2019 UNM McNair Scholars Research Conference

Discover the Power of Networking

October 3 & 4
Albuquerque, NM

MCNAIR.UNM.EDU

THE UNIVERSITY OF NEW MEXICO
About Dr. Ronald E. McNair:

Ronald Erwin McNair was born October 21, 1950, in Lake City, South Carolina. While in junior high school, he was inspired to work hard and persevere in his studies by his family and by a teacher who recognized his scientific potential and believed in him. McNair graduated as valedictorian from Carver High School in 1967. In 1971, he graduated magna cum laude and received a Bachelor’s of Science degree in Physics from North Carolina A&T State University (Greensboro).

Ronald McNair then enrolled in the prestigious Massachusetts Institute of Technology. In 1976, at the age of 26, he earned his Ph.D. in laser physics. His dissertation was titled, “Energy Absorption and Vibrational Heating in Molecules Following Intense Laser Excitation.” Dr. McNair was presented an honorary doctorate of Laws from North Carolina A&T State University in 1978, an honorary doctorate of Science from Morris College in 1980, and an honorary doctorate of science from the University of South Carolina in 1984.

While working as a staff physicist with Hughes Research Laboratory, Dr. McNair soon became a recognized expert in laser physics. His many distinctions include being a Presidential Scholar (1971-74), a Ford Foundation Fellow (1971-74), a National Fellowship Fund Fellow (1974-75), and a NATO Fellow (1975). He was also a sixth degree black belt in karate and an accomplished saxophonist. Because of his many accomplishments, he was selected by NASA for the space shuttle program in 1978. His first space shuttle mission launched successfully from Kennedy Space Center on February 3, 1984.

Dr. Ronald E. McNair was the second African-American to fly in space. Two years later he was selected to serve as mission specialist aboard the ill-fated U.S. Challenger space shuttle. He was killed instantly when the Challenger exploded one minute, thirteen seconds after it was launched. Dr. McNair was posthumously awarded the Congressional Space Medal of Honor. After his death in the Challenger Space Shuttle accident on January 28, 1986, members of Congress provided funding for the Ronald E. McNair Post-Baccalaureate Achievement Program. Their goal was to encourage low-income and first-generation college students, and students from historically underrepresented ethnic groups to expand their educational opportunities by enrolling in a Ph.D. program and ultimately pursuing an academic career. This program is dedicated to the high standards of achievement inspired by Dr. McNair’s life. There are currently 187 McNair programs nationwide.
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Welcome to the 2019 University of New Mexico (UNM) McNair Scholars Research Conference!

We are pleased you have chosen to attend this important forum. Whether you are a member of the UNM community or you are attending from one of the many universities represented from coast-to-coast, we are very happy to host you on our campus.

Nelson Mandela once said, “Education is the most powerful weapon which you can use to change the world.” As a first-generation college graduate myself, these words ring very true to me. Education, hard work and determination certainly changed my world by allowing me to become the first female president of The University of New Mexico, a major research university. It is my sincerest hope that education has a profound impact on your life and that each of you use your knowledge to change the world.

Research is also a powerful tool for building knowledge, to discern from truths and falsehoods, and a means to understand even the most complicated issues. It allows us to learn from historical expertise and build upon those who came before us to solve our current challenges.

By allowing first-generation, low-income and underrepresented students to conduct faculty-mentored research, the McNair Scholars Program provides high achieving undergraduates with the opportunity to prepare for the pursuit of a Ph.D.

Over the next two days, this national research conference will provide McNair Scholars from UNM and across the country the opportunity to present high-level research in a moderated symposium. In order to further support academic excellence, all UNM undergraduates who are interested in research have also been invited to participate in this forum. I am so glad each of you chose to attend this conference, thus furthering our collective knowledge together.

While you are here, I hope you will also take some time to enjoy our beautiful campus and the greater Albuquerque area. From hiking in our picturesque Sandia Mountains to enjoying delicious New Mexican cuisine – please enjoy your stay!

Garnett S. Stokes
President
Dear Conference Participants,

The University of New Mexico, Student Affairs welcomes you all to our 2019 UNM McNair Scholars Research Conference. The conference will allow you to:

- Present research to your peers from around the country and faculty in your field from UNM;
- Meet with professionals, graduate students, and recruiters from graduate programs from across the country;
- Provide you with cultural experiences unique to New Mexico and learn about applying to graduate school;

This conference is organized under Student Services, as part of the UNM Division of Student Affairs. It is hosted by the College Enrichment and Outreach Programs through the Ronald E. McNair Program at the University of New Mexico. This program serves and assists low-income, first generation, traditionally underrepresented college students, and students with disabilities. The goal is to progress through the academic pipeline from middle school to post-baccalaureate programs through our efforts.

We are pleased to welcome such a promising young group of scholars to our university and hope you will enjoy your stay here. We anticipate that during your stay you will learn much about our beautiful state, and our host institution, the University of New Mexico, which boasts many fine graduate programs and facilities.

Sincerely,

Eliseo "Cheo" Torres
Vice President for Student Affairs
University of New Mexico
DAY 1 CONFERENCE AGENDA: THURSDAY, OCTOBER 3, 2019  UNM Campus

Most events held in the Student Union Building (SUB)

7:30 a.m. – 8:45 a.m.  Conference Registration & Breakfast, SUB Top Floor Lobby

9:00 a.m. – 10:15 a.m.  Opening Ceremony and Networking Event, Welcome Address by Dr. Cheo Torres, Vice President for Student Affairs, UNM. Networking event facilitated by Liz Danielle, Asst. Director for Graduate Diversity, Univ. of Rochester, Woodward Hall 101 (directly west of SUB)

10:30 a.m. – 11:30 a.m.  Graduate School Fair Session #1* (Ballrooms, SUB Main Level) & Research Poster Presentation Session #1* (Atrium, SUB bottom floor)

11:45 a.m. – 12:45 p.m.  Lunch, SUB Top Floor (Santa Ana A & B)

1:00 p.m. – 2:00 p.m.  Graduate School Fair Session #2* (Ballrooms, SUB Main Level) & Research Poster Presentation Session #2* (Atrium, SUB bottom floor)

2:15 p.m. – 3:00 p.m.  Student & Staff Workshops Session # 1, SUB Top Floor (See page #5 for workshop descriptions and locations)

3:00 p.m. – 3:30 p.m.  Snacks & Refreshments, SUB Top Floor

3:35 p.m. – 4:20 p.m.  Student & Staff Workshops Session # 2, SUB Top Floor (See page #5 for workshop descriptions and locations)

4:30 p.m. – 8:30 p.m.  Conference Excursion and Dinner (off campus)  Gather in groups and proceed to busses to leave for excursion.  See page #7 for instructions on this activity

DAY 2 AGENDA: FRIDAY, OCTOBER 4, 2019  UNM Campus

All events held in the Student Union Building (SUB)

8:15 a.m. – 9:35 a.m.  Breakfast, Greeting by Dr. James Holloway, Provost and Exec. VP for Academic Affairs, Keynote by Dr. Finnie Coleman, Assoc. Professor American Literary Studies, UNM Faculty Senate President, Ballroom C, SUB

9:45 a.m. – 12:10 p.m.  Morning Concurrent Oral Research Presentations: Sessions 1-7 SUB Top Floor Conference Rooms

12:15 p.m. –1:15 p.m.  Lunch, Ballroom C, SUB

1:25 p.m. – 3:50 p.m.  Afternoon Concurrent Oral Research Presentations: Sessions 8-12, SUB Top Floor Conference Rooms

4:00 p.m. – 4:30 p.m.  Closing Ceremony, Dr. Tim Gutierrez Associate Vice President for Student Services, Ballroom C, SUB
Graduate School Application Workshop Descriptions
Oct. 3, SUB Top Floor, Session 1 (2:15 -3:00pm), Session 2 (3:35 – 4:20pm)
See map on inside of back cover for locations

Making Yourself Competitive for Graduate School - Dr. David Shafer, Assistant Dean of the Graduate School at NC State University, will provide helpful insight on the graduate application process and tips on preparing a successful application: How do you choose a graduate program? What can you do NOW to prepare for graduate school? What criteria are used in making admissions decisions? How can you make an application more competitive? The workshop also will also touch on the different types of funding opportunities available to support graduate education and provide some tips on putting together a winning fellowship application. Session 1 & 2, Room: Acoma B

There’s an App for That: Applying for STEM Graduate Programs - Dr. Rachael Eaton, Biosciences Graduate Program Administrator, Rice University. The graduate school application process in STEM fields can be intensive and complicated. Attendees will receive insight and tips on this process including required materials and the interview. We will also cover key areas applicants may not realize they should consider including graduate funding, identifying research specialties and programs, choosing the right recommenders, and more. Session 1 & 2, Room: Fiesta A

Standing Out in the Competitive Application to Graduate School Process - MaryAnn Haller, Graduate Manager, College of Arts & Sciences Research & Graduate Programs, Lehigh University, AND Derek Maness, Director of Outreach and Recruitment, Graduate School office of Diversity, Univ. of Minnesota. How will your application stand out among the many others? What are the faculty members reviewing your application looking for in your Essay/Statement of Purpose and Letters of Recommendation? Let’s talk about ways to move your application up to the top of the applicant pool! Session 1 & 2, Room: Mirage/Thunderbird

How to Write an Effective Personal Statement for Biomedical Sciences Ph.D. Applications – Dr. Jon Gottesman, Director of the Office of Biomedical Graduate Research, Education & Training (BGREAT), University of Minnesota Medical School. Are you stressed about writing your personal statement on your graduate school application? If so, come and be reassured that it is not as hard as you think it is. This talk is specifically designed to inform you about how to create your statement when applying to biomedical sciences graduate programs. Important do's and don'ts are described and examples from real applications are shown and discussed. Bring your questions! Session 1 & 2, Room: Luminaria

On Writing Excellent Statements for Application to Graduate Study - Liz Daniele, Asst. Director for Graduate Diversity, Univ. of Rochester. This workshop identifies various types of graduate school statements (research, personal, statement of purpose), and outlines approaches to drafting various graduate school application statements. I present questions prompting applicants to discuss research experiences with maximum effectiveness. Touching upon how faculty expectations for statements vary by discipline, we zoom in on how to tailor a statement for departments of interest. This workshop will conclude with tips and techniques for reviewing, editing, and polishing your statements. Session 1, Room: Fiesta B

You’re In! Evaluating Offers of Admission and Making the Most of Your Campus Visit. Dr. Amanda Kastern, Manager of Finance and Administration, Princeton University Department of Politics. This workshop will provide guidance to prepare scholars who may find themselves in the enviable position of receiving multiple offers of admission. Attendees will learn about important factors—financial, academic, social, and beyond—to consider as they weigh their options. This will include a discussion of campus visits and their vital role in the decision-making process—whom to meet with, what questions to ask, and what good and bad signs to look for. Session 1 & 2, Room: Isleta
Graduate School Application Workshop Descriptions
Oct. 3, SUB Top Floor, Session 1 (2:15 -3:00pm), Session 2 (3:35 – 4:20pm)
See map on inside of back cover for locations

Strategies for a Successful Graduate School Interview - Fred A. Pereira, Ph.D., Associate Professor, Director, Graduate and Post-Baccalaureate Development; Mr. Robert Stephens, MNM, Associate Director, Graduate School Admissions, Baylor College of Medicine. This active learning workshop will discuss the strategies, tips, and the do’s and don’ts during admissions interviews. Scholars will learn the art of self-promoting, managing expectations, preparing for the interview experiences, gathering information about the school, program, and preparing questions for the interviewers, program directors, and administrators. Mastering these skills will assist Scholars to best prepare and represent themselves for a successful graduate school interview. Session 1 & 2, Room: Acoma A

Crafting the Statement of Purpose - Heidi Martinez, Assistant Director of Admissions, Claremont Graduate University. Graduate school applications almost universally require some sort of personal essay, but they can vary in their purpose, format, length, and scope. We’ll go over the difference between different types of essays, such as a Statement of Purpose versus a Personal Statement. We’ll discuss some dos and don’ts of crafting the essay, and some tips on how to have your essay stand out without being too risky. Session 2, Room: Fiesta B

Navigating the Graduate Admissions Process in STEM Fields. Emily Stevens, Assistant Director – Graduate Admissions, Rensselaer Polytechnic Institute. We will cover how to choose a graduate program, prepare a competitive application with strong personal statements and references, and will set a timeline for you to move through the process. As someone who did everything wrong during my application process, I will be sharing with you tips and tricks to set you apart from the competition! Session 1 & 2, Room: Spirit/Trailblazer

Applying to Highly Competitive Graduate Programs. Dr. Lindsey Weglarz, Assistant Director, Graduate Enrollment Initiatives, University of Chicago. Applying to a highly competitive graduate program can be extremely daunting. How do you stand out? What are admissions committees looking for? Should you contact faculty before applying? What do you do if a part of your profile isn’t quite as strong as you would like? We’ll discuss the ins and outs of highly competitive program applications, and all the tips and tricks to craft the best application. Session 1 & 2, Room: Lobo B

What to Expect When Accepting. Dr. Denzil A. Strete, Assistant Dean, Graduate Student Development and Diversity, Yale University. Nationally, 30% of students who begin a PhD program don’t complete. Deciding where to attend is just as important as deciding where to apply. This interactive presentation explores factors students should contemplate when considering graduate school offers and making a decision that optimizes the likelihood of completion. Session 1 & 2, Room: Lobo A

<table>
<thead>
<tr>
<th>Graduate School Recruiter Contact Information</th>
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<tbody>
<tr>
<td>Ashton Brown</td>
<td><a href="mailto:abrown50@twu.edu">abrown50@twu.edu</a></td>
</tr>
<tr>
<td>Liz Daniele</td>
<td><a href="mailto:ldaniele@rochester.edu">ldaniele@rochester.edu</a></td>
</tr>
<tr>
<td>Rachael Eaton</td>
<td><a href="mailto:rachael.eaton@rice.edu">rachael.eaton@rice.edu</a></td>
</tr>
<tr>
<td>Jon Gottesman</td>
<td><a href="mailto:bgreat@umn.edu">bgreat@umn.edu</a></td>
</tr>
<tr>
<td>MaryAnn Haller</td>
<td><a href="mailto:mh0h@lehigh.edu">mh0h@lehigh.edu</a></td>
</tr>
<tr>
<td>Amanda Kasem</td>
<td><a href="mailto:akasem@princeton.edu">akasem@princeton.edu</a></td>
</tr>
<tr>
<td>Ellyn Lykins</td>
<td><a href="mailto:exl364@case.edu">exl364@case.edu</a></td>
</tr>
<tr>
<td>Derek Maness</td>
<td><a href="mailto:dmaness@umn.edu">dmaness@umn.edu</a></td>
</tr>
<tr>
<td>Heidi Martinez</td>
<td><a href="mailto:we.ag8@cgual.edu">we.ag8@cgual.edu</a></td>
</tr>
<tr>
<td>Stephanie Parsons</td>
<td><a href="mailto:spars@fas.harvard.edu">spars@fas.harvard.edu</a></td>
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<tr>
<td>Fred Pereira</td>
<td><a href="mailto:fpereira@bcm.edu">fpereira@bcm.edu</a></td>
</tr>
<tr>
<td>David Shafer</td>
<td><a href="mailto:dma@memphis.edu">dma@memphis.edu</a></td>
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<tr>
<td>Robert Stephens</td>
<td><a href="mailto:robert.stephens@bcm.edu">robert.stephens@bcm.edu</a></td>
</tr>
<tr>
<td>Emily Stevens</td>
<td><a href="mailto:stevee@rpi.edu">stevee@rpi.edu</a></td>
</tr>
<tr>
<td>Denzil Strete</td>
<td><a href="mailto:dznzstrete@yale.edu">dznzstrete@yale.edu</a></td>
</tr>
<tr>
<td>Lindsey Weglarz</td>
<td><a href="mailto:lweglarz@uchicago.edu">lweglarz@uchicago.edu</a></td>
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****McNair Staff Workshop/Roundtable is in Santa Ana A & B, Session 1 (room is available for session 2 as well)
Instructions for Off-campus Excursion to Sandia Peak Aerial Tramway and dinner at El Pinto Restaurant

A) Workshops will end at 4:30 and we will leave the SUB on the southside to meet at the far East end of Johnson Field by 4:45pm.

