information or cues. In this research, we examined the simultaneous influence of chronically and temporarily accessible information on social judgments. We tested competing predictions about the relative impact of the two kinds of information. Whereas one common framework proposes that chronically accessible information is especially impactful when people lack the ability to think carefully, a more recent proposal suggests that both types of information should be impactful, regardless of processing capacity. Our manipulation of temporary accessibility failed to impact judgments at all. As such, this study was not able to provide a clear test of competing hypotheses. Subsequent research is attempting to implement a more robust manipulation of temporary accessibility.

JOSEPH FRAIRE
University of Arizona
The Reliability and Validity of Assessment Tools in ADHD Diagnosis
Location: Optimist B

In recent years, there has been a controversial rise in the diagnosis of attention deficit/ hyperactivity disorder (ADHD), which has sparked concern around the possibility of overdiagnosis and the overprescription of stimulant medication. Despite these concerns, other researchers believe that this rise is better explained by an increased awareness around ADHD, while others even argue towards its continued underdiagnosis in certain populations. Disagreements for this controversy can be attributed to the assessment tools used in prevalence research, and their difficulties with identifying and differentiating ADHD. The reliance on subjective reports and judgements, lack of standardized approach, unknown developmental trajectories, new overlapping constructs, and the existence of comorbid conditions, may all contribute to limitations in such assessment tools. These limitations can create errors in the diagnostic process, and result in inaccuracies for the true prevalence of ADHD. This study aims to summarize the reliability and validity of current measures used in the ADHD diagnostic process. A systematic review is conducted across three electronic databases, using search terms related to assessment tools that facilitate the diagnosis of ADHD from DSM-V criteria. The results from this study are predicted to fully characterize the current state of the assessment tools used in the diagnostic process, and will highlight any areas of improvement for better identifying and differentiating ADHD. Exploring the strengths and weaknesses of such assessment tools allows for a better understanding around the true prevalence of ADHD, and addresses concerns surrounding this controversial rise in diagnostic rates.

TRICIA TSANG
Southern Methodist University
Connecting Affect and Perception in the Context of the COVID-19 Pandemic
Location: Optimist B

The COVID-19 pandemic has left devastating effects on the world that are currently being investigated now. One of these effects that has gained a lot of attention is how the pandemic influenced cognition. The current study examined how people’s emotions related to COVID-19 affected their memory of the pandemic and their expectations of a post-pandemic world. This study utilized pre-existing data that was collected from 241 undergraduate students at Southern Methodist University. Participants completed a survey, which asked participants about their experiences during the pandemic, sometime between early April 2020 to early May 2020. While the analysis of this data has not been completed, this study aims to determine if there is a relationship between world crises, affect and perception.

August 2, 2023 - 1:30 PM Psychology and Cognitive Science Poster Session 5

DAJONAE BRADLEY
University of Wisconsin-Madison
Building Capacity for PCORI/CER & Improved Mental Healthcare in the Prison Setting
Location: Centennial Ballroom

Over one-third of the U.S. prison population has been diagnosed with a mental illness, and the literature shows that incarcerated individuals experience many different mental healthcare disparities (Community Policing Dispatch, 2022). Our project prioritizes community engagement while investigating mental healthcare in prison settings. We aim to identify what mental healthcare promoters and barriers are present in prisons and what resources can be implemented to foster better care. In order to capture the perspective of formerly incarcerated individuals regarding mental healthcare, we held six meetings with a stakeholder advisory group and the research team. Each meeting included three facilitators, two of which were formerly incarcerated, three members of the research team, and five other formerly incarcerated individuals. The advisory group feedback suggests that currently incarcerated individuals want additional psychotherapy resources with less reliance on pharmacological treatments, improved intake assessments, and further mental health education. Some factors that would decrease barriers to accessing care are strengthening the relationships between prison staff and incarcerated individuals and reducing burnout experienced by qualified mental healthcare providers. Considering this is one of the first studies to prioritize the perspectives of formerly incarcerated individuals, merging what is known from previous literature with our findings to create a holistic understanding of the current state of mental healthcare in prisons may be challenging. Further research will allow us to understand why practices often used in prison settings contribute to inadequate care, how the lack of support produces additional negative consequences, and how treatments and programs can be improved.

ALIZA POTTER
California State University, Dominguez Hills
Sooo, Like? Are You Pregnant? You Know the Statistics, Right? An Analysis of Listening to Black Mothers in California
Location: Centennial Ballroom

This study focuses on the experiences Black mothers have with healthcare providers. This study aims to determine how possible negative experiences can negatively affect Black women's well-being. The study utilizes secondary data, which is pulled from the California Healthcare Foundation “Listening to Mothers of California” data set, only utilizing Black mothers’ data set. Using quantitative methods, the researcher looked at correlations such as (1) negative prenatal experiences with well-being postnatal, (2) positive prenatal experiences with well-being postnatal (3) Labor experiences with well-being postnatal. Findings show that Black women were likely to experience unfair treatment and discrimination, increasing their anxiety and depression.

ISAIAH RINGO
California State University, Long Beach
Afrocentric Values, Positive Youth Development, and Black Adolescents
Location: Centennial Ballroom

Being aware of Afrocentric values is an effective way for African American adolescents to gain confidence and knowledge of their cultural backgrounds. However, American society creates a inequalities shown through forms of racism. The methods of oppression that are displayed in America include systematic racism, stereotypes, and police brutality. To find outcomes, I am determined to answer the research question of how Afrocentric values can be used to increase positive youth development in African American adolescents. Preliminary findings state that Afrocentric values were noted to be “cultural values” which are “communalism, spirituality, collectivism, fairness, and social justice”. I have identified these Afrocentric values from Dr. Cheryl Grills et al.’s study and will now see how these values will be shown through activities. After matching the activities to the terms, I will choose participants through sending forms of interest and flyers to one Afrocentric curriculum based middle school and high school in Los Angeles. Then, interviews and surveys will be conducted to draw from the students’ feedback on the project. As a result of this project, we plan to see if in fact the chosen Afrocentric values do have positive effects on African American youth development. This project’s implications are to discover Afrocentric values based on these topics to decipher which themes will help benefit African American adolescents in the journey of their overall growth. The development will hypothetically help Black youth to incorporate cultural values in order to flourish while encountering positive and negative aspects of an American society.