B) There will be five motor coaches with color coded signage (pink, blue, green, orange, yellow) in the front window, and there will be guides stationed at each coach with matching signage. On your nametag, you will have a colored dot.*

C) Please board the motor coach that corresponds to your sticker color and stay with that coach for the whole evening.

D) Three of the coaches will depart first to the Sandia Peak Aerial Tramway in the foothills of the Sandia Mountains, and the other two coaches will head to dinner first at El Pinto restaurant in the North Valley.

E) Your guides will inform you of departure times either from the Tram to El Pinto or from El Pinto to the Tram.

*If you do not have a colored dot on your nametag, you either did not RSVP for this excursion or you RSVP’d that you did not want to attend. In either case, you may not board a bus to attend this off-campus event.
Thank You for choosing our conference!
(We have participants from all the institutions listed below)

Baylor University
Beloit College
Boise State University
Case Western Reserve University*
Castleton University
Claremont Graduate University*
Concord University
Emporia State University
Florida International University
Hamline University
Harding University
Harvard University*
Idaho State University
Johnson C. Smith University
Kean University
Lee University
Lehigh University*
Louisiana State University
Macalester College
Marquette University
Montana State University
North Carolina State University*
Oklahoma State University
Our Lady of the Lake University
Princeton University*
Rensselaer Polytechnic Institute*
Rice University
San Jose State University
San Jose State University
Southern Methodist University (SMU)
St. Edward’s University
St. Lawrence University
Suffolk University
Talladega College
Texas Woman’s University*
UMass Boston
University of Alabama at Birmingham
University of Central Missouri
University of Central Oklahoma
University of Chicago*
University of Colorado Denver
University of Minnesota
University of New Mexico
University of North Texas
University of North Texas at Dallas
University of Northern Colorado
University of Oregon
University of Rochester*
University of San Diego
University of Texas at San Antonio
University of Wisconsin - Whitewater
University of Wisconsin-La Crosse
University of Wyoming
Washington State University
Wichita State University
Xavier University of Louisiana
Yale University*

*Graduate School Recruiter Participant
Thank You to all our volunteers from the UNM Community!

We want to recognize our volunteers and thank them for taking time out of their busy schedules to make this event a success! We have volunteer evaluators and moderators (for presentations), and general assistance as well. Our volunteers include 52 faculty, 29 graduate students, 19 staff members, 7 McNair Alumni, 3 grad school recruiters and 19 undergraduates.

(as of 9/25/19)

Liz Daniele
Lee Ratzlaff
Mathiu Perez Rodriguez
Cindy Mason
Gayle Garcia
Leah Buechley
Nick Carroll
Florenia Monge
Heidi Martinez
Shannon Saavedra
Dirk Duran-Gibson
David Weiss
Amalia Parra
Brandon Schmandt
Stephonae Nelson
Jake Organ
Lori Townsend
Bryn McCabe-Kelly
Eva Rodriguez-Gonzalez
Erika Monahan
Adrienne Warner
Marygold Walsh-Dilley
Karlyn Edwards
Ben Gerstner
Amaris Swann
Alexandra Davis
Maria Elena Salazar
Amy Jankowski
Greg Lanier
Sunnie Clahchischiligi
Amy Jackson
Susanne Anderson-Riedel
Michael Graves
Jessie Bonafede
Deborah Cohen
Ben Brandley
Alonzo Maestas
Emma Mincks
Susan Atlas
Deyanira Nunez
Vicki Vanbrocklin
Laura Belmonte
Diane Marshall
Dave Dixon

Eric Leslie
Eli Wilson
Laurie Lowrance
Nina Cooper
Manuel Montoya
Eva Stricker
Rich Brody
Pauline Alvarez
Damian Wilson
Dawn Blue Sky-Hill
Michael Hoodless
William Gannon
Cat Hubka
Lawrence Bustos
LeAnne Salazar Montoya
Carrie Mulderink
Jordan James
Rachael Reynolds
Andrew Rowland
Carlos Nye
Anna Nogar
Amanda Martinez
Dawn Nordquist
Jennifer Tubbs
Cleophas Muneri
Tamara Martinez
Marjori Krebs
Jacob Moya
Nahir Otano Gracia
Xi Gong
Gloria Valderrama
Marcial Martinez
Beth Elkin
Roli Varma
Flavio de Castro-Magalhaes
Emily Ahrrend
Samantha Wolf
Solana Granados
Tim VanZeben
Elizabeth Medina
Ashley Tafoya

Sarah Maldonado
Jesus Zavala
Nita Kelly
Joshua Maxwell
Kelly Neuschwanger
Natalie Correa
Stephanie Parsons
Celestina Torres
Jacquelyn Tolth
Juan J. Faria-Briceno
Judit Huerta
Brittany Huddleston
Stephanie Olivas
Gage Lamborn
Katrina Gallegos
Venessa Viramontes
Kiyoko Simmons
Brigid Ovitt
Kelsey Bourbeau
Abdulaziz Masoud
Ilia Rodriguez
Boleslo Romero
Michael Lechuga
Mia Livaudais
Jin Zhang
Miguel Lopez-Lozano
Jonathan Houck
Robert Otto Valdez
Kimran Buckholz
Sally Seidel
Ashley Martin-Cuellar
Richard Wood
Adam Reynolds
Ben Clark
Kayla Mitchell
Kamela Rasmussen
Aaisha Abdullahi, Hamline University, Major: Exercise Science and Psychology, Session #2
Title: Are We Equal? The Unique Challenges of Extracurricular Activities for Muslim Youth in the U.S.

Syed Ali, Concord University, Major: Applied Science, Session #2
Title: The effects of CHD8 mutation in Zebrafish GI dysmotility and peristalsis rate

Mariel Arias-Guerrero, Harding University, Major: Accounting, Session #2
Title: Predecessors to Progress: A Cultural Exposition of Ancient Aztec Influence on Modern-Day Mexico City.

Tyler-Joseph Ballard, Castleton University, Major: Political Science, Session #2
Title: Poll Dancing: An Analysis of the Bipartisan Tendencies of Vermont’s Electoral Bellwethers

Tanyka Begaye, Boise State University, Major: Elementary Education with endorsements in Mathematics and Literature, Session #2
Title: The Relationship Between Cultural Involvement and Education Performance for Native American Students

Mya Bolds, Xavier University of Louisiana, Major: Computer Science, Session #1
Title: Multi-Agent Cooperation and Navigation Through Infrared Localization

Mkala Bowen, Xavier University of Louisiana, Major: Speech Pathology, Session #2
Title: Role of Length and Complexity in the Sentence Comprehension of Children with Developmental Language Disorder

Calvin Brooks, Castleton University, Major: Biology, Session #2
Title: Increases In Biomarkers of Inflammation Following Neonatal Cardiac Surgery Associated With Adverse Clinical Outcomes

María S. Cobo Nieto, Marquette University, Major: Speech-Language Pathology and Audiology, Session #2
Title: Hispanic Students in Speech-Language Pathology: Where Are You?

Edel Contreras, University of Wisconsin-Whitewater, Major: Biology with an emphasis in Pre-med/Pre-Dentistry, Session #1
Title: Using Activin to Induce Mesoderm in Embryonic Tissue

Leonard Covarrubias, Washington State University, Major: Psychology, Session #1
Title: Perceptions of Adulthood: Differences Amongst Youth in Alternative and Public High Schools

Kayla Cox, Concord University, Major: Psychology, Session #2
Title: Nicotine Conditioned Place Preference in Female Adolescent Rats

Senea Diaz, Louisiana State University, Major: Communication Disorders, Session #1
Title: The prevalence of ADHD traits in adults who stutter
Poster Presentation Schedule Listed Alphabetically by Last Name
Session #1 (10:30-11:50am) - Session #2 (1:15-2:30pm)
Location: SUB Atrium (bottom floor)
Full Abstracts start on page # 27

Jhenny Dorival, Lee University, Major: Psychology, Session #1
Title: The Psychosocial Effects of Social Media

Abigail Ferrara, Castleton University, Major: Health Sciences and Exercise Science, Session #2
Title: Facilitators and Barriers of Rehabilitative Exercise

Elizabeth Ferrer, Florida International University, Major: Biological Sciences, Session #2
Title: Effect of Relaxin Signaling on ERBB2-Induced Breast Cancer

MacKenzie Freeman, University of Wisconsin-Whitewater, Major: Psychology/Social Work, Session #2
Title: Intersectionality of At-Risk Behaviors in Youth

Alejandro Gallego, Florida International University, Major: Psychology, Session #1
Title: Physical Activity in Health-Related Quality of Life in Advance Prostate Cancer

Alex Gann, Alex Gann, Major: Biochemistry (pre-med), Session #2
Title: Relationship Between Vestibular Dysfunction and Fatigue in Persons with Multiple Sclerosis

Raquel Garcia, University of Wisconsin La-Crosse, Major: Psychology, Session #2
Title: A cage is not a home: Las familias merecen estar unidas

Lismar Garcia, Suffolk University, Major: Government, Session #2
Title: The Important Role of Parks and Playgrounds in Decreasing Juvenile Delinquency

Ashley Garner, Lee University, Major: Music Education and Performance, Session #1
Title: A literature review on the benefits of music education: Beyond the scope of academics

Carlos Guillen, University of Colorado Denver, Major: Psychology, Session #1
Title: Inferiority: A Mental Illness?

Jeremy Gusset, Jeremy Gusset, Major: Architecture, Session #2
Title: Sculpture Cemetery

Mahlet Haileyesus, University of Colorado Denver, Major: Public Health, Session #2
Title: Deforestation and Global Warming

Hayley Haynes, Concord University, Major: Psychology, Session #1
Title: The Halo Effect and Horn Effects: Making Judgements Without Awareness

Gabriella Hess, Harding University, Major: Child Life, Session #1
Title: Work Hard Play Hard: Child Life Specialists and Use of Play in the Hospital Setting

Olson Humphrey, Castleton University, Major: Exercise Science, Session #2
Title: Knowledge, behavior and food choice in athletes and non-athletes: A survey of the nutrition of college students at Castleton University
<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>Major</th>
<th>Session</th>
<th>Title</th>
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<tr>
<td>Pauline Hunter</td>
<td>Talladega College</td>
<td>Biology</td>
<td>Session #1</td>
<td>Detection of Intracellular Uptake of Nanomaterials by Flow Cytometry</td>
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<td>Syed Hussain</td>
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<td>Characterization of Wheelchair Propulsion Amongst Adaptive Sports Athletes Using a Markerless Based Motion Capture System</td>
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<td>Fatima Irfan</td>
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<td>Continued taxonomic Investigations on cestode species of the Anthocephalidae</td>
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<td>Jaimy Jabon</td>
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<td>The trans-generational quantification of Wolbachia and the microbiome within the mosquito Culex quinquefasciatus in Two Temperatures</td>
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<td>Michael Jenkins</td>
<td>Idaho State University</td>
<td>Chemistry</td>
<td>Session #1</td>
<td>Single-Source vs Multi-Source Approaches to Chalcopyrite Nanomaterials</td>
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<td>Mariama Kamara</td>
<td>Suffolk University</td>
<td>Marketing</td>
<td>Session #2</td>
<td>Race, Body Shaming, and the Pursuit of the Ideal in the Fashion Industry</td>
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<td>Faith Kidd</td>
<td>Concord University</td>
<td>Pre-Professional Chemistry</td>
<td>Session #1</td>
<td>Bioactivity guided fractionation of Polygonum cuspidatum</td>
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<td>Susan Kim</td>
<td>University of Colorado Denver</td>
<td>Psychology</td>
<td>Session #1</td>
<td>Mode of Delivery, Breastfeeding Patterns, and Postpartum Depression</td>
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<tr>
<td>Erney Lorquet</td>
<td>Florida International University</td>
<td>Biochemistry</td>
<td>Session #2</td>
<td>The Effect of RNA polymerase T7 and antimalarial drug DB 75 on the conformation of DNA examined by Restriction Enzyme Activity</td>
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<tr>
<td>Melody Mann</td>
<td>San Jose State University</td>
<td>BA Child &amp; Adolescent Development Teacher Preparation / Minor Early Childhood Special Education</td>
<td>Session #2</td>
<td>Teacher Response to Child Noncompliance in Early Care Settings</td>
</tr>
<tr>
<td>Courtney Mann</td>
<td>University of Central Missouri</td>
<td>Agricultural Science (emphasis in Animal Science)</td>
<td>Session #1</td>
<td>Fecal Parasite Identification Via Microscopy in Alaskan Wood Bison, Bison bison athabasca, Following Reintroduction</td>
</tr>
<tr>
<td>Esteban Marte</td>
<td>Suffolk University</td>
<td>Biology</td>
<td>Session #2</td>
<td>Regulation of RpoS through RbsD</td>
</tr>
<tr>
<td>Danilo Martinez</td>
<td>Suffolk University</td>
<td>Marketing</td>
<td>Session #1</td>
<td>Social Media Marketing: What can MAKE or BREAK your small business?</td>
</tr>
<tr>
<td>Tinina McCourt</td>
<td>Concord University</td>
<td>Sociology</td>
<td>Session #1</td>
<td>Online Dating in the LGBT Community: an Analysis</td>
</tr>
</tbody>
</table>
**Kayla Medina**, University of Colorado Denver, Major: Biology, Session #1  
Title: *Understanding the Association Among Environment, Microbiome, and Golden Retriever Health*

**Heather Mellis**, Lee University, Major: Psychology, Session #1  
Title: *Hashtag Thriving: Religiosity in Congruence to Flourishing*

**Aracely Mendoza**, Washington State University, Major: Anthropology, Session #2  
Title: *What does it mean to be Latinx in the contemporary U.S.?

**Zarnez Montgomery**, Harding University, Major: Social Work, Session #2  
Title: *Here’s the Tea: The Challenges Faced by African American Female Faculty in Predominantly White Christian Institutions*

**Kilinoelani Montgomery**, University of Colorado, Denver, Major: Chemistry, Session #1  
Title: *Computing host guest free binding energy with a new combined QM-MM Mining minima method*

**Sana Rahim**, San Jose State University, Major: Sociology, Session #2  
Title: *San Jose’s Tiny Home Movement: A Study of Homelessness in Silicon Valley*

**Allysia Rainey**, University of Oregon, Major: Psychology, Session #2  
Title: *The Association between Socioeconomic Status and Depression in Adolescent Females*

**Meghan Ramirez**, University of Oregon, Major: Psychology, Session #1  
Title: *The Effects of Naturally Occurring Sounds on the Stress Response*

**Isabel Rangel Hernandez**, San Jose State University, Major: Child and Adolescent Development, Session #2  
Title: *CSU Resources for Undocumented Students Post-DACA Rescindment*

**Eden Riggs**, Concord University, Major: Psychology, Session #1  
Title: *The Relationship between Depression, Stress and Substance Use in College Students*

**Natalie Robertson**, Suffolk University, Major: Biology, Session #1  
Title: *Rate of Escape of Group A Streptococcus from Within Host Cells*

**Louis Romska**, Harding University, Major: Social Work, Session #2  
Title: *The Old and The Restless: A Comparative Analysis of Traditional and Greenhouse Model Nursing Homes*

**Brandon Selz**, University of Northern Colorado, Major: Biology, Session #2  
Title: *Movement of Choroid Fissure Cells: An in vivo analysis investigating if these cells have a pre-determined differentiation pathway prior to fusion*

**Darby Simon**, University of Central Missouri, Major: Psychology, Session #2  
Title: *Effects of Anticholinergic Medications on Alzheimer’s Disease Pathology using C. elegans*
Poster Presentation Schedule Listed Alphabetically by Last Name

Session #1 (10:30-11:50am) - Session #2 (1:15-2:30pm)
Location: SUB Atrium (bottom floor)
Full Abstracts start on page # 27

Mary Siriboe, Suffolk University, Major: Biology, Session #2
Title: *Computational Investigation of DMSD Production from VMS and *OH in the ISS Atmosphere*

Caitlin Smith, Castleton University, Major: Forensic Psychology & Criminal Justice, Session #1
Title: *Treatment Initiation and Engagement: Recidivism Rates of Offenders Under Community Correctional Supervision*

Siddhakshi Solanki, Southern Methodist University, Major: Biology, French, Session #1
Title: *Atypically Substituted Carbapenems with Improved Activity Against OXA-23 producing Acinetobacter baumannii*

Maddie Stevens, Oklahoma State University, Major: Natural Resource and Ecology Management, Session #1
Title: *Quantifying the shifted baseline in breeding bird communities for Native American tribes relocated to Oklahoma*

Phuoc Tran, San Jose State University, Major: Chemistry: Concentration in Biochemistry, Session #1
Title: *The Effect of Solvent on the Enantiomeric Recognition of Amino Acids*

Sky Triece, Oklahoma State University, Major: Psychology, Session #1
Title: *Early-Life Family Instability as a Risk for Depression in College: The Role of Optimism as a Protective Factor*

Isaac Valdez, University of New Mexico, Major: Mechanical Engineering, Session #2
Title: *Relating Build Parameters, Density, and Structural Properties in Additively Manufactured 316L Stainless Steel*

Daniela Villalobos, University of Colorado Denver, Major: Mathematics, Session #2
Title: *New ways of teaching y=mx+b, Youth education =Methods(Xplanation) + Behavior*

Amber Wagster, Harding University, Major: Communication Sciences and Disorders, Session #1
Title: *Hear Me Out: An Evaluation of the Services Provided to Parents Prior to a Diagnosis of Hearing Loss*

Liana Weisse, Castleton University, Major: Elementary Education, Session #2
Title: *The Story of Poverty in Rural Education: Educators’ Perspectives on the Correlation Between Free and Reduced Lunch Eligibility and Standardized Test Scores*

Kaitlin Wells, Castleton University, Major: Elementary Education, Session #2
Title: *The Ways in Which the Nature of Science is Implemented in Teacher Made Lesson Plans in the Fifth Grade Classroom*

Calah Williams, University of Wisconsin-Whitewater, Major: Psychology, Session #1
Title: *Caregiver Burden: The Effects of Having a Family Member with a Psychiatric Disorder*
Zoe Andrews, University of Central Oklahoma, Major: Biology  
Session # 1, Room: Luminaria  
Title: *Keratinocytes and Pre-cancerous Keratinocytes Migration in a 3D Cell Culture*

Kevin Bueling, Montana State University - Bozeman, Major: Human Development and Family Science  
Session # 1, Room: Acoma A  
Title: *Technology and it’s perceived influence on the health behaviors of family units*

Elijah Cox, Lee University, Major: Sociology  
Session # 1, Room: Acoma B  
Title: *Ayuda en el Camino del la Muerte*

Rebecca Dulaney, University of Wyoming, Major: Music Education  
Session # 1, Room: Fiesta A  
Title: *Chance Sounds: Are They Music?*

Eunice Partida-Castillo, Beloit College, Major: History and Spanish  
Session # 1, Room: Fiesta B  
Title: *Understanding Latinx Capital Through the Eyes of Fourth Grade Educators*

Skylar Ratcliffe, St. Lawrence University, Major: Mathematics & Chemistry  
Session # 1, Room: Isleta  
Title: *An Expository Look into the Banach-Tarski Paradox*

Kylie Talamante, University of New Mexico, Major: Psychology  
Session # 1, Room: Lobo A  
Title: *Trauma by Psychopathy: The Connection to Juvenile Offending*

Christie Wildcat, University of Wyoming, Major: Native American and Indigenous Studies, Political Science, Anthropology  
Session # 1, Room: Lobo B  
Title: *A Case Study of a Culturally Rich Environment for Native Youth, Their Life Choices, and Opportunities*
**Oral Presentation Schedule: Session #2, 10:10 to 10:30 a.m.**
Friday, October 4, 2019, SUB Top Floor
Full abstracts start on page # 27 - Room map on page 79

**Milena Cornejo**, University of Minnesota, Major: Psychology
Session # 2, Room: Acoma B
Title: *The Protective Role of Hispanic Ethnicity on the Relationship Between Stress and Executive Functioning in Preschool-Aged Children*

**Sarah Dallo**, University of New Mexico, Major: Biochemistry
Session # 2, Room: Luminaria
Title: *Using jMRUI Software to Quantify and Analyze Brain Metabolites in Post-Mortem 1H Magnetic Resonance Spectroscopy in Cases of Acute Drug Intoxication*

**Isaiah De La Torre**, University of Wyoming, Major: Physics
Session # 2, Room: Isleta
Title: *Preparation and Field Effect Properties of Two-Dimensional (2D) Tellurium*

**Aryssa Harris**, Beloit College, Major: Sociology and Political Science
Session # 2, Room: Lobo B
Title: *Mass Incarceration: Understanding the Disparate Impact on Black Males*

**K’neadee Jackson**, Johnson C. Smith University, Major: Psychology
Session # 2, Room: Lobo A
Title: *The Working Student: The Effects of Employment in Academic Performance among Undergraduates*

**Baylee McKinney**, Concord University, Major: Psychology
Session # 2, Room: Acoma A
Title: *Group sizes and its impact on decision making and problem solving*

**Savanah Ontiveros**, Montana State University - Bozeman, Major: Microbiology with focus in Med Lab Science
Session # 2, Room: Fiesta B
Title: *The Roles of the speB Locus of Group A Streptococcus in Throat Colonization, Neutrophil Response, and Infection of Cultured Human Epithelial Cells*

**Brittney Perez**, Lee University, Major: English Education
Session # 2, Room: Fiesta A
Title: *Why Johnny Doesn’t Write*
Oral Presentation Schedule:  Session #3, 10:35 to 10:55 a.m.
Friday, October 4, 2019, SUB Top Floor
Full abstracts start on page # 27 - Room map on page 79

Osmar Aguirre, University of New Mexico, Major: Mechanical Engineering
Session # 3, Room: Isleta
Title: The Entropy Paradox in the Chapman-Jouguet Theory of Detonation

Alanis Burton, Lee University, Major: Health Science
Session # 3, Room: Fiesta B
Title: Empty or Full: A Survey of McMinn County’s Food Pantries and Their Abilities to Meet Nutritional Standards

Kaylee Delgado, St. Edward’s University, Major: Biology
Session # 3, Room: Luminaria
Title: Toxicity of Chlamydomonas Chloroplast-expressed Cry11A Protein on Caenorhabditis Elegans

Katherine Greenwell, University of Wyoming, Major: Political Science
Session # 3, Room: Acoma B
Title: Examining Food Insecurity and the Need for Food Sharing Cabinets at the University of Wyoming

Anna Heinz, University of Minnesota, Major: Child Psychology
Session # 3, Room: Lobo B
Title: Teacher Relationships in Children at Risk Due to Homelessness

Esmeralda Lezama Ruiz, Marquette University, Major: Psychology
Session # 3, Room: Acoma A
Title: Gendered Racial Microaggressions & Coping in Black Women

Kylie Sommer, Lee University, Major: English Writing
Session # 3, Room: Fiesta A
Title: Deaf Biblical Literacy and Habits

Edward Wiggins, Xavier University of Louisiana, Major: History
Session # 3, Room: Lobo A
Title: Beyond Research and Innovation: Exploring an Equity-Based Rationale for Engineering and Computing Students
Eric Amador, Boise State University, Major: Creative Writing
Session # 4, Room: Fiesta A
Title: *Tortillas de Harina and Other Stories*

Torrence Brown-Smith, University of Northern Colorado, Major: Sociology
Session # 4, Room: Lobo A
Title: *It gets tiring. It affects different parts of your life: Examining Racial Battle Fatigue among Black College Students at a Historically White University*

Austin Cardenas, University of Central Oklahoma, Major: Sociology
Session # 4, Room: Acoma B
Title: *College Students and Agents of Socialization*

Theresa Garcia, University of New Mexico, Major: Psychology
Session # 4, Room: Acoma A
Title: *Socio-political Climate: Justice Involved Youth and Police Officer Perspectives*

Brenda Martinez-Flores, Beloit College, Major: Biochemistry
Session # 4, Room: Luminaria
Title: *Solving the Antibiotic Crisis with Soil*

Yoojyim Moua, University of Minnesota - Twin Cities, Major: Kinesiology
Session # 4, Room: Fiesta B
Title: *Measures of Physical Activity Among Children*

Mikayla Stone, Harding University, Major: Psychology
Session # 4, Room: Lobo B
Title: *The Relationship among Social Media, Interpersonal Relationships, and Self-Conscious Emotions*

Salamong Xiong, University of Minnesota - Twin Cities, Major: Physics, Philosophy
Session # 4, Room: Isleta
Title: *SuperCDMS: Energy Calibration of a Cryogenic Ge HV Particle Detector*
Oral Presentation Schedule:  Session #5, 11:25 to 11:45 a.m.
Friday, October 4, 2019, SUB Top Floor
Full abstracts start on page # 27 - Room map on page 79

Angela Davies, University of New Mexico, Major: Geography
Session # 5, Room: Acoma B
Title: Uncertainties in Spatial Access: A Comparison of Street Networks

Emily Davis, Concord University, Major: Psychology
Session # 5, Room: Fiesta B
Title: Effects of Chewing Gum on Cognitive Performance

Jonathan Delgado, UMass - Boston, Major: Physics and Math
Session # 5, Room: Isleta
Title: Non-Asymptotic Entropy Rates as Thermodynamic Observables

Allison Doney, University of New Mexico, Major: History
Session # 5, Room: Fiesta A
Title: Climate in Pre- Revolutionary Countries: Examining the Roles of Absolutism, State Ineffectiveness, and Economic Crisis in the French Revolution of 1789

Jordan Fuselier, University of Northern Colorado, Major: Criminology/Criminal Justice
Session # 5, Room: Acoma A
Title: Initiating a New Perspective: The Prevalence, Perceptions, & Attitudes Towards Hazing Across Student Organizations on a College Campus

Alexis Harris, University of Central Oklahoma, Major: Photographic Arts
Session # 5, Room: Lobo B
Title: The Silent Stigma

Alexis Nealy, Talladega College, Major: Biology
Session # 5, Room: Luminaria
Title: Generating RNA Interference Vectors for Use in Trypanosoma brucei

Kimberly Rivera, University of New Mexico, Major: Math & Criminology
Session # 5, Room: Lobo A
Title: Sentencing Outcomes Between White-Collar Defendants and Those Convicted of Street Crimes
Dax Galloway, University of Wyoming, Major: Astronomy and Astrophysics
Session # 6, Room: Isleta
Title: *Installation and Trial of Light Diffusers at the Wyoming Infrared Observatory for Exoplanet Characterization*

Nora Godoy-Gonzalez, Marquette University, Major: Public Relations and Spanish for the Business Professions
Session # 6, Room: Fiesta A
Title: *Disculpas: A comparative study of apologies in first-generation Mexican American heritage Spanish speakers and Mexican Spanish native speakers*

Zamzam Hufane, Washington State University, Major: Psychology
Session # 6, Room: Lobo B
Title: “Swiping to Relieve Stress? Understanding Tinder Use Among Undergraduates”

Jaedah Lewis, University of Central Oklahoma, Major: Psychology
Session # 6, Room: Lobo A
Title: *Unexpected Expectations for New Parents*

Aria Springfield, Johnson C. Smith University, Major: History
Session # 6, Room: Acoma A
Title: *The Lost Cause Narrative and its Perpetuation through Charleston, South Carolina’s Historical Tourism*

Yosan Tsegai, University of Minnesota, Twin Cities, Major: Kinesiology
Session # 6, Room: Fiesta B
Title: *Exploring Measures of Balance and Cardiovascular Health in a Dance Style Leisure Program for Adults with Down Syndrome and Related Disorders*

Alexis Velazquez, University of New Mexico, Major: Music
Session # 6, Room: Acoma B
Title: *The First to Find a Voice*
Samantha Acosta, Baylor University, Major: Psychology  
Session #7, Room: Acoma A  
Title: Relations Between Parent-Child Sexual Communication and Risky Behaviors Among Justice-Involved Youth

Guadalupe Aguilar, St. Edward’s University, Major: Forensic Sciences  
Session #7, Room: Luminaria  
Title: The Development of a Novel Dual Chemical for the Development of Blood Utilizing Titanium Dioxide and a Fluorescent-based Chemical

Ilona Alisudjana, University of New Mexico, Major: Psychology & Communication  
Session #7, Room: Lobo A  
Title: Assessing Opioid Use Disorder (OUD) among Native and Non-Native Communities

Ana Astoquilca, Wichita State University, Major: Communication Sciences and Disorders  
Session #7, Room: Fiesta B  
Title: Stickwriting Approach for Children with Autism and Social Communication Disorders

Kathy Garcia, Our Lady of the Lake University, Major: Accounting  
Session #7, Room: Acoma B  
Title: How Internalized Racism Impacts College Enrollment in Underserved Neighborhoods of San Antonio

Savannah Melher, University of Central Oklahoma, Major: Strategic Communications  
Session #7, Room: Fiesta A  
Title: Reporting and Race: The Criminalization of Black America

Muna Osman, University of Minnesota, Major: Psychology  
Session #7, Room: Lobo B  
Title: Educating Somali Parents on Healthy Child Development through m-Health Communication

Moises Ponce, Lee University, Major: Mathematics  
Session #7, Room: Isleta  
Title: Quest for the Mathematically Ideal Font Using Principal Component Analysis
Yaren Euceda, University of Minnesota - TC, Major: Mathematics and Computer Engineering
Session # 8, Room: Isleta
Title: Counting Metaplectic Ice and Modified Alternating Sign Matrices

Wendy Gallarza, Major: Psychology
Session # 8, Room: Lobo A
Title: Discrimination Experiences and Social Behaviors Among Young Adults

Alrick Johnson, Emporia State University, Major: Computer Science
Session # 8, Room: Luminaria
Title: Increasing Black Males' Success and Persistence in Computer Science

Carla Martinez Perez, St. Lawrence University, Major: Neuroscience
Session # 8, Room: Acoma B
Title: Decreasing Impulsivity in Rats: Effects of Acute Delay Exposure

Santiago Pacheco, University of New Mexico, Major: Psychology
Session # 8, Room: Lobo B
Title: Language and Categorization Effects on Cognitive Processing in Hispanic and Non-Hispanic White College Students

Esmeralda Paez, Wichita State University, Major: Communication Sciences and Disorders
Session # 8, Room: Fiesta B
Title: Caregivers’ Perceptions of an Interprofessional Structured Learning Program (iSLP)

Kim Rogge-Obando, University of New Mexico, Major: Chemical Engineering
Session # 8, Room: Acoma A
Title: Investigation of Corticotrophin Releasing Factor in the Subiculum of the Tgf344 Rodent Model of Alzheimer’s Disease

Danielle Sanchez, Baylor University, Major: History
Session # 8, Room: Fiesta A
Title: Selma: Sisters and Saints
Emoni Lewis, Johnson C Smith University, Major: Biology
Session # 9, Room: Isleta
Title: *Investigating Concentration Differences Through In Situ Polymerization of Polypyrrole with Cellulose Nanomaterials*

Veronica Mixon, University of Alabama at Birmingham, Major: Psychology and African American Studies
Session # 9, Room: Acoma A
Title: *System Level Policy to Promote Physical Activity Discussion with Black Patients*

Alexandra Quinn, University of Wyoming, Major: Psychology
Session # 9, Room: Lobo A
Title: *Evaluation of the Degree to which Emotional Intelligence Predicts Bystander Behaviors*

Jorge Rubio, University of Northern Colorado, Major: Philosophy
Session # 9, Room: Fiesta A
Title: *Convention and the Normative Structure*

Ivonne Salas, University of San Diego, Major: Communication Studies
Session # 9, Room: Lobo B
Title: *Chicanx Episodic Television and Representation*

Melina Telles Tlazola, San Jose State University, Major: Sociology
Session # 9, Room: Acoma B
Title: *Bay Area Gentrification And Its Impacts on the Working Class Community*

Julianna Tibbetts, University of New Mexico, Major: Speech & Hearing Sciences
Session # 9, Room: Fiesta B
Title: *A Survey of Practice Patterns in New Mexico of the Evaluation of Swallowing Disorders*

Kellyn Tippins, Beloit College, Major: Biology
Session # 9, Room: Luminaria
Title: *Lactic Acid Bacteria: Understanding Microbial Succession in Cheddar Cheese*
Denicia Aragon, University of New Mexico, Major: Psychology & Political Science  
Session # 10, Room: Lobo A  
Title: How Transcranial Direct Current Stimulation (tDCS) Effects Vigilance