ALONDRA VANEGAS
California State University, Dominguez Hills
Body image, Social self-worth, and Flourishing in Adolescent Girls
Location: Centennial Ballroom

The period of adolescence is a sensitive period of development that can include major changes in body image and self-esteem. It is crucial to investigate how poor body image during adolescence predicts self-worth and psychological well-being. The aim of my research study was to investigate body image during early adolescence and how it relates to self-worth in middle adolescence and flourishing in the transition to early adulthood. Specifically, we hypothesized that greater body dissatisfaction in early adolescence would predict lower social self-worth in middle adolescence and lower flourishing in early adulthood. Data were drawn from the longitudinal Pittsburgh Girls Study, a population-based study that included annual interviews of N= 2,450 girls across 20 years, including self-reported measures in body image satisfaction (difference between the participant’s report of their body size and their ‘ideal’ body size) in early adolescence (age 10-13), perceived social self-worth in middle adolescence (age 14-16), and psychological flourishing early adulthood (age 18- 21). Preliminary bivariate correlations showed that self-reported body size was significantly positively correlated with body dissatisfaction in early adolescence ($r = .79$, $p < .001$). Consistent with hypotheses, body dissatisfaction was significantly correlated with social self-worth in middle adolescence ($r = -.07$, $p = .001$), and social self-worth was significantly correlated with flourishing, in early adulthood ($r = .38$, $p < .001$). For the final poster presentation, we will test these pathways in a mediation model to investigate whether the association between body dissatisfaction in early adolescence and flourishing in early adulthood is mediated by social self-worth in middle adolescence.

August 2, 2023 - 1:30 PM Sociology and Public Affairs Breakout VIII: Panel A

KENNEDY HONORS
Southern Methodist University
Social Determinants of Incarceration: Factors Affecting Involvement in the Criminal Legal System in Washington D.C.'s 2nd & 8th Wards
Location: Discovery

America has the highest incarceration rate in the world. The nation's capital, Washington D.C, has the highest crime rate in the United States. However, that crime rate fluctuates drastically depending on the different wards of D.C. This mixed- methods study analyzes the central factors affecting incarceration rates in D.C through survey data and interviews. The purpose of these forms of data collection is to determine to what extent social determinates of health, such as economic mobility, living environment, and education level, along with the right to counsel laws influence the incarceration rates and durations in the 2nd ward (wealthiest part of D.C) compared to the 8th ward (poorest part of D.C). The survey data findings from this study will calculate the estimated amount of people in each ward who have reported interactions with the D.C Legal system, based by race, income, and education level. These quantitative results will be integrated into the analysis of themes from interviews with attorneys and non-profit leaders who will explain what needs to be done to help individuals in each ward stay protected from incarceration. The implication of this study's findings will offer recommendations to legal scholars and local government on how to influence foundational changes with D.C wards to decrease incarceration rates for all D.C wards.

DAVID RAYMOND MENDOZA
UCSD
Criminalization of Rap in the 21st Century: Atlanta, GA
Location: Discovery

In May of 2022, Atlanta-based rap label Young Stoner Life (YSL) was indicted on Georgia's RICO Act which categorizes the label as a gang. In the days following the indictment, the Fulton County District Attorney claimed that gangs like YSL are committing conservatively 75% to 80% of violent crimes occurring in their community. However, emerging twenty-first century gang research contradicts the punitive approach and rhetoric used by Fulton County's District Attorney in addressing gangs. There is no empirical evidence or data to back the DA's claim regarding YSL and violent crimes in Atlanta. However, what is evident is that violent crimes are occurring more frequently in specific communities where rappers like rap label YSL grew up and have included in their rap songs. When conducting secondary data analysis, the data suggest that these neighborhoods are the highest in the city regarding poverty, unemployment, and drug use, among other factors. Furthermore, this socio-cultural analysis argues that structural and economic factors such as deindustrialization, a federal war on drugs, and mass incarceration have significantly contributed to the violent crime rates in Atlanta today. To decrease the high rates of violent crime in Atlanta that Fulton County's DA is prioritizing, there needs to be a shift from the traditional punitive approach from law enforcement specifically when it comes to rappers and how gangs are interpreted. There needs to be a focus on the root causes of the issue, such as structural causes from the war on drugs and deindustrialization, rather than periphery factors. There needs to be a transition from punitive approaches to more community-centered policing approaches to gangs and crime particularly not only in the city of Atlanta but nationwide.

JESSICA VALDEZ
University of Colorado Denver
How COVID-19 Hate Crimes Have Shaped AAPI Perceptions of Police
Location: Discovery

Throughout the last few decades, police-community relations have been strained. To repair those relations, it is necessary to understand how citizens perceive the police as the result of recent events as well as other influential factors. A review of multiple studies regarding these topics indicates that perceptions of effectiveness of the police, as well as perceptions about crime and safety were strong predictors of how satisfied citizens were with the police. Many studies of police perceptions were done before the year 2020 and the majority only address Black, White, and Hispanic/Latino populations, with few studies focusing on Asian-American/Pacific Islander (AAPI) views. This is relevant to study because of the increase in hate crimes towards the AAPI community during the COVID-19 pandemic. Increased victimization may have affected perceptions of the police and interactions with the police such as reporting a hate crime. Additionally, the concept of prosecuting a hate crime is also something relatively new to the criminal justice system. Although hate crimes are not new, they are not commonly prosecuted. There is also a lack of available data regarding hate crime statistics. Through surveys and interviews, this project aims to understand the current views the AAPI community has regarding law enforcement. The influence of race, pre-Covid personal experiences with the police, and experiences with the police when reporting a hate crime will be assessed. The results of the survey will be used to develop policy recommendations for the criminal justice system, including for law enforcement, the courts, and new legislation.

August 2, 2023 - 1:30 PM Sociology and Public Affairs Poster Session 5

NATHANIEL EVANS
Cal Poly Humboldt
Understanding the Geography of Cannabis License Types in California and the Impacts of Cannabis Regulation on Humboldt Communities
Location: Centennial Ballroom

I seek to conduct a single-method research project that utilizes the geography of cannabis license types of local Humboldt license holders. I will use descriptive statistics to define raw data from the state of California and focus on Humboldt County's cannabis license types by coding the information and creating graphs to clarify information further. Once I have defined the current information available, I will focus on absent geographic information. The revealed absences will be investigated through case analysis, comparing previous local Humboldt licensed holders' data to the most current ones. The data collected from this research will be coded and identifying information will be changed to protect individuals. Data collected and stored electronically will be encrypted. The study's overall goal is to contribute to informing policy decisions and understanding the impacts on the communities within Humboldt while recording the ongoing consequences of legalization regulations.