Samantha Gardow, University of Minnesota - Twin Cities, Major: Psychology, minors in Developmental Psychology and Neuroscience  
Session # 10, Room: Acoma A  
Title: Maternal Macronutrients Across Pregnancy: Impacts on Fetal Growth Trajectories

Michael Hillyer, University of New Mexico, Major: Anthropology & Linguistics  
Session # 10, Room: Acoma B  
Title: An Assessment of Yucatec Maya Language Vitality in the 21st century

Shannon Linch, University of Wyoming, Major: Chemical Engineering  
Session # 10, Room: Isleta  
Title: Optimization of GAVPO for Zebrafish Study

Hannah Oxford, Beloit College, Major: Environmental Justice and Citizenship  
Session # 10, Room: Fiesta B  
Title: This Is Every Day: The Daily Life of the Boundary Waters’ Mining Debate

Liad Sherer, University of Northern Colorado, Major: History  
Session # 10, Room: Fiesta A  
Title: The Quest for Restorative Justice: American Law and Native Voices 1831-1934

Madison Suttman, Beloit College, Major: Ecology, evolution, and behavioral biology  
Session # 10, Room: Luminaria  
Title: Examining the role of the wildlife trade in coral populations

Francisco Tejeda, Marquette University, Major: Cognitive Science  
Session # 10, Room: Lobo B  
Title: The Influence of Social Media Posts about Racism on Perceptions of Black Job Applicants and their Job-Related Outcomes
Oral Presentation Schedule: Session #11, 3:05 to 3:25 p.m.
Friday, October 4, 2019, SUB Top Floor
Full abstracts start on page # 27 - Room map on page 79

Myrella Gonzalez, University of New Mexico, Major: Population Health
Session # 11, Room: Fiesta B
Title: Healing Trauma for Migrant Populations: Traditional Knowledge Interventions

Lemlem Jeldo, University of Minnesota, Major: Family Social Science
Session # 11, Room: Acoma A
Title: Parent and Adolescent Perspectives on Confidential Adolescent Sexual and Reproductive Health Services

Britney King, University of North Texas at Dallas, Major: Biology
Session # 11, Room: Luminaria
Title: In vitro effects of sodium nitrate on the human gut microbiota

Neema Moore, University of North Texas at Dallas, Major: Psychology
Session # 11, Room: Acoma B
Title: A Blind Eye to Black Women: A Quantitative Analysis of Homelessness Among African American Women

Alexander Morales, University of Colorado Denver, Major: Psychology
Session # 11, Room: Lobo A
Title: The Relationship between Eye Movements and Working Memory

Brooklyne Thompson, Idaho State University, Major: Chemistry
Session # 11, Room: Isleta
Title: Precise Surface Composition Control of Complex Catalytic Materials

Catalina Tueros, Beloit College, Major: Sociology
Session # 11, Room: Lobo B
Title: Competing Frameworks: The Impact of Media Framing on the Immigration Discourse

Jordan Vick, University of New Mexico, Major: Philosophy
Session # 11, Room: Fiesta A
Title: Phenomenology of Suchness
Derrick Charley, University of New Mexico, Major: Mechanical Engineering
Session # 12, Room: Isleta
Title: The Reduction of Parasitic Drag on a Rotorcraft Using a Bio-Inspired Rotor Hub

Kyriessa Lane, University of Wyoming, Major: Musical Theatre
Session # 12, Room: Fiesta B
Title: The Madness in the Method: Mental Health of Students and Faculty in Academic Theatre Programs

Ianna Oatis, University of Minnesota Twin Cities, Major: Global Studies
Session # 12, Room: Fiesta A
Title: Understanding the Higher Education Movement: Making Connections between Race, Universities, and Historical Injustices

Mariah Simplicio, University of New Mexico, Major: Sociology
Session # 12, Room: Lobo A
Title: Deaths of Despair among American Indians and non-Hispanic Whites: The Role of Poverty and Inequality

Katie Tinch, Southern Methodist University, Major: Anthropology
Session # 12, Room: Acoma B
Title: It’s Not Easy Dying Green: Ecodisposition, Waste, and Environment

Kedriuna Townsend, University of Central Oklahoma, Major: Psychology
Session # 12, Room: Acoma A
Title: The Effect of Motor Vehicle Accidents and Duration of Mental Health Disruption

Matthew Vance, Concord University, Major: Psychology
Session # 12, Room: Lobo B
Title: The Effects of Physiological Stress on Memory
Presentation Abstracts
Includes Oral and Poster Presentations

These abstracts were published unedited to reflect the author’s original submission. The abstracts appear in alphabetical order based on the presenter’s last name.
Aaisha Abdullahi, Hamline University
Mentor(s): Dr. Douglas Hartmann, Professor, Department of Sociology
Poster Presentation
Title: Are We Equal? The Unique Challenges of Extracurricular Activities for Muslim Youth in the U.S.

Extracurricular activities are important for the development of children’s soft skills and socialization. As out-of-school activities become privatized, many parents are struggling to keep up financially. These activities have become less accessible to kids from low-income and/or families of color. This project focuses on the challenges that Muslim youth face when participating in extracurricular activities. It uses two sets of data and methods: (1) a close reading of existing research on the experience of Muslim youth in extracurricular activities and, (2) preliminary interviews with Minnesota Muslim youth about their experiences in extracurricular activities. This research shows that Muslim Americans expect youth activities that are similar with many other American parents and kids, but also identifies distinctive racial and religious challenges of Muslim youth.

Samantha Acosta, Baylor University
Mentor(s): Dr. Stacy Ryan-Pettes, Assistant Professor, Department of Psychology and Neuroscience
Oral Presentation
Title: Relations Between Parent-Child Sexual Communication and Risky Behaviors Among Justice-Involved Youth

Minority justice-involved youth have the highest rates of sexually transmitted infections. Research suggests parent-child sex communication is negatively related to youth risky sexual behaviors; however, this research has yet to include minority justice-involved samples. To fill this gap, justice-involved youth who completed baseline assessments as part of an ongoing treatment study and their parents (N=10) were included in the current analyses. Results showed youth report of risky sexual behaviors was negatively correlated with parent report of any history of sex communication, r(8) = -.78, p = .05; and positively correlated with parent report of sex communication in the past 6 months, r(8) =.82, p = .01. Parents and justice-involved youth are having sex-related communications, and this is related to youth report of risky sexual behavior.

Guadalupe Aguilar, St. Edward's University
Mentor(s): Dr. Casie Parish-Fisher, Associate Professor, Forensic Science
Oral Presentation
Title: The Development of a Novel Dual Chemical for the Development of Blood Utilizing Titanium Dioxide and a Fluorescent-based Chemical

Blood-based evidence is a common type of evidence found within crime scenes. To date, there are many chemicals that are used to develop various amounts of blood; however, most turn blood a dark color. This project aims to develop a novel dual chemical that would produce a white reaction color in ambient light and a fluorescent hue when utilizing an alternate light source. 1,8-Diazafluoren-9-one (DFO) and Acid Yellow 7 (AY7), which reacts with amino acids and proteins combined with Titanium Dioxide, which produces a white reaction, have been chosen to attempt to optimize a novel chemical solution for these samples.
Osmar Aguirre, University of New Mexico
Mentor(s): Dr. David Dunlap, Professor, Physics
Oral Presentation
Title: The Entropy Paradox in the Chapman-Jouguet Theory of Detonation

The Chapman-Jouguet theory of a detonation wave in reacting gaseous mixtures was fully established by 1905. By connecting initial and final states under the assumptions of steady-state, the theory gives close agreement with experimental final-state thermodynamic properties as well as the velocity of propagation. In spite of the close agreement, the CJ theory was broadly criticized, most notably in 1935 (Scorah), when it was shown that the final state was an entropy minimum, and hence should not be stable. We have resolved this 85-year old paradox, showing that the critics made a mistake; the final state is an entropy maximum after all.

Syed Ali, Concord University
Mentor(s): Dr. James Walters, Assistant Professor, Department of Biology at Bluefield State College, Dr. Harold Burgess and Jennifer Sinclair both of Division of Developmental Biology @ Eunice Kennedy Shriver National Institute of Child Health and Human Development
Poster Presentation
Title: The effects of CHD8 mutation in Zebrafish GI dysmotility and peristalsis rate

Patients with Autism Spectrum Disorder (ASD) often have a comorbidity that includes GI distress including constipation. We used Zebrafish (Danio rerio) to model the ASD GI constipation as they are optically transparent and physiological processes are readily observed by microscopy. Our hypothesis is that CHD8-/- mutants will have a slower intestinal transit rates due to reduced peristalsis. To determine the rate of food transit through larval intestine, larvae were fed with fluorescent beads mixed with a normal diet. Surprisingly, peristalsis in CHD8 -/- larvae had a higher mean rates of muscle movement as compared to wild type. These data suggest that uncoordinated peristaltic contractions in CHD8-/- mutants lead to this phenotype. Determining if this is the case is the focus of our future studies.

Ilona Alisudjana, University of New Mexico
Mentor(s): Dr. Kait Hirchak, Research Assistant Professor, Center on Alcoholism, Substance Abuse and Addictions
Oral Presentation
Title: Assessing Opioid Use Disorder (OUD) among Native and Non-Native Communities

The American Indian/Alaska Native community has been disproportionately impacted by the opioid epidemic. Research is still emerging but not much is known about regional use patterns. Articles used and discussed in this research were based on content, article references, suggestions from mentors. Although efforts in finding treatments have been found for non-Native communities, effective treatment within the Native community is still sparse. Moving forward, certain factors to consider include behavior of prescriber, existing mental health conditions and non medical use patterns.

Eric Amador, Boise State University
Mentor(s): Dr. Dora Ramirez, Professor, Department of English & Prof. Mitch Wieland, Professor, Department of Theatre Arts and Creative Writing
Oral Presentation
Title: Tortillas de Harina and Other Stories

After being estranged from their family for so many years, Roe receives a call from their mother and is told that their abuela was rushed to the hospital. Though Roe agrees to meet their mother there, anxiety immediately begins to take hold of them. Unsure of how their family will react to their true self, Roe
aversely conceals their queer identity out of fear of how they will react. However, as reluctant as Roe may be in showing their true self, this may be their last chance to do so with their abuela, someone whom Roe holds dear yet distant.

**Zoe Andrews**, University of Central Oklahoma  
Mentor(s): Dr. Melville Vaughan, Professor, Department of Biology  
Oral Presentation  
Title: *Keratinocytes and Pre-cancerous Keratinocytes Migration in a 3D Cell Culture*

The normal architecture of skin is determined by the proliferation and stratification of Keratinocytes and are the primary skin epidermal cells that are affected by squamous cell carcinoma and basal cell carcinoma. Ras activation is a major pathway that is likely to be involved in cellular changes that produce skin carcinoma. In this study the migration patterns of three cell line of Ker-CT; Ker-CT (KCT), Ker-CT-Ras-Loose (KCLR) and Ker-CT-Ras-Firm (KCRF). To better understand the migratory nature of precancerous keratinocytes out of a 3D environment we used a nested matrix model. The migratory nature of the cells was observed through time-lapse photography. Preliminary data from our lab demonstrates a finger-like migration of Ker-CT-Ras cells out of the nested matrix, suggesting chemotaxis or grouped cell migration. Ker-CT-Ras cells also seem to exhibit a single cell migration out of the matrix. We hope to gain a better understanding of the migration of precancerous keratinocytes, out of a 3D model. Ultimately, this data will contribute to understanding the mechanisms of epithelial cells, their migration, and pathogenesis of metastases.

**Denicia Aragon**, University of New Mexico  
Mentor(s): Dr. Vincent Clark, Professor, Department of Psychology  
Oral Presentation  
Title: *How Transcranial Direct Current Stimulation (tDCS) Effects Vigilance*

In previous work within our lab, anodal transcranial direct current stimulation (tDCS) over right frontal cortex improved learning during a threat detection task. This study’s goal was to replicate our previous findings and additionally observe how the cognitive process of attentional vigilance contributes to the findings. Thirty participants took part in a double-blind study in which they received thirty minutes of 2.0mA anodal or sham stimulation. Participants completed both a vigilance task (Gradual Continuous Performance Task) and the threat detection task before and after stimulation. Attention and learning was compared between groups to examine the effects of stimulation.

**Mariel Arias-Guerrero**, Harding University  
Mentor(s): Michelle Holland, Assistant Professor, Spanish Department  
Poster Presentation  
Title: *Predecessors to Progress: A Cultural Exposition of Ancient Aztec Influence on Modern-Day Mexico City.*

This research explores cultural factors contributing to the state of modern-day Mexico City, specifically to expound on how Aztec economic, agricultural, and social-class structures have demonstrably influenced present-day Mexico City. An analysis of texts, letters, books, statistical records, economic and agricultural trend analyses were among the sources accessed in order to draw informed conclusions.
Ana Astoquiltca, Wichita State University
Mentor(s): Dr. Karissa Marble-Flint, Assistant Professor, Department of Communication Sciences and Disorders
Oral Presentation
Title: *Stickwriting Approach for Children with Autism and Social Communication Disorders*

The purpose of this pilot study is to replicate previous findings relating the stickwriting approach to note-taking for children with autism or social communication disorders. The two participants will be referred to as Tom and Lucy throughout this paper. Participants attended one-hour sessions, once a week, for ten weeks. They first read a story, then wrote bulleted notes or paragraphs in each session. The bulleted notes were rated using a 3 to 0 scale that measured form and content of writing. Results showed that Lucy’s ratings increased for both form and content and Tom’s ratings increased only for form. Overall, this demonstrates that the stickwriting approach was effective in helping children with autism and social communication disorders apply new techniques in their educational endeavors.

Tyler-Joseph Ballard, Castleton University
Mentor(s): Dr. Rich Clark, Professor, Department of History, Geography, Economics and Politics
Poster Presentation
Title: *Poll Dancing: An Analysis of the Bipartisan Tendencies of Vermont's Electoral Bellwethers*

Bellwethers are perfect representative samples of a population. This study looks at bellwether municipalities in Vermont that have appeared to be reliable measures for predicting the outcome of the state’s gubernatorial elections. Through regression analyses comparing municipal-level demographic data and election data with data at the state-level, this research aims to find factors that explain the predictive power of those bellwether municipalities. The data suggest that these bellwether municipalities, while matching the state’s overall election outcomes, do not match the state on the factors that are useful for predicting gubernatorial outcomes at the state level. In other words, they do not have prospective value, leading to the conclusion that these bellwethers may work until suddenly they don’t.

Tanyka Begaye, Boise State University
Mentor(s): Dr. Alicia Garza, Professor, Department of World Languages
Poster Presentation
Title: *The Relationship Between Cultural Involvement and Education Performance for Native American Students*

Student success can be affected by or attributed to various factors such as home environment, family situations, or learning barriers. We will explore the relationship between the academic success of American Indian and Native American students and their involvement in cultural practices, traditions, and ceremonies. In terms of education performance rates for American Indian students in Idaho and Arizona, reports from 2014 and 2015 indicate lower scores across mathematics, language arts, and science in comparison to other students. For this study, we will study literature pertaining to cultural involvement on education performance. In addition, we will randomly select ten participants groups made up of a parent and an elementary aged student to participate in a survey on their involvement in Native American culture and academic performance. We hope to find a positive correlation in the relationship between cultural participation and education performance due to the importance of both to American Indians.

Mya Bolds, Xavier University of Louisiana
Mentor(s): James Nieh, Dr. Jorge Cortes, Professor, Department of Mechanical Aerospace & Engineering
Poster Presentation
Title: *Multi-Agent Cooperation and Navigation Through Infrared Localization*
Robot localization is a procedure that determines where a robot is located with respect to its environment. Localization is fundamental to autonomous robots because knowing its location is essential to making decisions about future actions. Two HTC Vive base stations emitted infrared transmitters. The embedded system of the robot contained an inertial measurement unit to provide kinetic information, a microprocessor that holds code and communicates to the robot specific tasks it should perform in order to successfully achieve localization, and photodiodes to detect HTC Vive beacons sweeps. The system of the robot receives and filters the signals from the beacons and calculates its position based on it. An algorithm called the Kalman Filter is used to fuse information from the IMU and embedded system to obtain an improved estimation of the position. After successfully achieving localization, we intend to integrate this system into the drone and ground robot. Intelligent autonomous robots can revolutionize the world as we know it. The importance of this project is significant because without localization, the attempt to create a fully-functioning robot is futile.