RYLAND LAMBERT
Eastern Michigan University
The Impact of Hormone Replacement Therapy on the Clavicle
Location: Centennial Ballroom

One of the many topics that are under-researched in transgender medicine includes the effects of hormone therapy on individuals who are still physically developing. It is understood that the sex hormones estrogen and testosterone contribute greatly to the development of all individuals. Due to the importance that estrogen and testosterone have on bone health, research into the impact of hormone therapy on the development of the skeleton in transgender individuals is crucial to the forensic anthropologist to further expand the data pertaining to human variation that is applied to the identification of unknown decedents. The clavicle in particular is an excellent tool for estimating an individual's age at death, stature, and sex assigned at birth because it continues to grow at a consistent rate until epiphyseal fusion occurs in the late twenties. Due to the clavicle not fusing for such a long period of time, there is the potential for significant bone remodeling and growth far past the typical age of puberty (Hughes et al. 2020). There is also the potential for outside factors to disrupt or change the natural growth pattern of the clavicle at any point in time before fusion. With both of these factors in mind, it can be hypothesized that the introduction of cross-sex hormones before the age of medial epiphyseal clavicular fusion may potentially influence the growth patterns of the clavicle to align more closely with the gender one is transitioning to.

LION LEONIS
Southern Oregon University
Transphoia and Why it Shouldn't Exist
Location: Centennial Ballroom

Transphobia is everywhere and inescapable in the current western society. Everyday there are new narratives portraying trans people as unnormal and sometimes even as evil. Despite these narratives being disproven with a quick google search they are widely accepted by society leading to a great deal of internalized transphobia as well as countless other issues for the trans community. Over this review will provide a one stop shop for disproving the most common anti trans messages seen and heard today. Gender affirming care being harmful to children when in reality it is proven to prevent suicide. Trans individuals being violent when they are in fact less like to commit acts of violence then non trans individuals. Trans people being label as "groomers" when they are far less likely to commit act of sexual crimes then non trans people. The newer claim of how the trans movement is a way of sterilizing people with autism and why that is such a harmful and dangerous narrative.

SCOTT TOMLINSON
California State University, Long Beach
Impression Management and Corporate Social Responsibility
Location: Centennial Ballroom

Corporate social responsibility (CSR), whether voluntary or imposed, is not a novel concept. Early manifestations included the redress of egregious labor practices; and subsequent to those were the enactment of environmental protections. As scientific data continues to indicate anthropogenic global warming as possibly the greatest existential threat to humanity, corporations, as major contributors of greenhouse gases, face mounting pressures from multiple sectors of society (activists, politicians, governments, consumers, shareholders, etc.) to assume their share of the responsibility. In the past, very seldom has the acceptance of these responsibilities been voluntary. They are often viewed as anathema and antithetical to the neoclassical economic model, detracting from the fiduciary duties of increasing shareholder value. The popular notion promoted by corporate social agents, that "companies which do good can also do well," continues to receive tremendous criticism as a deviation from core business objectives, and therefore creates dissonance in many companies' attempts to satisfy all stakeholders. This research is a longitudinal textual analysis of corporate reporting. It compares several prominent Fortune 1000 companies and explores how these organizations engage in CSR impression management (marketing), specific to environmental concerns, and whether their messaging and its implementation align, remain consistent, or alter over time. If the marketplace is the reflection of the demands of a society and, as such, responds to changes in the demands placed upon it, this study hopes to expand on how business contributes to society and how society influences business.

August 2, 2023 - 2:45 PM Atmospheric and Environmental Science Breakout IX: Panel B

MIKAYLA DEIGAN
University of California Davis
Hydroclimate Variability During the 8.2ka Event Revealed by Trace Element Analysis of a Southern Sierra Nevada Stalagmite
Location: Pinnacle

Speleothems (cave deposits) are multi-proxy paleoclimate (past climate) archives that record the geochemical signature of the dripwater from which they precipitate. Speleothems can be used to interpret paleo hydroclimate and wildfire conditions by analyzing variations in: trace elements (TE), delta18O, and fire-indicative organic molecules. Homann et al., (2022) found that a coastal California stalagmite record highlighted the highly variable hydroclimate, vegetation, and wildfire conditions throughout the 8.2ka event. The impact of this event on other climate systems in the Pacific Northwest remains understudied. This study presents a high-resolution TE record from a stalagmite from the Sierra Nevada. We analyzed a continuous time-series of multiple TEs. Preliminary work shows that Strontium, Magnesium, and Barium all have the same general trends, are most likely governed by water-bedrock interactions, and reflect changes in infiltration; corroborated by PCA. Sodium, Phosphorus, Copper, Aluminium and Uranium all display unique peaks in their TE time-series and are likely the result of detrital pulses from the soil, either from flooding or post-fire deposition. The Phosphorus time-series generally covaries with fluorescence bands indicating organic matter flushing in from the soil. Disagreement between these records can potentially differentiate ash derived from soil derived Phosphorus. Further research is needed to establish this paleofire proxy. By providing multi-proxy benchmark data, speleothems can improve climate models during periods of high variability and whiplash climate. Comprehensive high-resolution records are required to gain insight into periods of highly variable hydroclimate conditions and to refine our understanding of their implications for climate models.

SARAH GEE
East Central University
The Effect and Rradeoffs of Treatment for Lake Phosphorus Reduction on Methanogenesis, Denitrification, and Respiration Rates in Ponds Subject to Drying
Location: Pinnacle

The presence of phosphorus (P) in ponds and lakes is needed for normal algal and plant growth, however excess P can be harmful and overstimulate primary production leading to eutrophication (Carpenter et al. 1999, Carpenter 2008). A new P reducing agent called Phoslock®, a lanthanum-embedded bentonite clay, is being added to ponds and lakes to help decrease this harmful growth. We sought to evaluate the effects of Phoslock® treatments on biogeochemical processes of methanogenesis, respiration, and denitrification rates in ponds and lakes. Typically, in lakes and ponds, these biogeochemical processes are governed by environmental conditions such as temperature, moisture, oxygen, but the addition of P reducing agents like Phoslock® may alter the rates and degree of biogeochemical processing. The results of this study are still ongoing; however, we have determined the mineral composition of Phoslock® through an average of ten XRD scans. The gravimetric water content and bulk mass densities from each of nine sampled sites was calculated, and nitrous oxide, carbon dioxide, and methane gas levels produced from both Phoslock® and non-Phoslock® treated sediment samples have been analyzed.