Mikala Bowen, Xavier University of Louisiana
Mentor(s): Dr. Laurence Leonard, Distinguished Professor, Purdue University Speech, Language, and Hearing Sciences; Dr. Patricia Deevy, Research Associate, Purdue University Speech, Language, and Hearing Sciences
Poster Presentation
Title: Role of Length and Complexity in the Sentence Comprehension of Children with Developmental Language Disorder

This study examined sentence comprehension in children with Developmental Language Disorder and its cognitive demands, such as length and syntactic complexity. Eleven children with DLD completed six sentence comprehension tasks; the first three were to ensure they understood adjectives and subject-verb-object sentences and the next three, the ‘experimental’ tasks, were items that varied in either length or complexity, which included four picture choices with foils competing with the target picture. There was no significant difference within subjects between each experimental task. It appears to be that after a certain achievement level, higher demand tasks have less of an effect on the child’s ability to comprehend the sentence because children who scored above 80% on all of the preliminary tasks had no issue with the experimental tasks.

Calvin Brooks, Castleton University
Mentor(s): Dr. Mark W. Russell, Professor of Pediatric Cardiology, School of Medicine, University of Michigan
Poster Presentation
Title: Increases In Biomarkers of Inflammation Following Neonatal Cardiac Surgery Associated With Adverse Clinical Outcomes

Neonatal cardiac surgery is associated with morbidity and mortality, and early identification of high risk patients is critical. Because inflammation is associated with negative outcomes after cardiac surgery, we measured serum inflammation biomarkers in forty neonates undergoing repair of congenital defects with cardiopulmonary bypass (CPB) and examined short-term outcomes. Patients with a composite adverse outcome (death, cardiac arrest, stroke, renal replacement therapy, or extracorporeal membrane oxygenation support) showed significantly increased lactate levels (p=.001) and Vasoactive Inotropic Score (VIS) (p=.007) 2hr post operatively. Levels of interleukin 8 (IL-8) (p=.018), interleukin 10 (IL-10) (p<.001), and vascular endothelial growth factor (VEGF) (p=.001) were higher 24hr postoperatively in patients with adverse outcomes. This study found that IL-8, IL-10 and VEGF show great potential as prognostic indicators after surgery.
**Oral and Poster Presentation Abstracts Listed Alphabetically by Last Name**

*Poster Presentations, Oct. 3, SUB Atrium (schedule is on pages 10 – 14)  
Oral Presentations, Oct. 4, SUB Top Floor (schedule is on pages 15 – 26)*

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**Torrence Brown-Smith**, University of Northern Colorado  
Mentor(s): Dr. Kyle Anne Nelson, Chair, Department of Sociology  
Oral Presentation  
**Title:** It gets tiring. It affects different parts of your life: Examining Racial Battle Fatigue among Black College Students at a Historically White University

Racial stressors on historically White campuses effect Black student’s mental well-being, thus negatively affecting their path to collegiate success. This study used focus groups to examine the experiences of 12 Black students. Three themes emerged: (a) Racial microaggressions within academic spaces, (b) double-consciousness, and (c) institutional macroaggressions. As a result of these themes, students reported psychological stress responses symptomatic of racial battle fatigue (e.g. frustration, anger, resentment, and anxiety).

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**Kevin Bueling**, Montana State University - Bozeman  
Mentor(s): Dr. J. Mitchell Vaterlaus, Associate Professor, Department of Health and Human Development.  
Oral Presentation  
**Title:** Technology and it's perceived influence on the health behaviors of family units

Technological convergence has led to ready access to varied media on one device. Technology has become an important topic during adolescence and within families. The current study was designed to understand the perceived role of technology on health behaviors within families. Using a qualitative case study design, 11 family triads (adolescent, mother, and father) reported their perceptions regarding technology use on their families' health behaviors (i.e., diet and exercise). Three themes were identified: (a) Physical activity and technology, (b) Food choices, information, and technology, and (c) Parental mediation of technology use to support health behaviors. Understanding family perceptions can inform future research to support health behaviors within families in a technology saturated world.

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**Alanis Burton**, Lee University  
Mentor(s): Dr. Benjamin Christmann, Associate Professor of Biology and Health Science  
Oral Presentation  
**Title:** Empty or Full: A Survey of McMinn County’s Food Pantries and Their Abilities to Meet Nutritional Standards

This study was conducted evaluating the nutritional quality of food pantries in McMinn County, Tennessee. The study assessed six nonclient-choice food pantries in McMinn County, Tennessee. The assessment process entailed the collecting of data through photographs of the food within pantries. The study assessed the average calorie, carbohydrate, fat, protein, sodium, and potassium levels in the food when normalized to a 2000 calorie diet. The findings confirm that the food pantries at the time of the study did not meet the FDA recommendations. Despite intentions of food banks, the food distributed did have the capacity to negatively affect the recipients.

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**Austin Cardenas**, University of Central Oklahoma  
Mentor(s): Dr. Nicole Warehime, Professor, Department of Sociology  
Oral Presentation  
**Title:** College Students and Agents of Socialization

This research studied students who attended a southern university in Oklahoma. The focal point of this research is Oklahoma’s Promise. “Oklahoma’s Promise allows eighth, ninth or 10th grade students from families with an income of $55,000 or less to earn a college tuition scholarship,” (Oklahoma State Regents For Higher Education 2019). A multistage method was applied in this research project for the purpose of capping the number of participants while maintaining randomization. The researchers
investigated the correlation between child maltreatment and college students. This research tested one hypothesis regarding abuse, neglect and agents of socialization. The importance is understanding agents of socialization impact how children develop and socialize in society. The implications of micro-level effects with education and child maltreatment are discussed in this research.

Derrick Charley, University of New Mexico  
Mentor(s): Dr. Svetlana Poroseva, Associate Professor, Department of Mechanical Engineering  
Oral Presentation  
Title: The Reduction of Parasitic Drag on a Rotorcraft Using a Bio-Inspired Rotor Hub

This study analyzes the reduction in parasitic drag on a rotor craft using a bio-inspired rotor hub. The bio-inspired rotor hub is based on the body shape of the Cicada which was selected in a prior study by the University of New Mexico. Drag measurements are gathered using a wind tunnel and flow visualizations are gathered using a water tunnel. The coefficient of drag of the bio-inspired rotor hub is compared to the coefficient of drag a rotor hub used by the Boeing Osprey. The comparison shows that future research into the efficiency of the bio-inspired rotor hub is required.

María S. Cobo Nieto, Marquette University  
Mentor(s): Stacy Ko M.A. CCC-SLP and Wendy Krueger M.S. CCC-SLP Department of Speech-Language Pathology and Audiology  
Poster Presentation  
Title: Hispanic Students in Speech-Language Pathology: Where Are You?

The United States’ demographics are constantly changing with a larger percentage of Hispanics living in the country. Meanwhile the speech-language pathology field’s demographics are not. Bilingual English-Spanish SLP’s are in high demand with only 6% of ASHA’s member’s self-reporting as bilingual. Past research has looked into holistic ways to accept students of different backgrounds but factors such as socioeconomic status and cultural differences are not considered. Data taken from Marquette University’s students in the SLP and Audiology Department reveals that Hispanic students in the program are more likely to be first-generation college students and be of low socioeconomic status. These students have the potential to increase the percentage of bilingual SLPs, but factors related to their culture make it harder for them to achieve this.

Edel Contreras, University of Wisconsin-Whitewater  
Mentor(s): Dr. Kris Curran, Department of Biological Sciences  
Poster Presentation  
Title: Using Activin to Induce Mesoderm in Embryonic Tissue

Xenopus laevis is an ideal model for transgenesis procedures and developmental studies. The amphibian blastula embryos contain pluripotent cells in their ectodermal region, called the “animal cap”, which can be put to use to understand the variety of organogenesis process. In this case, cardiac actin embryos will be used. We will then generate in vitro muscle cells by using activin to induce mesoderm in embryonic tissue to test whether circadian genes influence this early process in development. This experiment will provide more information on organ engineering, mostly in vitro organ growth.

Milena Cornejo, University of Minnesota  
Mentor(s): Dr. Megan Gunnar, Professor, Department of Developmental Psychology  
Oral Presentation  
Title: The Protective Role of Hispanic Ethnicity on the Relationship Between Stress and Executive Functioning in Preschool-Aged Children
Executive function (EF) is an important cognitive skill for academic success (Carlson, Zelazo, & Faja, 2014), but whether race/ethnicity or parent stress influence child EF remains undetermined. We investigated the link between stressful life events and child EF in 2- and 3-year-olds (n=111) and whether that relationship was moderated by child race/ethnicity. Parent stress interacted with child race/ethnicity to marginally predict EF (t=1.95, p = 0.05) such that more stressful life events were associated with lower EF scores in White children, with the opposite association in Hispanic children. This suggests potential cultural variation in parenting styles under stress. Future research should investigate the dynamics within these families to inform interventions promoting child EF development.

Leonard Covarrubias, Washington State University
Mentor(s): Dr. Monica Kirkpatrick Johnson, Professor and Department Chair, Department of Sociology
Poster Presentation
Title: Perceptions of Adulthood: Differences Amongst Youth in Alternative and Public High Schools

This study examines perceptions of what it means to be an adult between high schoolers from alternative and public high schools. While public high schools are culturally normative institutions where adolescents are educated and prepare for adulthood, alternative high schools are seen as institutions at-risk students attend in a last-chance effort at obtaining a high school education. It is unclear whether students from these schools have similar perceptions of adulthood. Research articles regarding adolescent transition into adulthood, racial/ethnic differences, and young-adults’ perceptions of cultural markers was assessed to compare perceptions. Student demographics within each school types were evaluated to understand possible differences. Survey data from the 1994-1995 National Longitudinal Study of Adolescent to Adult Health (Add Health) was also used in answering the research question.

Kayla Cox, Concord University
Mentor(s): Dr. Adriana Falco, Assistant Professor of Psychology, Concord University
Poster Presentation
Title: Nicotine Conditioned Place Preference in Female Adolescent Rats

Research suggests human adolescent females exhibit vulnerability to nicotine, utilize more tobacco products, and have greater difficulty stopping use (Natarajan, Wright, & Harding, 2011). In this study, female adolescent rats will be used to model the rewarding effects of nicotine in a place conditioning paradigm. The hypothesis of the current study is that female rodents who are injected with nicotine will spend more time in the naturally nonpreferred side of the place conditioning apparatus in comparison to those that are injected with saline. Ultimately, understanding the rewarding effects of nicotine can reveal better treatment options for those who suffer with nicotine addiction.

Elijah Cox, Lee University
Mentor(s): Dr. Arlie Tagayuna, Assistant Professor, Department of Sociology
Oral Presentation
Title: Ayuda en el Camino del la Muerte

This research explores the lesser known response of evangelical churches in the United States regarding the influx of migrants seeking refuge along the bordertowns of southern Arizona and Mexico. While on location, the analytic framework was developed using various interviews, participant observations and a discursive analysis of current events under the Trump Administration’s polemic immigration policies. Findings suggest that the response is organic and fragmented, yet displays a number of collaborative alliances between members of evangelical institutions and nonprofit organizations, both of which are working bi-nationally to alleviate the impacts of immigration policies and the militarization of border communities. Members of evangelical institutions employ informal services to navigate their Christian
calling of "hospitality and benevolence," as well as tread their legal obligations as citizens, behind the shifting ideology of ultra-nationalism and xenophobia of the current administration.

Sarah Dallo, University of New Mexico
Mentor(s): Dr. Natalie Adolphi, Associate Professor, Department of Biochemistry & Molecular Biology
Oral Presentation
Title: Using jMRUI Software to Quantify and Analyze Brain Metabolites in Post-Mortem 1H Magnetic Resonance Spectroscopy in Cases of Acute Drug Intoxication

Drug overdose deaths require investigation (typically an autopsy) by a medical examiner. Alternatively, magnetic resonance imaging (MRI) could be used to rule out other causes of death and provide information about drug intoxication. Previous researchers have used proton magnetic resonance spectroscopy (1H MRS) to quantify changes in brain metabolites in the context of chronic intoxication. This research uses 1.5 T 1H MRS to quantify post-mortem brain metabolites in the context of acute intoxication. We hypothesize that the metabolites glutamine and glutamate will be significantly decreased in fatally-intoxicated subjects, relative to controls. jMRUI software is used for spectral data analysis, and a two-sided unpaired t-test will be used to indicate a statistically significant metabolite that can be used as an acute intoxication biomarker.

Angela Davies, University of New Mexico
Mentor(s): Dr. Yan Lin, Assistant Professor, Department of Geography
Oral Presentation
Title: Uncertainties in Spatial Access: A Comparison of Street Networks

Street network data are increasingly available from numerous sources, including proprietary, free, and web-based services. However, these data sources may be incomplete, inaccurate, or simply unsuited for spatial analysis. This study examined how uncertainty is created by different street network data when measuring spatial access. Four street datasets for the greater Albuquerque metropolitan region (two proprietary, ESRI StreetMap Premium and Google Maps; one free, ESRI North America Detailed Streets; and one open-source, OpenStreetMap) were used to generate travel times to primary care physicians. Additionally, attribute accuracy of speed limit data for free and open-source streets were assessed. One-way ANOVA found statistically significant differences in travel times across these street datasets (p=0). Results of this study indicate that caution should be taken when selecting street data.

Emily Davis, Concord University
Mentor(s): Dr. Rodney Klein, Professor of Psychology, Concord University
Oral Presentation
Title: Effects of Chewing Gum on Cognitive Performance

The effects of chewing gum and test taking have shown to have a significant increase in memory, alertness, positive changes in cognitive performance, increased concentration and improvement of short-term and long-term memory. The purpose of this research is to replicate and study the scores of individuals that perform the chewing gum and test-taking task. Most students have trouble focusing or keeping full attention when testing or studying. It is essential to help students in any way possible to improve, and if chewing gum can help improve cognitive performance or concentration, then this study will show a useful study or test-taking tactic.
Isaiah De La Torre, University of Wyoming
Mentor(s): Dr. Jifa Tian, Assistant Professor, Department of Physics and Astronomy
Oral Presentation
Title: Preparation and Field Effect Properties of Two-Dimensional (2D) Tellurium

Tellurium (Te), a group-VI narrow-bandgap p-type semiconductor with a unique one-dimensional (1D) van der Waals crystal structure, can form 2D layered structures, showing intriguing electrical, thermoelectric, and optical properties. Despite the recent progress on nanostructured Te, creating high-quality 2D Te from its bulk crystals remains a challenge owing to its 1D chain-like crystal structure. In this work, we aimed to develop techniques to prepare high-quality 2D Te with controlled thickness using exfoliation and chemical vapor deposition (CVD) methods. We systematically characterized the morphology and chemical compositions of the exfoliated and CVD-grown 2D Te. We further fabricated 2D Te-based field effect transistors using various nanofabrication techniques and studied their field effect (FE) properties at room temperature.

Kaylee Delgado, St. Edward's University
Mentor(s): Dr. Charles Hauser, Associate Professor, Biological Sciences
Oral Presentation
Title: Toxicity of Chlamydomonas Chloroplast-expressed Cry11A Protein on Caenorhabditis Elegans

Plant parasitic nematodes have devastated crops by destroying roots and have contributed to decreased plant diversity. This experiment examined the impact(s) on the viability of the model organism C. elegans (N2) when exposed to a potential nematicide (cry11A) expressed from an engineered strain of Chlamydomonas reinhardtii. Five experimental conditions and two controls were tested to determine toxicity. In order to determine if the strains are toxic to free-living nematodes, a longevity assay was performed for each of the seven conditions. If the strains prove to be toxic, there is a possibility of using these strains in crop pest control.

Jonathan Delgado, UMass - Boston
Mentor(s): Jason Green, Associate Professor, Department of Chemistry
Oral Presentation
Title: Non-Asymptotic Entropy Rates as Thermodynamic Observables

Many physical phenomena generate structures and patterns that are unique out of thermodynamic equilibrium. Efforts to understand these processes using the concept of entropy stretch back to the very beginnings of thermodynamics. While recent connections to information-theoretic entropies have deepened our understanding, it is still common to neglect a broad class of phenomena with steady-state assumptions and asymptotic limits. By reexamining the finite-time definitions of entropy in information theory, we have derived relationships for the irreversible production of entropy, and the exchange of entropy and energy between a system and its environment, without these restrictions. Our results open up possibilities for a new understanding of diverse, transient physical systems and the direction of time's arrow.