ANGELINE HIGBY
University of California, Santa Barbara
Finding the Slippery Slope: Himalayan Landslide Image Analysis
Location: Pinnacle

Landslides are unpredictable geologic hazards composed of mass wasting of rock, soil, or debris down a slope. They pose threats to the local ecosystem, human lives and economic activity. We seek to measure Himalayan hillslope deformation by comparing pre- and post-landslide satellite imagery using geospatial image analysis software, COSI-corr (Co-registration of Optically Sensed Images and Correlation) integrated under ENVI (the Environment for Visualising Images). The images will be georeferenced and orthorectified to accurately reference their location and remove distortions. We expect to find incipient motion in the pre-landslide imagery through analysis of sub-pixel offsets. In understanding how this sub-pixel offset appears, we hope to be able to apply this to predictive modeling of future landslides.

August 2, 2023 - 2:45 PM Chemistry and Biochemistry Breakout IX: Panel B

CAT AVARVAREI
UCSD
Chemical Biological Study of Toll-like Receptor (TLR) Structure and Activity in Pharmaceutically Significant Transmembrane Proteins
Location: Odyssey

Transmembrane receptor proteins allow cells to communicate with each other and with the outside world, which is why most pharmaceutically significant drugs are designed to target these proteins. By delivering specific ligands to receptors like TLR4 and mu-opioid, specific signals within a cell can be induced. Therefore, by isolating the polypeptide chains of these natural receptors, their structure and reactivity can be studied. To do this, recombinant protein expression, or total chemical peptide synthesis via solid phase fmoc-synthesis are used. The fragments resulting from these methods are characterized through Liquid Chromatography Mass Spectrometry (LC-MS) and purified through Reverse Phase High Pressure Liquid Chromatography (RP-HPLC). Preliminary SDS-PAGE, LC-MS, and RP-HPLC results show that specific fragments can be isolated and identified. Molecular dynamics (MD) simulations are also used to test and visualize variations in polypeptide design. So new structures predicted to be stable and promising in their activity can be synthesized. Lastly, new fragments can be tested in cell assays to verify their activity.

REGINA JAREANPALITHAPON
University of Minnesota - Twin Cities
Purification of Human Apolipoprotein A1 (ApoA1) from Blood Plasma Using Mixed Mode Chromatography
Location: Odyssey

This research aims to establish a method for purifying human Apolipoprotein A1 (ApoA1) from blood plasma necessary for reconstituting into synthetic high density lipoprotein (sHDL) particles. Purifying ApoA1 is a crucial step in developing sHDL as it makes up approximately 70% of HDL. The function of HDL is believed to promote reverse cholesterol transport. Additionally, HDL has been found to be a potential therapeutic for sepsis since it is a part of regulating the vascular endothelial function and immunity. Given the significance of HDL in these processes, there is a large interest in developing sHDL containing ApoA1 as a potential therapeutic approach and biomarker for various conditions. The method to purify ApoA1 from human blood plasma involves following the procedures from G. et al.'s paper that proposed a seemingly less time-consuming and obtaining a high yield of purified ApoA1 in comparison to conventional methods. For this research project, human blood plasma was precipitated using 60% (NH4)2SO4. Then the supernatant was used onto a HEA HyperCelTM column that eluted the bound proteins with discontinuous pH gradient. The elutions were pooled and the purified ApoA1 was analyzed for homogeneity and yield through SDS-PAGE gel electrophoresis, Western blot analysis, densitometric analysis, and mass spectrometry analysis. The results from this study highlights the challenges faced in purifying ApoA1 and suggest that further purification strategies should be explored to improve the yield and homogeneity of purified ApoA1.

JENNIFER NGUYEN
University of Colorado Denver
Modeling of CLCF Flouride/Proton Antiporter
Location: Odyssey

Fluoride ions safeguard dental hard tissues and prevent bacterial growth in the oral cavity. However, some bacterial strains, like Streptococcus mutans, which is a significant cause of tooth decay, can survive in environments of high fluoride concentrations. The fluoride resistance of S. mutans is largely due to the CLCF transport proteins that pump fluoride ions out of the cell. The aim of this project is to investigate the mechanistic changes in the fluoride permeation when the gating E318 residue of CLCF is mutated. The crystal structures of a prototypical CLCF protein, CLCF -eca, reveal that two fluoride ions are located at the canonical anion-binding sites. The fluoride ions are coordinated by a number of residues such as Y396 and E318. Of particular interest to us is the glutamate residue E318, which is conserved in CLCF proteins but not found in the closely related homologous CLC proteins that translocate chloride ions. Interestingly, experiments found that, in the E318Q mutant, where E318 is mutated to a charge-neural glutamine residue, the fluoride ion permeation rate increases. Our hypothesis is that fluoride ion interact more strongly with a protonated glutamate through proton sharing than with a glutamine through hydrogen bonding. We will carry out molecular modeling to study the translocation of the fluoride ion through the pore of the E118Q mutant. We will construct an atomistic model of the E318Q mutant through in silica mutation to the experimental structure of E118. The knowledge gained through this study will be valuable in our comprehensive understanding of CLCF operation mechanisms and can help us develop better therapy to deal with these difficult strains.

MAIYIA VANG
University of Wisconsin - Madison
Examination of ASBT mRNA and/or Protein Level in the Ileum of MGAT2 KO Mice and its Wild Type Controls
Location: Odyssey

Mice with a deficiency of the intestinal enzyme monoacylglycerol acyltransferase 2 (MGAT2 KO) are protected from metabolic disorders induced by high-fat feeding. Our lab further showed that these protective effects are due to elevated bile acid levels in their plasma, likely resulting from enhanced bile acid reabsorption in the ileum through the apical sodium-dependent bile acid transporter (ASBT). The ASBT transporter, mainly expressed in the ileum, reabsorbed most of secreted bile acid back into the portal vein to the liver. My study this summer aimed to examine whether MGAT2 KO mice have a higher expression of ASBT at the mRNA and/or protein level than their wild-type (WT) controls. I isolated the jejunum (control) and ileum tissues from WT and MGAT2 KO mice to examine ASBT at the protein level utilizing Western Blot with anti-ASBT antibodies and at the mRNA level using qPCR. I found that the relative expression of ASBT proteins in the ileum of MGAT2 KO mice is trending higher. However, ASBT protein expressions were not detected in the jejunum. The ASBT mRNA level in the ileum of MGAT2 KO is trending higher but does not reach statistical significance. The next step is to repeat the experiment with more samples, including MGAT2 KO mice and WT with low and high bile acid levels in plasma. My study may be significant to understanding the factors that protect MGAT2 KO mice from obesity and associated metabolic disorders.