Senea Diaz, Louisiana State University
Mentor(s): Geoffrey Coalson, Associate Professor, Department of Communication Disorders
Poster Presentation
Title: The prevalence of ADHD traits in adults who stutter

Stuttering is a misunderstood disorder, and coexisting disorders tend to contribute to its complexity. Models of stuttering suggest elevated emotional reactivity can subtract attention from speech. This study investigated how the prevalence of ADHD traits in adults who stutter (AWS). Participants were 15 AWS
and were administered a screening measurement that indicated if a person's risk of having ADHD, not a diagnosis. Case histories determined if participants already had the ADHD diagnoses. Results showed that 66.7% of AWS meet referral criteria for ADHD, while none of the participants had the ADHD diagnosis. These results affirm the study's hypothesis, suggesting that ADHD is underdiagnosed in adults, and this can be influential to stuttering therapy.

**Allison Doney**, University of New Mexico  
Mentor(s): Dr. Charlie Steen, Professor, Department of History  
Oral Presentation  
**Title:** Climate in Pre-Revolutionary Countries: Examining the Roles of Absolutism, State Ineffectiveness, and Economic Crisis in the French Revolution of 1789

This presentation will discuss the major causes of social revolutions and the climate that must be present within a nation for a revolution to occur. This research draws from both historians and sociologists of social revolutions to find both long-term causes and catalysts behind social revolutions. This presentation will use the French Revolution of 1789 as an example because of its profound impact on many western countries as well as theories on practices in governance. By focusing on the events of pre-revolutionary France in the late 1700’s, specifically, absolutism, state ineffectiveness, and starvation, it will show how citizens react to their government during pre-revolutionary eras as well as how and why people actively agree to come together and revolt against their government.

**Jhenny Dorival**, Lee University  
Mentor(s): Dr. Michael Sturgeon, Research Coach; Wm. G. Squires Library  
Poster Presentation  
**Title:** The Psychosocial Effects of Social Media

The purpose of this study was to determine the association between Social Media (SM) and psychosocial behavior. This study also strived, to characterize the level of dependence between SM and depressive symptoms. This research study was based on the theoretical framework of the Use and Gratification theory. The research conducted was a quantitative and quasi-experimental research study. The sample size was n=102 persons. Of the sample 22% were male and 78% were female. To assess depression and anxiety, the survey entailed question pertaining to loneliness, feeling left out, social interactions, and comfort in certain settings, to mention a few. Additionally, questions were posed in order to indicate the users’ dependence on SM. Various resources were used to develop the questions including the SM Addiction Test. The collected data were analyzed by descriptive statistics where SPSS was utilized. The results illustrate that there is an association between SM dependence and depression as well as SM dependence and anxiety issues. The findings strongly indicate that excessive SM use is associated with depressive symptoms in users of a wide variety of age, nationality, and sex.

**Rebecca Dulaney**, University of Wyoming  
Mentor(s): Dr. Anne Guzzo, Associate Professor, Department of Music  
Oral Presentation  
**Title:** Chance Sounds: Are They Music?

The objective of this study is to determine whether chance sounds, temporarily organized, should be considered as a musical genre or performance art. Three methods were used for this study: researching music and performance art history, comparing both chance and determined music, and student interviews. By examining each musical period, qualities of chance can be compared to qualities of music over time. Composing both a chance and a determined piece will aid in understanding the challenges and techniques used for each. College students ages 18 to 27 listened to the chance piece and decided
whether or not it should be deemed as music. This study will aid composers, educators, and performers in how they should approach chance pieces.

Yaren Euceda, University of Minnesota - TC
Mentor(s): Claire Frechette M.S. (Ph.D. Candidate) and Dr. Ben Brubaker, School of Mathematics, College of Science and Engineering
Oral Presentation
Title: Counting Metaplectic Ice and Modified Alternating Sign Matrices

Mills, Robbins, and Rumsey conjectured that for a given $n$, there exist $\frac{1447! \cdots (3n - 2)!}{n! (n + 1)! (n + 2)! \cdots (2n - 1)!}$ alternating sign matrices (ASMs). Zeilberger proved the conjecture by establishing a bijection between ASMs and totally symmetric self-plane partitions. Kuperberg provided a second proof using the bijection between ASMs and lattice models with domain wall boundary conditions. We introduce modified alternating sign matrices, and we prove a bijection between these matrices and lattice models with modified boundary conditions, which appear in the study of number theoretic special functions. For future directions, we seek to modify Kuperberg’s proof to provide a count for certain sizes of modified alternating sign matrices.

Abigail Ferrara, Castleton University
Mentor(s): Dr. Helen Strom-Olsen, Adjunct Professor, Department of Exercise Science
Poster Presentation
Title: Facilitators and Barriers of Rehabilitative Exercise

Physical therapists prescribe necessary treatment to help patients improve mobility, increase strength, and restore function, with the expectation that exercises will be completed at home. Rehabilitative exercise is facilitated by an increase in self-efficacy, support, and education, while it can also be disrupted by a sedentary lifestyle, poor self-belief, time constraints, and access to resources. These factors may vary between individuals and communities. It is important for a physical therapist to understand the factors influencing program success in their patients and communities. We administered a written survey to determine the primary barriers to PT program compliance in a small Vermont community.

Elizabeth Ferrer, Florida International University
Mentor(s): Dr. Alexander Agoulnik, Vice Chair, Department of Human and Molecular Genetics
Poster Presentation
Title: Effect of Relaxin Signaling on ERBB2-Induced Breast Cancer

Relaxin, a small peptide hormone, has been found to be highly expressed in several human metastatic cancers. However, there is contradictory published data on the role of relaxin/RXFP1 (Relaxin/Insulin like Family Peptide Receptor 1) in breast cancer. Our laboratory has shown that the small molecule ML290 is a biased agonist of RXFP1 with anti-fibrotic properties. The aims of the project are to 1) analyze the role of endogenous relaxin signaling in breast cancer induced by transgenic overexpression of ERBB2 in mice and 2) study the effects of the small molecule agonist of the relaxin receptor, ML290, on ERBB2-induced tumor development and metastases. Preliminary results indicate that ML290 treatment may decrease breast cancer progression.

MacKenzie Freeman, University of Wisconsin-Whitewater
Mentor(s): Jennifer Anderson, Professor, Department of Social Work
Poster Presentation
Title: Intersectionality of At-Risk Behaviors in Youth
Using intersectionality as a theoretical context, this study explored risk and protective factors of youth from a rural mid-west unified school district. Thus, this study seeks to evaluate various domains that identify a youth as at-risk. The following domains were examined: Social support, suicide, weapons/violence, bullying and threats/personal safety. Demographic data; such as, but not limited to age, gender, level of education, race and ethnicity were considered. Participants ranged in grades from 6th to 12th grade with a division in the grades made between middle school (N=271) and high school students (N= 451). A secondary data analysis of the quantitative data for the school year 2017-2018 Youth Risk and Behavior Survey (YRBS) was used.

**Jordan Fuselier**, University of Northern Colorado  
Mentor(s): Dr. Mary Evans, Assistant Professor, Department of Criminology/Criminal Justice  
Oral Presentation  
*Title: Initiating a New Perspective: The Prevalence, Perceptions, & Attitudes Towards Hazing Across Student Organizations on a College Campus*

Hazing is a widespread problem occurring on college campuses across the United States. This study explored the prevalence, perceptions, and attitudes towards hazing at medium-sized mid-west university. Using a web-based questionnaire, results indicated that 53.8% of college students have a clear understanding of the hazing policy at their university. To date, hazing research on college campuses has focused on Greek life and sports while examining a generalized portion of demographic factors. Findings from this study will target and identify hazing behaviors within a larger scale of student groups and identify demographical differences. Further, these quantitative results can be used for hazing prevention across various universities.

**Alejandro Gallego**, Florida International University  
Mentor(s): Dr. Frank J. Penedo, Professor, Departments of Psychology and Medicine  
Poster Presentation  
*Title: Physical Activity in Health-Related Quality of Life in Advance Prostate Cancer*

Hormone therapy (HT) is commonly used for patients with advance prostate cancer (APC) in order to increase their chances of survival. APC patients treated with HT report significant reduction in health-related quality of life (HRQOL). This study examines the association between physical activity (PA) and HRQOL in 180 APC patients who have undergone HT within the last year. We hypothesize APC patients with higher levels of PA will report higher HRQOL. A one-way ANCOVA was used to measure the relationship between four levels of PA and HRQOL while controlling for related covariates (e.g., age, comorbidity). PA was found to be significantly associated with patient’s HRQOL. Therefore, PA has the potential to be used as a behavioral intervention to buffer the effects of cancer treatment.

**Wendy J. Gallarza**, University of New Mexico  
Mentor(s): Dr. Alexandra Davis, Asst. Professor, Dept. of Human Development and Family Studies  
Oral Presentation  
*Title: Discrimination Experiences and Social Behaviors Among Young Adults*

The goal of the current study was to examine the links between specific forms of discrimination and ethnic minority young adults’ social behavioral outcomes. The current study utilized short-term longitudinal data (across six months) to examine the links between four forms of discrimination (i.e., discrimination at work/school, social exclusion based on race/ethnicity, perceptions of stigma surrounding race/ethnicity, and threats made because of race/ethnicity) and young adults' behaviors (i.e., aggression, delinquency, and four forms of prosocial behaviors). Results demonstrated unique predictive effects for the specific forms of discrimination, highlighting the complexity of these experiences.
Dax Galloway, University of Wyoming  
Mentor(s): Dr. Hannah Jang-Condell, Assistant Professor, Department of Physics and Astronomy  
Oral Presentation  
Title: Installation and Trial of Light Diffusers at the Wyoming Infrared Observatory for Exoplanet Characterization  

The purpose of this project is to increase the photometric capabilities at the Wyoming Infrared Observatory (WIRO) for transiting exoplanet characterization. This project seeks to expand on a previous exoplanet study which identified limitations in the existing equipment. To mitigate that concern, an engineered light diffuser is being implemented at WIRO. After the installation is complete, we will repeat the previous study. That will entail multi-broad band observations of confirmed transiting exoplanets. These observations will be focused around measuring the effective Rayleigh-scattering in certain wavelengths of light. Following our observations and analysis, we will compare our results to the previous atmospheric exoplanet study with WIRO and other published literature. We are expecting to see an increase in precision relative to that of space-like photometry.

Alex Gann, Lee University  
Mentor(s): Dr. John Hearn, Professor, Department of Chemistry  
Poster Presentation  
Title: Relationship Between Vestibular Dysfunction and Fatigue in Persons with Multiple Sclerosis  

The vestibular system works alongside the somatosensory system and the ocular system to achieve an optimal state of balance. Multiple Sclerosis (MS) is a neurological disorder, primarily characterized by fatigue, which develops scar tissue around the nerve fibers. The objective of this study is to test the vestibular function within persons with MS and show the relationship between it and their clinical and subjective level of fatigue. Each participant completed a subjective Expanded Disability Status Scale (EDSS), Fatigue, and Balance Confidence surveys and underwent clinical testing using the Sensory Organization Test (SOT), Functional Gait Analysis (FGA), and the 6min walk test. Physical fatigue seems to be related to both self-report fatigue and balance. Self-reported fatigue does not seem to have a relationship with measured balance.

Raquel Garcia, University of Wisconsin La-Crosse  
Mentor(s): Megan Strom, Assistant Professor, Global Cultures & Languages  
Poster Presentation  
Title: A cage is not a home: Las familias merecen estar unidas  

Studies have shown that United States media in English and Spanish negatively represent unaccompanied Latinx children (Catalano, 2017; Strom and Alcock, 2017). In 2019, more than 60,000 arrivals of migrant children were placed in shelters across the country having limited access to basic needs (U.S. Customs and Border Protection, 2019). Our study focuses on how English and Spanish media represent migrant families and the devastating effects of family separation on migrant children. In this study, we carried out a Critical Discourse Study to analyze how the media in 102 English-language and 54 Spanish-language news articles published in the United States uses grammatical structure to hide the negative actions of U.S. immigration system against migrant children separated from their families.

Kathy Garcia, Our Lady of the Lake University  
Mentor(s): Dr. Carmen Serrata, Director McNair Scholars Program, Division of Student Success  
Oral Presentation  
Title: How Internalized Racism Impacts College Enrollment in Underserved Neighborhoods of San Antonio  


Despite both being located within the city of San Antonio, two school districts express different outcomes in areas such as median income and college readiness. This gap can influence the development of internalized racism, which manifests in students constructing a barrier, keeping them from achieving their full potential in education. The purpose of this study is to explore how internalized racism impacts college enrollment in the West Side of San Antonio, a community with historically low educational attainment and high rates of poverty. Through semi-structured interviews with participants who attended high school in the West Side of San Antonio, the researcher explores themes around internalized racism and college opportunity. The results bring awareness to the importance of educational equality in college opportunity and enrollment.

Lismar Garcia, Suffolk University
Mentor(s): Dr Jarvis Chen, Center for Academic Access & Opportunity (CAAO)
Poster Presentation
Title: The Important Role of Parks and Playgrounds in Decreasing Juvenile Delinquency
Abstract: This study aims to analyze the reasons why a park can be effective or ineffective as a tool for crime prevention. Parks and playgrounds can provide many positive benefits for communities including: health benefits, increasing property values, and community engagement. Another possible benefit from parks and playgrounds is their potential role in crime prevention. This mixed-methods study examines the relationship between shared spaces and crime. The primary research tool is a comparative cross-sectional study of juvenile crimes rates in communities before and after the founding of a public park, including assessments of the maintenance of public spaces and its effect on crime rates. A qualitative component of this study features observations of community interactions in parks in different conditions.

Theresa Garcia, University of New Mexico
Mentor(s): Dr. Thomas Chavez, Assistant Professor, Department of Counseling
Oral Presentation
Title: Socio-political Climate: Justice Involved Youth and Police Officer Perspectives
Police brutality in the United States is an ongoing, and ever hostile, debate. With increasing coverage of officer involved shootings, particularly of minority civilians, the topic of racial bias, abuse of power, and police excess use of force has been focused on more prominently in both the political sphere and research literature. This qualitative investigation uses four, two-hour focus groups: two police officer groups (male and female) and two former justice involved youth groups (male and female), with a maximum of eight people per group. They will be asked to discuss their feelings regarding each other, tensions between them, the role of race and social media, what they wish the other understood about them, and what improvements can be made in their relationship with each other.

Samantha Gardow, University of Minnesota - Twin Cities
Mentor(s): Dr. Megan R. Gunnar, Professor, Department of Developmental Psychology
Oral Presentation
Title: Maternal Macronutrients Across Pregnancy: Impacts on Fetal Growth Trajectories
Emerging evidence suggests that experiences during fetal development can alter development throughout the lifespan. The aims of this study were to characterize patterns of fetal growth over gestation and to examine associations between prenatal maternal macronutrients and fetal growth trajectories. A mixed-effects model including a quadratic effect of gestational age best fit fetal growth trajectories. Maternal intake of carbohydrates, proteins, and sugars were included as predictors of fetal growth trajectories in three separate linear mixed-effects models. Higher prenatal maternal sugar intake was associated with a slower rate of fetal growth. This effect persisted after adjusting for relevant covariates,
including maternal pre-pregnancy BMI. These findings provide novel information about trajectories of fetal 
growth and suggest that maternal nutrition may be a potential mechanism of fetal programming.

Ashley Garner, Lee University  
Mentor(s): Dr. Susanne Burgess, Assistant Professor, Department of Music Education  
Poster Presentation  
Title: A literature review on the benefits of music education: beyond the scope of academics

This literature review discusses research findings which strongly suggest that participation in music 
enhances students' academic achievements, attendance, and their social behaviors. Research may also 
propose; however, that such benefits unrelated to test scores or reading skill improvements include the 
development of students' coping mechanisms, self-concepts, self-confidence, and self-efficacy. The 
literature addressing music education and academic achievement is plentiful; however, there appears to 
be a lack of research on the matter of the social development of students. The need for more research in 
this specific area is important because the social interaction a student gains from participating in music 
groups and/or listening to music has been identified as beneficial for coping, cognitive development, and 
social development.