August 2, 2023 - 2:45 PM Communication, Economics, and Geography Breakout IX: Panel B

DREW GROSS
Augsburg
Anti-Racist Pedagogy: An Extended Literature Review of the Communication Discipline
Location: Pathways

The communication discipline equips undergraduate students with the skills to interact ethically and effectively with the world. Increasingly, students seeking careers in communication related fields need to be prepared to use these skills across different areas. This paper argues that the communication discipline should embrace and implement anti-racist pedagogy as a way to create effective and ethical communicators who are equipped to create positive organizational and social change. This move toward anti-racist pedagogy is vital because college students need to be equipped to confront systemic injustice that is becoming more widely acknowledged because of digital communication and social media. Anti-racist pedagogy is the method and curriculum used to teach content in reference to race, ethnicity and power dynamics. The goal of this pedagogy is to move beyond celebrating diversity and towards action. “Anti□racist pedagogy seeks to eliminate social oppression through reflection and action,” (Basque and Britto, 2019, p. 2). It challenges individual and systemic oppression at the interpersonal, institutional and cultural levels, (Blakeney, 2005). Utilizing an Anti-racist pedagogy can promote the inclusivity of people from historically marginalized groups to the communication discipline and open spaces for the exchange of ethical and effective ideas between people of different backgrounds. Anti-racist pedagogy is effectively being used in a variety of disciplines. The expected result of this research is an articulation of the value of this framework specifically within the communication discipline.

MOHAMMED MOHAMMED
University of California, Davis
Increased Engagement on Social Media Platforms Can Disseminate Public Health Information In Developing Nations: The BAANG Platform in Pakistan
Location: Pathways

Governments and NGOs are increasingly leveraging social media to share important health information. Sharing public health information on social media is particularly valuable in developing countries, such as Pakistan, with poor-quality health information systems. The BAANG social network allows users in rural Pakistan a potential medium for sharing health information by allowing users to call in, record audio posts, and listen to posts. This study was tested using data from 6000 users on the platform during the early period of COVID-19 information dissemination. Preliminary analysis of the BAANG data suggests that usage patterns vary remarkably across users - some call in once while others post frequently. This study determines whether users who receive more engagement with their posts subsequently engage with the platform more, and are thus exposed to more health information. We define engagement as 1) quality engagement based on post quality, and 2) random engagement based on the time users post. By analyzing post quality ratings and the time of each post, we find that random and quality engagement both have significant effects on future engagement and thus exposure to public health information. We also conclude that quality engagement has a bigger effect than random engagement, with random engagement exposing users to twice as much health information and quality engagement more than doubling user exposure to health information.

August 2, 2023 - 2:45 PM Humanities Breakout IX: Panel B

BIONCA BENARD
UCLA
(White) Speculative Fiction: Racial Representation in The Handmaid's Tale Franchise
Location: Innovation

Margaret Atwood's 1985 novel The Handmaid's Tale depicts a future where the US government has been overthrown by a militarized totalitarian theocracy and the fertility of women is treated as capital. Atwood's novel is typical in that a white worldview masquerades as the universal human perspective. Calling attention to this aspect of Atwood's narratives denaturalizes the way white racial experience remains unracialized. This project contemplates the absence of non-white characters in The Handmaid's Tale. The treatment of women's fertility as capital was a cornerstone of American slavery, resultantly, Black female experience. Hulu adapted the novel into a television series in 2017 with a multiracial cast. However, the diversity remained cosmetic. Atwood continued this dystopian storyline in her 2019 novel, The Testaments, including Hulu's newly raced characters, with the same result. Analyzing the characterization of women in the franchise, I consider how the creation of dystopian/utopian worlds rely on the selectivity of racial representation to reinforce the white literary canon. My analysis contends that neither the Hulu adaptation's multiracial casting, nor Atwood's appropriation of racial diversity, displaces the white dystopia of her 1985 novel. "(White) Speculative Fiction" will investigate the literary and cultural mechanisms by which whiteness persists as the dominant standard of aesthetic imagination. Examining The Handmaid's Tale as a literary, televisual, and cultural spectacle argues that the structure of white futurism resists genuinely inclusive discourses.

ELLIE TRAHERN
Southern Oregon University
Native Hawaiian Poetry and Identity Expression: A Literary Analysis
Location: Innovation

Native Hawaiian ways of life significantly changed after the arrival of colonial powers in the 1800s. Specifically, Hawaiian poetry was significantly influenced by traditional English-literature forms of poetry and literature. Native Hawaiian poets and authors adopted and adapted their poetry, oli, and mele to take on forms of both pre-contact and English-literature traits. Authors like Haunani-Kay Trask and those who were at the Mauna Kea protests, such as Hina Wong- Kalu, used these adapted structures to tell their stories of how colonialism has changed the ways of Native Hawaiian identities and life itself.

MICHAEL WHITE
University of Minnesota-Twin Cities
Transracial Adoption in America
Location: Innovation

Transracial adoption in the United States creates barriers to racial identity, and cultural development among transracial adoptees (TRA). These barriers are especially present In Black TRAs raised by White parents due to conflicting racial lenses and often lack of exposure to TRA's own racial and cultural background. Although transracial adoption is common in the United States, very few parents, social workers, therapists, or adoptees have information available to assist navigation of the complicated development of TRA identities. This book review aims to highlight the importance of supporting the development of racial and cultural identity among Black TRAs. This book review is on Transracial Adoption, Identity, and Racism in the United States by Kyrai E. Antares. Antares is a licensed psychologist, professor, anti-racism consultant, and white adoptive mother of two with a mixed-race child. The book features nine Black emerging adults and their experiences while being raised by white parents based on journal entries and interviews. Antares' research supports the nine Black TRAs' experiences. Continually, the book guides parents and professionals to support black TRAs in racial and cultural development while providing a community for Black TRAs. This book review will also have an individual component as a black TRA myself. I will include my own experiences and connection with the book to support parents, professionals, and other TRAs that may want to utilize the review and drive home its potential real-world applications. The completed book review will be available by Late Summer 2023.

August 2, 2023 - 2:45 PM Psychology and Cognitive Science Breakout IX: Panel A

LOGAN BRADLEY
Augsburg University
Effects of Inverted vs. Upright Faces on the N170 Event-Related Potential Face Effect
Location: Optimist A

Event-related potentials (ERPs) reflect the ongoing changes in EEG activity as a result of the brain's response to various stimuli. ERPs are valuable tools for understanding the time course and nature of cognitive processes (e.g. attention or categorization) that occur before, during, and after the presentation of a stimulus. The N170 ERP component is emerging as a key neural indicator in psychology and associated disciplines. The N170 is characterized by a large negative deflection in the brain's electrophysiological activity that occurs around 170 ms after a visual stimulus is presented, with a greater amplitude in response to faces in particular. Given its potential to grant insight into perhaps one of the most important stimuli in our species, the present study will investigate the N170 ERP face effect in a design that uses both upright and inverted faces. As the N170 is sensitive to the structural and configurational aspects of faces, it is anticipated that this will eventually allow for the distinction of how the brain perceives faces from non-face stimuli. Participants (N = 20) will passively view pictures of inverted and upright faces while being asked to mentally count rarely interspersed pictures of butterflies. It is predicted that a larger negative amplitude and longer latency for the N170 will be elicited for inverted faces compared to upright faces, consistent with the literature. These results will complement and improve the ongoing research that investigates the utility of the N170 ERP as a potential biomarker for face processing.

DIANA CORTEZ
Idaho State University
Are There Changes in Treadmill Stepping Following Spinal Cord Injury in Rats?
Location: Optimist A

Following spinal cord injury (SCI) ascending and descending neural tracts between the brain and spinal cord can be disrupted, affecting sensory and motor function. However, if the injury occurs during early development, plasticity within the spinal cord allows for greater potential of recovery of motor function compared to adults with the same injury. Previous research with locomotor training paradigms suggests that routine treadmill training increases locomotor performance in animals with SCI. The purpose of this study was to examine hindlimb stepping behaviors following a neonatal SCI. A total of 40 rats were placed into four different groups (2 sexes x 2 surgery conditions). On postnatal day 1 (P1), male and female rats underwent a complete spinal cord transection (T8-T10) or a sham operation. Each rat received treadmill training from P10 through P17 for three ten-minute sessions per day. Video recordings were conducted on the last session of the first and final day. Treadmill steps were scored as unilateral or bilateral (coordination) and plantar, other, or mixed (foot posture)–with mixed being exclusive to bilateral stepping. This study will help identify how spinal circuitry and plasticity can support hindlimb stepping behaviors following an SCI. This research has clinical implications for physical and rehabilitative therapies which utilize use-dependent activity to harness neural plasticity and training to promote better sensory and motor function.

HAFSA HASSAN
Augsburg University
P300 Oddball & N170 Face Effect
Location: Optimist A

This study aims to delve further into the P300 wave which allows insight into the brain's recognition and evaluation of the significance or unfamiliarity of a target stimulus, as well as the N170 event potential, which is essential and critical to understanding the perception and processing of human faces. The P300 is elicited in experimental situations that involve participants detecting infrequent target stimuli embedded within a series of more frequent non-target stimuli. Similarly, in the present study, the P300 is tested through the occasional images of butterfly stimuli while the frequent and more consistent non-target stimuli are facial images. The experiment is done in four separate blocks with individuals' faces ranging from four different races (White, Black, Hispanic/Latino, Asian) with a final fifth block of faces testing for own-age bias consisting of white younger and older adults. The P300 wave represents a higher cognitive function of information processing within the brain of the individual. By presenting when a certain, out-of-the-ordinary, stimulus is elicited the P300 effect allows for the understanding of cognitive information processing abnormalities Furthermore, we expect to identify the effect of inverted faces on facial perception and lastly, where the majority of emphasis on this paper lies, is the P300 oddball effect.

SAMANTHA KROCAK
University of Minnesota - Twin Cities
Auditory Brainstem Responses to Speech Made with Various Chirp-Phase Profiles
Location: Optimist A

Auditory brainstem responses (ABRs) are used to objectively identify hearing loss across multiple frequencies in young children. Typically, brief tone-like sounds are used, but new “peaky speech” audiobook stimuli were created to facilitate faster testing by engaging toddlers who cannot nap, sit still, or participate in behavioral testing. Compensating for inner ear timing delays across frequencies of peaky speech (“CE-chirp-phase”) evoked more synchronous neural activity and larger ABRs compared to the original zero-phase speech, resulting in faster testing times. However, the timing of ABR waveforms suggested the CE-phase profile overcompensated the ear’s timing delays. Other delays, or phase profiles, may provide better synchrony in the inner ear and faster ABRs. Therefore, this study aimed to determine which chirp-phase profile produces the largest ABRs in the fastest recording time. Based on a pilot study, four chirp-phase profiles were chosen: CE, 2 level-dependent (60-dB and 65-dB), and a new peaky speech-based chirp. To date, 10 adults with normal hearing listened to 30 minutes of each chirp-profile while 2-channel ABRs were recorded. Overall, 60-dB chirps evoked the smallest ABRs, whereas the other three chirps evoked similarly sized ABRs with average signal-to-noise ratios (SNR) above a criterion 0-dB after 30 minutes. Four participants had all frequency-specific ABRs at 0-dB SNR within 22 minutes for the CE, peaky speech and 65-dB chirps. In summary, slightly different chirp profiles produce similar ABRs in reasonable recording times for some participants. Reducing testing time will be important for future audiobook-based ABR testing in toddlers.