Nora Godoy-Gonzalez, Marquette University  
Mentor(s): Dr. Todd Hernandez, Professor, Department of Languages, Literatures and Cultures  
Oral Presentation  
Title: Disculpas: A comparative study of apologies in first-generation Mexican American heritage Spanish 
speakers and Mexican Spanish native speakers

The present study examines the apologies of seven Mexican native Spanish speakers (NS) and 10 first-
generation Mexican American (MA) heritage Spanish speakers (HS) assessed by a discourse completion 
task (DCT) consisting of five vignettes that varied across three variables: relative social status of 
interlocutor, relative social distance and seriousness of the offense. Before completing the apology 
questionnaire, participants were asked to respond to a background questionnaire designed to determine 
the role Spanish proficiency and culture awareness play in making apologies in Spanish. Examination of 
the participants’ background and apology questionnaires revealed that HS and NS used similar apology 
expressions when it comes to scenarios related to social status of interlocutor, relative social distance 
and seriousness of the offense.

Myrella Gonzalez, University of New Mexico  
Mentor(s): Dr. Lisa Cacari-Stone, Associate Professor, Department of Population Health  
Oral Presentation  
Title: Healing Trauma for Migrant Populations: Traditional Knowledge Interventions

How can we provide equitable health care to migrant populations? How can we create trauma-informed 
care for Mexicans by integrating traditional medicine and identity empowerment? This community 
engaged research seeks to cultivate alternative methods to heal trauma and promote community 
wellness by integrating indigenous and Latino/a/x knowledge to inform our understanding of trauma and 
wellness. Focusing on the health outcomes of Latinos/as/xs in the United States, this research aims to 
find the intersections between historical trauma, behavioral health and traditional Mexican medicine. This 
presentation will examine the use of community engaged research and the benefits of advancing public 
health initiatives in partnership with medical practitioners, university academics and community members.
Katherine Greenwell, University of Wyoming  
Mentor(s): Dr. Gabel Taggart, Assistant Professor, School of Politics, Public Affairs & International Studies  
Oral Presentation  
Title: Examining Food Insecurity and the Need for Food Sharing Cabinets at the University of Wyoming

In this study, I examine food insecurity among students at the University of Wyoming. The objectives of this study are to conduct a needs assessment for services targeted at students experiencing food insecurity, and to analyze alternatives for improving these services. I utilize a mixed methods approach that includes an analysis of local and national data, and interviews with undergraduate students, nonprofit administrators and campus partners. Food insecurity has the potential to negatively affect student success, wellness, retention, and academic performance. Students facing food insecurity feel shame, stigmatized, and a lack of equity; therefore, they shy away from utilizing services. Due to a lack of communication between the University of Wyoming and local organizations, many local food insecurity resources are vastly underutilized.

Carlos Guillen, University of Colorado Denver  
Mentor(s): Jessica Luna, MA McNair Scholars Senior Program Coordinator  
Poster Presentation  
Title: Inferiority: A Mental Illness?

The perception of being lower in status than others is a sensation that can be defined as inferiority. Inferiority is a daunting emotion that arises from unfavorable social comparisons that are products of realistic or imaginary sources. This literature review surveyed both males and females in all demographics and their sense of feeling inferior. The data shows both have experienced inferiority, which leads to negative self-imagery, low self-esteem, and acts of discrimination towards others. Though these emotions are subconscious, it often causes individuals suffering from it to overcompensate. Thus, the drive to overcompensate is to extinguish the inferior perception. Further research serves to show that the feeling of inferiority can be a diagnosis for mental illness but remedied with Emotional Intelligence.

Jeremy Gusset, Kean University  
Mentor(s): Craig Konyk AIA, Chair + Assist. Professor of Architecture, School of Public Architecture Michael Graves College  
Poster Presentation  
Title: Sculpture Cemetery

The purpose of this research is because cemeteries are spaces that exist in every community throughout the entire world. There is an opportunity to take these places that are only used for the dead and turn them into something for both the dead and the living. At a time when land is becoming more scarce it is more important now than ever to give cemeteries more than a single function. Our aim focuses to design an intervention that could take the place of traditional tombstones and monuments. A sporadic, sustainable approach that can be implemented anywhere. The goal is to keep the memories of those who have passed alive through the living people who will interact with the new monuments long after the family is gone.

Mahlet Haileyesus, University of Colorado Denver  
Mentor(s): Dr. Christy Briles , Assistant Professor Department of Geography/Environmental Science  
Poster Presentation  
Title: Deforestation and Global warming

This research is a literature review and offers insight on how deforestation impacts global warming. Trees are a source of carbon storage and live hundreds to thousands of years. Carbon is absorbed from the
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atmosphere using the process of photosynthesis. Deforestation is the second leading cause of carbon
dioxide release, accounting for ~24% of all greenhouse house gases released. The Amazon rainforest
fires in South America is one recent example of deforestation. Deforestation is happening around the
world by burning and cutting down trees which is one of main causes of the greenhouse gas effect.
Further research serves to explore how to fight the future risk of global warming by establishing
reforestation to rebuild degradation forests.

Alexis Harris, University of Central Oklahoma
Mentor(s): Steven Dunn, Manager Research Compliance, Office of Research & Sponsored Programs
Oral Presentation
Title: The Silent Stigma

Why is proper mental healthcare not taken seriously within the black community? What can be done to
dispel the “Silent Stigma”? The reason for conducting this research is because she wanted to explore the
reasons why proper mental health care and dealing with mental health is considered “white people
problems.” The purpose is to educate other Black Americans on why proper mental health care is just as
important as taking care of your body physically and it does not make you less of a person. The questions
asked if they acknowledged that the had mental health issues and if they had been diagnosed. Through
this research she has started a conversation in her small community on how to achieve mental health.

Aryssa Harris, Beloit College
Mentor(s): Dr. Rongal Watson, Assistant Professor, Department of Health and Society
Oral Presentation
Title: Mass Incarceration: Understanding the Disparate Impact on Black Males

The United States makes up 5% of the global population, but holds 25% of the global prison population.
Of the United States male prison population, 40% of individuals are black, despite only making up roughly
6% of the United States population. Mass incarceration is a large social issue in the United States. My
research focuses on how the policies implemented during the War on Drugs, particularly the years 1970–
2010, triggered mass incarceration and why these policies disproportionately impact my chosen
demographic, black males.

Hayley Haynes, Concord University
Mentor(s): Dr. Rodney Klein, Professor of Psychology, Concord University
Poster Presentation
Title: The Halo and Horn Effects: Making Judgments Without Awareness

The Halo and Horn Effects are cognitive biases in which people unknowingly make an overall judgment of
someone based on a single positive or negative aspect. For example, someone who is considered
attractive would be more likely to be described as smart, funny, and nice. The current research examined
the correlation between attractiveness, likelihood of criminal behavior, intelligence, happiness,
aggression, and safety. Based on the findings of past research, it was hypothesized that the more
attractive an individual is found, the more intelligent, happier, safer, less aggressive, and less likely to be
involved in criminal behavior they are found.

Anna Heinz, University of Minnesota
Mentor(s): Ann Masten, Regents Professor, Institute of Child Development
Oral Presentation
Title: Teacher Relationships in Children at Risk Due to Homelessness
Children experiencing homelessness face many adversities that can negatively impact their well-being. Because teacher-child relationships can support child resilience, I examined how sociodemographic risk was related to teacher-child closeness and conflict. Participants included 83 homeless caregivers (95% female; Mage = 30 years; 61% African American, and their 4- to 6-year-old children (54% male; 66% African American). Parents provided demographic information and teachers subsequently reported on their relationships with the children. Teachers reported more conflict with boys and more closeness for children with higher IQ scores. Overall, ten sociodemographic risk indicators did not predict teacher-child closeness or conflict. However, exploratory analyses suggest that parents less than 18 years of age at birth of first child unexpectedly was the strongest predictor of teacher-child closeness. Unsafe housing was the strongest predictor of teacher-child conflict. These findings highlight the importance of individual and contextual characteristics for teacher-child relationships, and thereby possibly school success.

Gabriella Hess, Harding University
Mentor(s): Brittany Blake, Family, and Consumer Sciences Department Chair
Poster Presentation
Title: Work Hard Play Hard: Child Life Specialists and Use of Play in the Hospital Setting

Play is crucial for a child’s development, especially for children in restricted settings, such as hospitals. However, play in the hospital setting is frequently overlooked, often to the child’s detriment. A survey was distributed to child life specialists to obtain quantitative and qualitative data regarding their perceptions of the importance of play and how they implement it in the hospital setting. Eighty-three participants answered the survey. Eighty-two out of eighty-three are child life specialists. One participant was a student and seventy-nine were Certified Child Life Specialists. Responses revealed that all of the participants believed play is important in the hospital setting. On a ten-point rating scale, with one representing “not important at all,” and ten representing “extremely important” all the answers fell in the seven to ten range.

Michael Hillyer, University of New Mexico
Mentor(s): Dr. Catherine Rhodes, Assistant Professor, Department of Anthropology
Oral Presentation
Title: An Assessment of Yucatec Maya Language Vitality in the 21st century

The Yucatec Maya Language is one of the most spoken indigenous languages in Mexico. Along with thousands of indigenous languages around the world, Yucatec Maya is experiencing an exponential loss of speakers. This paper is an initial assessment of the language situation of Yucatec Maya in the context of reversing language shift and language revitalization. Upon establishing a framework of assessment via literature on language shift, a review of national and local historical processes outlines movements that have culminated in a legitimization of Mexican indigenous languages. Through a review of literature, a contemporary assessment analyzes various factors that influence both a decline and a revitalization of the Maya Language in the 21st century. Technology is traditionally argued to be a negative influence on language maintenance, yet emerging practices in internet spaces offers a glimpse of emerging contexts of Yucatec Mayan use.

Zamzam Hufane, Washington State University
Mentor(s): Dr. Alexander Spradlin, Clinical Assistant Professor, Department of Psychology
Oral Presentation
Title: "Swiping to Relieve Stress? Understanding Tinder Use Among Undergraduates"

Mobile online dating applications have become popular with young adults seeking romantic partners, physical intimacy, and friendship. Tinder more specifically has quickly become one of the most popular mobile dating application used to meet people within the same proximity. To date, however, only a
handful of studies have examined the types of people using Tinder, their reasons for doing so, and the role of negative affect in this relationship. Using a large sample of undergraduates at a major US university, the purpose of the present study is to investigate the role that stress and stress management play in driving Tinder use. We hypothesize that people with higher levels of stress over the past week will be more motivated to use Tinder to cope with that stress, leading to overall greater Tinder usage.

Olson Humphrey, Castleton University  
Mentor(s): Dr. Justin Carlstrom, Associate Professor, Exercise Science Program Coordinator, Health Science Program Coordinator  
Poster Presentation  
Title: Knowledge, behavior and food choice in athletes and non-athletes: A survey of the nutrition of college students at Castleton University

Knowledge pertaining to nutrition might affect food choice, amount consumed and overall behavior around food. In this study, food choices of college athletes and non-athletes were analyzed using photographs and a self-administered paper and pencil questionnaire on: nutritional knowledge, attitude towards food, the likeliness of subject interest in learning about nutrition and general demographics (i.e. age, gender, college major, athlete or non-athlete). Research from this study reveals that college athletes and non-athletes’ share similar knowledge. Nutrition scale scores showed no statistical significance. The sample showed to be “interested,” or “very interested” in learning more about nutrition for a healthy lifestyle. From a perspective of health, colleges and universities should develop navigable programs to educate all students about proper nutrition and nourishment to maintain a healthy body. Key words: nutrition knowledge of athletes & non-athletes; college students’ & athletes’ knowledge of food.

Pauline Hunter, Talladega College  
Mentor(s): Dr. Temesgen Samuel, Department of Pathobiology, College of Veterinary Medicine, Tuskegee University,  
Poster Presentation  
Title: Detection of Intracellular Uptake of Nanomaterials by Flow Cytometry

Cancer is globally one of the leading causes of death, and colorectal cancer ranks among the top causes of cancer-related deaths in the United States. Nanoparticle usage as drug delivery systems is beginning to revolutionize the treatment of cancer. Nanoparticles have the ability to be modified so that they can carry drug cargoes to specific organs, tissues or cells. This could enable reducing of the effective dose and minimize side effects through a more targeted treatment approach. The objective of this research was to detect by flow cytometry if colon cancer cells and monocytic THP-1 could uptake certain nanomaterials. The uptake of the nanomaterials by the cells would indicate that if a nanoparticle is loaded with a drug and delivered into the body, it may deliver the cargo inside the cell, and would allow for a more precise drug delivery. In this study, the test cells were treated with either zinc oxide, silver, or eggshell nanoparticles. After a 24 hour incubation period, the uptake of particles was measured and analyzed by flow cytometry.

Syed Hussain, Marquette University  
Mentor(s): Dr. Jacob Rammer, Research Assistant Professor, Department of Biomedical Engineering  
Poster Presentation  
Title: Characterization of Wheelchair Propulsion Amongst Adaptive Sports Athletes Using a Markerless Based Motion Capture System

Athletic manual wheelchair users participate in adaptive sports and recreational programs, and often are used to supplement rehabilitative outcomes. Manual wheelchair use, however, involves substantial risk of injury, particularly to the shoulder, and likely this risk is amplified under the unique stresses of adaptive
Current literature has yet to provide a simplified, yet effective, method to analyze and train athletic wheelchair propulsion technique and biomechanics for adaptive sports participants. The purpose of this project is to assess key metrics of performance of athletic manual wheelchair users in Marquette University’s Athletic Human and Performance Research Center. This will be completed using SIMI makerless motion capture systems to characterize manual wheelchair propulsion in a sample population of lacrosse wheelchair athletes. Data has currently been collected, and analysis is ongoing.

Fatima Irfan, Concord University  
Mentor(s): Dr. Timothy Ruhnke, Asst. Professor, Dept. of Biology, West Virginia State University  
Poster Presentation  
Title: Continued taxonomic Investigations on cestode species of the Anthocephalidae

The rhinebothriidea genus Anthocephalum was erected by Linton (1890) for a single species from Bathytoshia centroura and as of the present houses 23 species. Collection of rays from the Pacific and Indian Oceans allowed for continued molecular prospecting for members of this genus. Thus far, 28S rDNA has been sequenced for cestode samples from the following host species: Anthocephalum gracile (type species) and Phyllobothrium foliatum from B. centroura, three Anthocephalum species from Maculobatis astra (CM03-82 and NT-100) and Pateobatis fai (NT-33) from Australia, in addition to two Anthocephalum-like species taken from Hemitrygon benneti (TW-18) from Taiwan, and Taeniura lymna 1 (BO-131) from Borneo. Sequence analysis has revealed the following that the species identified as Anthocephalum do in fact group with other species of Anthocephalum.

Jaimy Jabon, University of Massachusetts Boston  
Mentor(s): Amanda Tokash-Peters, PhD Candidate, Department of Biology  
Poster Presentation  
Title: The trans-generational quantification of Wolbachia and the microbiome within the mosquito Culex quinquefasciatus in Two Temperatures

Wolbachia is a bacterium found in the gonads, midgut, and salivary glands of several genera of mosquitoes and has been shown to reduce the replication of viruses in mosquito hosts, though recent research has shown that this inhibition may be temperature dependent. Culex quinquefasciatus were reared in a hot and cold temperature (30,ÑÉ and 23,ÑÉ respectively) for one generation in order to analyze the relative abundance of Wolbachia and the microbiome under controlled conditions. qPCR for wsp (Wolbachia-specific protein) was used to determine the relative abundances of Wolbachia across the temperature groups. V4 rRNA sequencing was also performed to characterize the microbiome. Our results indicate that there may be significant difference in Wolbachia abundance or microbiome composition dependent on temperature.

K’neadee Jackson, Johnson C. Smith University  
Mentor(s): Dr. Douglas Cooper  
Oral Presentation  
Title: The Working Student: The Effects of Employment in Academic Performance among Undergraduates

The study- The Working Student: The Effects of Employment in Academic Performance among Undergraduates investigated whether student employment affects academic performance at a Historically Black College. The researcher recruited 65 (47 females, 18 male) African-American undergraduate respondents taken from a survey sampling method via Qualtrics. Respondents indicated how many hours they worked per week and their GPA for the 2018-2019 school year. A regression analysis was conducted to respond to the following inquiry- How does employment effect undergraduates’ academic performance at an HBCU? Preliminary results suggest that student employment impact student success
among minorities. Implications of this study may provide further insight on how administrators in higher education can better support students who try to balance work and college.