August 2, 2023 - 2:45 PM Psychology and Cognitive Science Breakout IX: Panel H

DANIEL EGZIABHER
University of California, Davis
The Effect of Social Experience on Oxytocin Receptor Density in Prairie Vole Tissues
Location: Optimist B

Social relationships play a key role in overall physiological and psychological well being. The COVID-19 pandemic highlighted the need for a better understanding of the physiological consequences of isolation and decreases in social connectedness. The prairie vole is an excellent model to study the biological consequences of differing social conditions because it is a small rodent that exhibits both pair bonding and biparental care. Here we will examine differences in oxytocin receptor density in prairie voles that were placed in different social groups. Oxytocin has been implicated in the importance of social interactions and social experience.

Prairie voles were housed singly or in opposite-sex pairs and underwent metabolic testing. Following testing, the subjects were euthanized and tissue was collected for histological analysis. In the next few months, brain and adipose tissue will be sectioned and undergo autoradiography to determine oxytocin receptor density in several regions of interest.
We anticipate finding differences in OTR density in certain brain regions and within adipose tissue that will reflect both metabolic changes and changed behavior.

DEVYN MOYA
University of Arizona
Nonverbal Communication and Warmth
Location: Optimist B

Nonverbal communication plays an important role in interpersonal relationships and how we perceive others. One significant aspect of nonverbal communication is warmth which conveys emotions like friendliness, empathy, and pleasantness. The present research aims to identify the specific nonverbal behaviors that are perceived as warm and later apply these in the medical field. Through systematic observations, experiments, and surveys, we investigate how and what nonverbal cues contribute to the perception of warmth. The findings of this research will offer valuable insights into how people understand each other without language and give opportunities for improvement. Future research will aim to test the longitudinal effectiveness of a nonverbal communication training workshop. We expect to see positive effects on relationships between medical professionals and their patients when warm nonverbal behaviors are used. Overall, this study provides an exploration of nonverbal communication and warmth while highlighting ways for both to be used in a medical setting. By doing so, the research contributes to a deeper understanding of the fundamental dynamics that shape emotional experiences and social connections.

MYA REEVES
University of Minnesota - Twin Cities
Separate Spheres Ideology: Abortion Attitudes and the Overturning of Roe v. Wade
Location: Optimist B

This 3-wave panel study examines the relationship between Separate Spheres Ideology (SSI), abortion attitudes, and attitudes toward reproductive health policies. Prior research on gender ideology has focused on prescriptive and descriptive stereotypes as measures, but this study aims to further test the validity of SSI as a measure of gender ideology. It was generally expected that those respondents who endorse SSI, who are committed to preserving the gendered-status quo in society, will be more likely to endorse the SCOTUS decision in Dobbs vs. Jackson Women's Health Organization and related policy attitudes when the Dobbs decision is depicted as a threat to the gendered status quo. So far the results have supported this hypothesis. The surveys were administered through Bovitz/Forthright, an online research panel. The analytic focus was to test the interaction between SSI at Time 1 and the experimental factors presented at Time 2. Wave 1 included baseline measures, such as SSI, age, gender, ethnicity, sexual orientation, education, political ideology, and political party, serving as control variables. In Wave 2, participants were randomly assigned to the control condition or one of two experimental conditions (Societal Impact or Basic Impact). Survey questions in Wave 2 measured various dependent variables, including attitudes toward abortion. Wave 3 also assessed attitudes toward Dobbs and other policy-related questions on abortion and reproductive health, but Wave 3 analyses are beyond the scope of this project. The study aims to examine the validity of SSI and its influence in a new, non-electoral context.

KAREN RODRIGUEZ-CORTEZ
University of Nebraska-Lincoln
The Role of Social Networks and Loneliness in Discrimination-Related Mental Health Outcomes among Hispanic Immigrant Women in Nebraska
Location: Optimist B

Loneliness appears to result in an array of negative health and mental health outcomes, including early death (Holt-Lunstad et al., 2015). While discrimination directly and negatively affects social relationships, its role in contributing to loneliness is not well understood. Additionally, many groups that experience higher rates of discrimination, such as immigrant Latinx populations, also experience social disruption from immigration. Social support networks may protect against the negative health impacts of loneliness and may also improve discrimination-related mental health outcomes (Lee et al., 2019; Held et al., 2022). The current project examines these factors in connection with each other. Participants were 79 Latinx residents of a rural midwestern community. Participants completed a series of questionnaires, consisting of social support (MSPSS), depression (PHQ-9), post-traumatic stress disorder (PCL-5), loneliness (UCLA Loneliness scale), frequency of discrimination exposure (everyday discrimination scale) and a social network questionnaire. Analyses are ongoing and will examine the extent to which discrimination and years in the U.S. predict loneliness, social support, and the number of supportive social network ties a person reports. They will further examine how loneliness, social support, and supportive ties uniquely predict post-traumatic stress disorder and depression symptoms. Data will contribute to our understanding of how social networks and loneliness impact discrimination-related mental health outcomes. Further, this study will support mental health practitioners in assessing the needs of immigrant communities and will aid the development of adequate treatment interventions.

August 2, 2023 - 2:45 PM Sociology and Public Affairs Breakout IX: Panel B

AKARY HERRERA
Westminster University
Beyond Female Hysteria: Challenging Medical Exclusion and Validating Migraine in Women
Location: Discovery

This study aims to investigate the presence of medical and gender bias in the treatment of migraines, a neurological disorder that disproportionately affects women. Previous studies on women with migraines have primarily focused on exploring gender-based differences within the disease, as well as biological explanations for why women experience migraines more frequently and severely than men. Although there are many medical viewpoints on the causes and treatments of migraines, I argue that there would be more research on migraines if they affected men just as much as they affect women. I believe this is due to historical gender bias in the field of medicine. The medical field and healthcare system still show signs of outdated beliefs that have led to sexism and misogyny. For example, in the past, women were often misdiagnosed with hysteria and subjected to lobotomies. These biases continue to affect the study and treatment of migraines that persist in today's medical landscape and within doctors' offices. The objective of my research is to gather personal anecdotes and experiences from women who have a history of migraines, to explore how the healthcare system has either supported or hindered their journey in terms of diagnosis, treatment, and overall health outcomes.

MERCY KIBET
University of Colorado Denver
The State of Black Maternal Health in Colorado
Location: Discovery

In the United States, Black women/birthing individuals experience disproportionate maternal mortality rates. According to the Centers for Disease Control and Prevention (CDC), “In 2020, the maternal mortality rate for non-Hispanic Black women was 55.3 deaths per 100,000 live births, 2.9 times the rate for non-Hispanic White women” (2022). This research proposal is driven by two primary research questions: (1) How do race and racism impact the maternal healthcare experiences of Black women/birthing individuals in Colorado? (2) How are maternal health care providers working specifically to improve the maternal health care experiences of Black women/birthing individuals in Colorado? To answer these questions, I plan to conduct 20 interviews: 10 interviews with Black women/birthing individuals and 10 interviews with care providers who support and care for Black women/birthing individuals during pregnancy, childbirth, and postpartum. Interviews with Black women/birthing individuals will focus on their general experiences receiving maternal health care in the US. Interviews with providers will ask about how they are working to alleviate the disparities that Black women/birthing individuals face in pregnancy, childbirth, and postpartum. I will also use a content analysis method to analyze articles about high-profile Black women/birthing individuals who have experienced complications during and/or after birth. I will categorize by outcome, provider interactions, age, birth sequence, recovery time, emotional impact, and profession. This project seeks to affirm the experiences of Black women/birthing individuals in the United States and to educate maternal health care providers in order to alleviate the disproportionate maternal mortality rates.

NYAW TOO
University of South Carolina
Whole Genome Sequencing: Considering Regulations, Policies, and Procedures
Location: Discovery

This research will explore the opinions of young adults between the ages of 19 to 30 about the vulnerabilities of using DNA sequencing tests as a part of couples’ prenatal care in effort to determine every possible mutation, variations, and cancer that future off springs may have. I will conduct a survey-based experiment to gather information from a sample of seventeen young adults between the aforementioned age groups. The findings from the survey could assist scientists to acknowledge public opinion and aid in guiding their decisions on how to move forward with genome sequencing. Ultimately, the survey findings could give scientists an idea of the type of regulations that young adults would like to see when it comes to genetic testing as well as different policies that should be considered.

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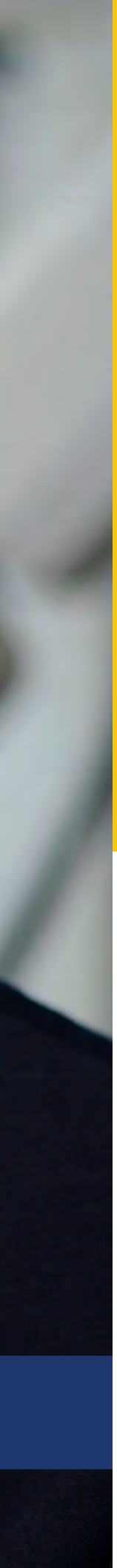

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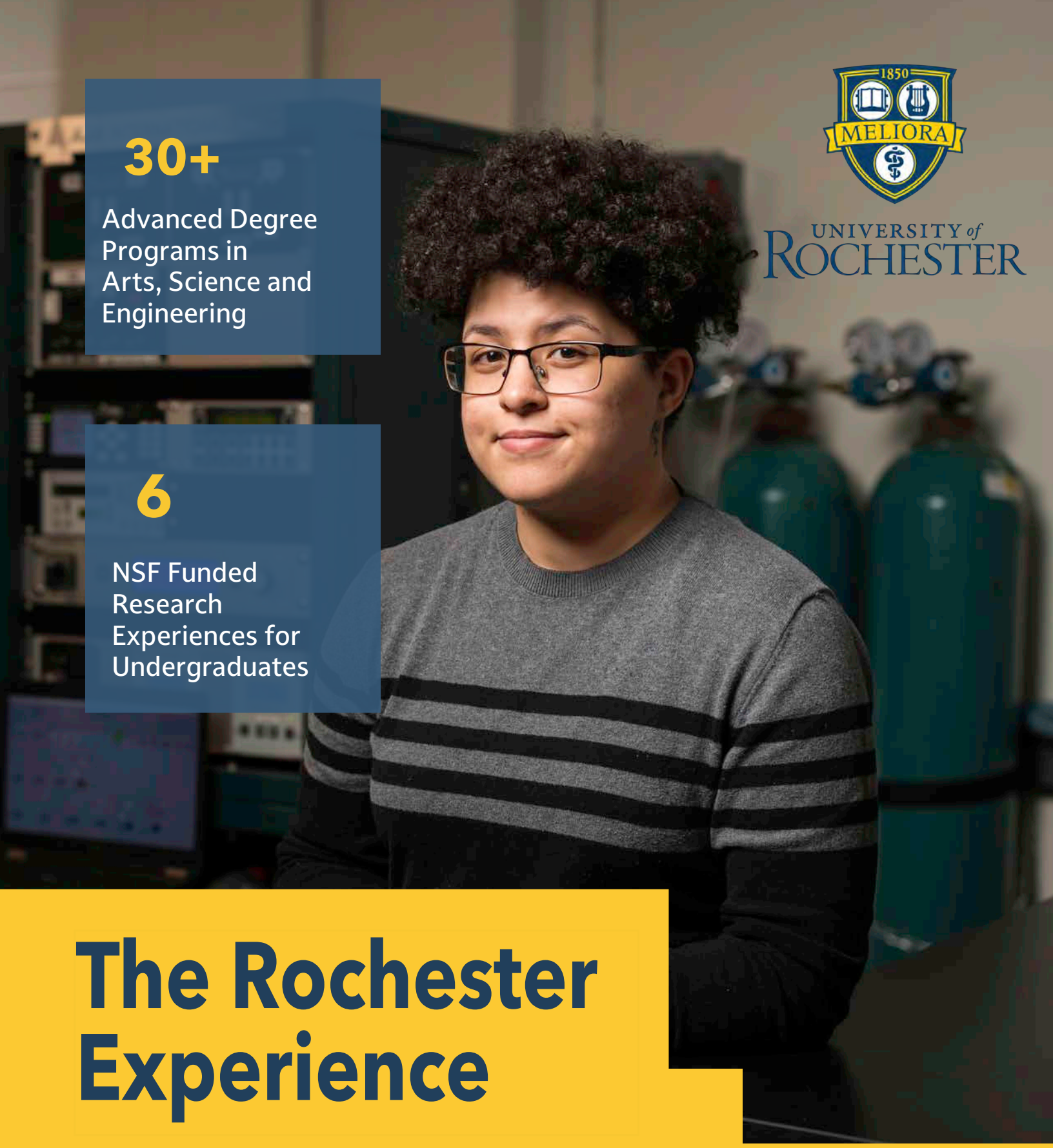

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