Lemlem Jeldo, University of Minnesota  
Mentor(s): Dr. Renee E, Sieving, Professor, school of Nursing and Department of Pediatrics  
Oral Presentation  
Title: *Parent and Adolescent Perspectives on Confidential Adolescent Sexual and Reproductive Health Services*  
This study's purpose was to review empirical literature on parents' and adolescents' perspectives regarding confidential adolescent sexual and reproductive health services. Studies revealed parents and teens have opinions on adolescent preventive services, including sexual and reproductive health services. Several studies, parents and adolescents believed that private time for adolescents with their health care providers during clinic visits is important. However, parents and adolescents commonly thought confidentiality practice should begin during middle to late adolescence. Limitations of studies included in this review include: (1) parents who complete research surveys may not represent all parents of adolescents; (2) survey items are imperfect measures of underlying constructs. An implication for health care providers is to routinely discuss confidentiality, private time, and sexual health services starting during early adolescence.

Michael Jenkins, Idaho State University  
Mentor(s): Dr. Andrew Holland, Associate Professor, Department of Chemistry  
Poster Presentation  
Title: *Single-Source vs Multi-Source Approaches to Chalcopyrite Nanomaterials*  
Chalcopyrite nanomaterials have properties that make them promising candidates for photovoltaic and other semiconductor applications. A single-source method of synthesizing Cu(In/Ga)S2 chalcopyrite from (PPh3)2Cu(SR)2(In/Ga)(SR)2 has been shown to control stoichiometry, phase, and particle size. However, recent study of these precursor structures suggests that they readily dissociate in solution, calling into question the advantage of the single-source method for this target. Herein we describe side-by-side comparisons of the progress and products between the two routes. These studies aim to locate key commonalities and differences between the two routes, and to gauge the significance of specific thermolysis parameters such as thiolate group, phosphine, additives, and temperature. Reaction outcomes are evaluated to explore whether the single source method is preferable over the directly analogous multi-source route.

Alrick Johnson, Emporia State University  
Mentor(s): Dr. Lidan Fan, Asst. Professor, Department of Accounting, Information Systems, and Finance  
Oral Presentation  
Title: *Increasing Black Males' Success and Persistence in Computer Science*  
Increasing the number of black men who complete computer science programs at American colleges and universities is a policy imperative of national importance, one necessary in order to keep pace with a rapidly global and technological society. This study therefore analyzes the backgrounds and perspectives of black men at various PWIs. Utilizing a mixed-methods approach consisting of a survey and electronic interview, it assesses the following criteria: trust: the extent to which black men feel their professors and peers view them as able to perform on-level with the majority group; belonging: the extent to which black men feel represented, respected, and valued in their classes; and competence: the extent to which black men believe themselves able to do the work.
Mariama Kamara, Suffolk University  
Mentor(s): Sarah Mellen, Marketing  
Poster Presentation  
Title: *Race, Body Shaming, and the Pursuit of the Ideal in the Fashion Industry*

This study assessed how brands represent beauty in their advertising. The primary research instrument was a content analysis of clothing brands’ Instagram and websites the study's typography of how a brand markets itself and its target audience. The typography was created from the literature in women-centric marketing, the history of advertising and print media, and current trends in social media. This study found that patterns in branding demonstrate changes in the fashion industry’s emphasis on diversity, evidence of inclusion, and their notions of the “ideal” in the modern age, as well as the celebration of “unconventional” beauty, history and culture, race, and ideas of self-fulfillment.

Faith Kidd, Concord University  
Mentor(s): Dr. Darrell Crick, Associate Professor of Chemistry, Concord University  
Poster Presentation  
Title: *Bioactivity guided fractionation of Polygonum cuspidatum*

Polygonum cuspidatum is a large, perennial plant in the Polygonaceae family. The known biological activities include anti-bacterial, anti-inflammatory, immunosuppressive, antitumor, and anticancer which have been attributed to the compound resveratrol. The presence of additional, drug-like unidentified and known compounds are being investigated using bioactivity guided fractionation. Determination of bioactivity against human cancer cell lines MCF-7 (breast cancer) and JEG-3 (choriocarcinoma) and representative microorganism cell lines E. coli, Staphylococcus epidermidis, and Candida albicans is in progress.

Susan Kim, University of Colorado Denver  
Mentor(s): Dr. Peter Kaplan, Department Chair, Department of Psychology  
Poster Presentation  
Title: *Mode of Delivery, Breastfeeding Patterns, and Postpartum Depression*

The early relationship between mother and infant is affected by mode of delivery, with the surgical procedure of cesarean sections somewhat reducing the interactions between a mother and baby. It may also be associated with a lower probability of breastfeeding, which in turn may affect maternal mood. Postpartum depression (PPD) has been linked to delays in infant cognitive development. The relations were examined between mode of delivery, breastfeeding, PPD, and infant cognitive development in mothers and 4- to 14-month-old infants. This study surveyed 270 mothers to determine if there was an impact on breastfeeding and infant performance based on mode of delivery.

Britney King, University of North Texas at Dallas  
Mentor(s): Dr. Aubrey Frantz, Assistant Professor of Biology, Department of Liberal Arts & Science  
Oral Presentation  
Title: *In vitro effects of sodium nitrate on the human gut microbiota*

Sodium nitrate is a food preservative added to processed meats. Previous studies have indicated that consumption of nitrates is associated with cardiovascular disease and cancer. The FDA limits the amount of sodium nitrate in cured meats to 500ppm. Intestinal bacteria are exposed to nitrates after consumption. To investigate these effects on the gut microbiota in vitro, Escherichia coli, Salmonella enteritidis, and Lactobacillus acidophilus, were exposed to various concentrations of sodium nitrate for physiologically relevant time periods. We found that sensitivity to sodium nitrate was species specific and bactericidal activity was not observed at the allowable concentration for food preservation. Our results suggest that
certain bacteria can survive at the maximum allowable level; thus, sodium nitrate may pose a risk for dysbiosis and opportunistic infections.

Kyriessa Lane, University of Wyoming
Mentor(s): Dr. Patrick Konesko, Assistant Professor, Department of Theatre and Dance
Oral Presentation
Title: The Madness in the Method: Mental Health of Students and Faculty in Academic Theatre Programs

This study investigates the mental health of students and faculty engaged in academic theatre programs at the collegiate level to determine whether or not the workload of some students and faculty in these programs will have a negative effect on mental health. Surveys were conducted among faculty and students from the University of Wyoming, as well as other universities and community colleges in the Rocky Mountain region. Some questions were designed to gather data on participants’ views of their emotional and mental well-being. Statistical analysis was conducted at the end of the data gathering process. There is little research available on the mental health of individuals involved in academic theatre and its corresponding culture.

Emoni Lewis, Johnson C Smith University
Mentor(s): Dr. Tracy Brown-Fox, Assistant Professor of Organic Chemistry, Department of Natural Science and Mathematics
Oral Presentation
Title: Investigating Concentration Differences Through In Situ Polymerization of Polypyrrole with Cellulose Nanomaterials

Electronically conducting polymers, like polypyrrole (PPY), are commonly recognized as materials for energy storage devices, sensors, and ion exchange membranes. Cellulose has been widely used in conjunction with electronically conducting polymers to fabricate flexible energy storage devices with the possibility to develop flexible electronics. PPY/nanocellulose network composites can yield pore sizes in the range of nanometers, making them suitable targets for biocompatible conductors and biosensors. This work will discuss the in situ polymerization of polypyrrole through the adsorption of Fe3+ ions onto the surface of freeze-dried cellulose nanocrystals (CNC’s) at different concentrations. Preliminary results have already shown that there is significant adsorption of Fe3+ ions onto the cellulose nanocrystals, at different amounts based on the different concentrations.

Jaedah Lewis, University of Central Oklahoma
Mentor(s): Dr. Judith Wakefield,
Oral Presentation
Title: Unexpected Expectations for New Parents

The title of this project is “Unrealistic Expectations for New Parents”. The question that goes along with this project is “How does the pressure of society affect a new parents’ mental health and performance?” The problem is that there is so much scrutiny that a new parent faces that it hinders the way they feel about themselves and the way they perform is affected. It’s important to discuss this because if a solution arises, then it could help many new parents’ along their journey of parenthood without the struggle of depression and unrealistic expectations that are placed on them.

Esmeralda Lezama Ruiz, Marquette University
Mentor(s): Dr. Ed de St. Aubin, Associate Professor, Department of Psychology
Oral Presentation
Title: Gendered Racial Microaggressions & Coping in Black Women
This study was done to research stress, resilience, the well-being of black women in correlation to coping strategies. This research is a by-product of a larger project. The question at hand is: how do stress and microaggressions effect a black woman’s coping strategies? The purpose was to help identify different coping mechanisms and how coping is related to microaggression frequency and the appraisal of them. The problem is the stress and discrimination black women face daily in Milwaukee, WI. This research aims to connect these different topics with the evaluations of questionnaires on coping, gendered microaggression frequency, gendered microaggression appraisal and demographics.

Shannon Linch, University of Wyoming  
Mentor(s): Dr. Karen Mruk, Professor, Neurology  
Oral Presentation  
Title: **Optimization of GAVPO for Zebrafish Study**

“LightOn” gene expression system uses “GAVPO” which is activated with UV-blue light. Recent publications observed the detrimental effects that white LED (primary blue light) has on zebrafish embryo’s growth and development. This project will determine the balance of UV-blue light between optimizing GAVPO expression and the lowest possible impact on zebrafish development. 24hpf embryos will be treated with blue or white UV lights at varying intensities and derivations of time to collect data on the mortality, deformations, and hatch rates and compared to the maximum amount of fluorescence proteins expressed by GAVPO. The data collected from this project will characterize the LightOn transgene system for further optimization of optogenetics in zebrafish.

Erney Lorquet, Florida International University  
Mentor(s): Dr. Stephen Winkle, Associate Professor, Department of Chemistry and Biochemistry  
Poster Presentation  
Title: **The Effect of RNA polymerase T7 and antimalarial drug DB 75 on the conformation of DNA examined by Restriction Enzyme Activity**

RNA polymerase T7 and antimalarial drug DB75 are compounds that alter the conformation of DNA through groove binding on the molecule. The property of groove binding to a DNA molecule contributes to the effectiveness of these compounds. In this study, the alteration of restriction enzyme activity was used to determine the effect of RNA polymerase T7 and antimalarial drug DB75 on the conformation of φX174 DNA. To figure out the effect of DNA sequence and topology on the binding properties of these compounds, four restriction enzymes with varying sequences flanking the enzyme cleavage sites were performed with a mix of supercoiled and relaxed φX174 DNA. Observations through the technique of gel electrophoresis determined whether inhibition and enhancement are apparent of supercoiled and relaxed φX174 DNA.

Melody Mann, San Jose State University  
Mentor(s): Dr. Sylvia Branca, Adjunct Lecturer, Lurie College of Education  
Poster Presentation  
Title: **Teacher Response to Child Noncompliance in Early Care Settings**

This research will examine how teachers respond to children displaying noncompliance in early care settings. This observational study will focus on the moment to moment interactions that occur within the preschool classroom between child and teacher. It is predicted that children who display noncompliant behaviors in a structured preschool setting will affect teacher response. The teacher will use responsive or restrictive language to either address the behavior indirectly in a classroom or directly to the child. By utilizing an observational rubric, I will quantify the occurrence of teacher responses to find frequencies
among the data. The goal of this to form a quantifiable representation of the impact child behavior has on teacher interaction in the early care setting.

**Courtney Mann**, University of Central Missouri  
Mentor(s): Professor Cassandra Dawn Pauling, Biology Instructor, School of Natural Sciences  
**Poster Presentation**  
**Title:** Fecal Parasite Identification Via Microscopy in Alaskan Wood Bison, *Bison bison athabascae*, Following Reintroduction

The wood bison, *Bison bison athabascae*, is a threatened species of Alaska and has been the center of reintroduction efforts. Population decline remains a concern, necessitating an ongoing need to understand parasitic infestations. Parasite infestations can cause anorexia, immune depression, and lack of feed efficiency leading to population decline. In this study, twenty-four bison fecal samples were examined in UCM's parasitology laboratory. Microscopy was utilized to identify parasite genera and perform fecal egg counts using the modified McMaster method. Giardia (96%), Eimeria (100%), Moniezia (25%), Capillaria (29%), and Strongyloides (8%) were observed. An ANOVA showed a significant difference among the parasitic genera. Identifying the parasites prevalent in the reintroduced Alaskan wood bison herd will allow for an increased understanding of parasitic influence on population decline.

**Esteban Marte**, Suffolk University  
Mentor(s): Dr. Celeste Peterson, Biology  
**Poster Presentation**  
**Title:** Regulation of RpoS through RbsD

RpoS is the master regulator of stationary phase in bacteria. In response to stress, RpoS protein accumulates and turns on stationary phase which makes the cells go dormant and provides protection. When in this dormant stage, the cells are more virulent and able to evade a host's immune response much more readily. They are also more likely to be resistant to antibiotics. Currently overexpression of the ribose metabolism gene rbsD has been shown to lower RpoS levels. In addition, the presence of ribose lowers RpoS levels. Using a beta-galactosidase assay and Western blot analysis, this research aims to shed light on stationary phase and antibiotics resistance.

**Danilo Martinez**, Suffolk University  
Mentor(s): Dr. Katrina Graham, Management and Entrepreneurship  
**Poster Presentation**  
**Title:** Social Media Marketing: What can MAKE or BREAK your small business?

Given how imperative social networks are to the success of companies in the market environment, I examine the underlying factors that can make or break social media marketing for small businesses. There will also be a discussion on how important it is for small businesses to build on the resources including diversity, third-party connections, and digital marketing strategies. 200 small business owners will be surveyed for research and analysis on their social media marketing. The objective is to fulfill the gap clarifying the relationships that lead to successful social media marketing for small businesses. The paper also focuses on challenging the idea that the external environment affects success. Here, we believe that the lack of resources the small business may have plays a larger role.
Impulsive choice behavior can be characterized by choosing smaller, sooner rewards (SSR) over larger, later rewards (LLR). Chronic exposure to delayed rewards can increase choice for LLR in rats. In the present experiment, we tested if acute exposure to delayed rewards can increase choice for LLR. Lewis rats were exposed to 20 trials of delayed reward (30 s) prior to a delay discounting task every day. This was compared to a control group that received 20 food rewards immediately prior to each discounting session. Results indicated that acute delay exposure may not reduce impulsive choice like chronic delay exposure has been shown to.

Brenda Martinez-Flores, Beloit College  
Mentor(s): Dr. Kristin Labby, Assistant Professor, Department of Chemistry  
Oral Presentation  
Title: Solving the Antibiotic Crisis with Soil

Antibiotics are molecules that kills or inhibits the growth of bacteria. Penicillin was one of the first antibiotics discovered and saved over millions of people from infections. After the discovery of penicillin other antibiotics were discovered and saved millions of lives. But overtime antibiotics were abused, in the past decade antibiotic resistance has increased and the effectiveness of antibiotics have decreased. In the US, 2 million people get antibiotic-resistant infections and at least 23,000 people die annually (CDC, 2019). There has been a decrease in developing new antibiotics in the past decade. In order to aid the antibiotic crisis, we are currently facing, the Tiny Earth community is finding antibiotics produced by bacteria in the soil. The Tiny Earth community developed a research sequence that undergraduate students can use to find, isolate and characterize antibiotic-producing bacteria and the antibiotic molecule. Using the research sequence our research team found 56 antibiotic-producing bacteria.

Tinina McCourt, Concord University  
Mentor(s): Dr. Tracy Luff, Professor of Sociology, Concord University  
Poster Presentation  
Title: Online Dating in the LGBT Community: an Analysis

This exploratory research analyzes the dynamics of online dating in the Appalachian LGBT community. In this qualitative study compiled of literature review and information provided via interview questionnaires, we can see how dating online in the LGBT (Lesbian, Gay, Bisexual, Transgender) community widely varies from dating in the dominant heterosexual community. It was found that dating online for these individuals can be unique because of various social contexts implied among same-sex couples in a queer community. This research can be useful for having a better understanding of why LGBT adults may have different reasons for dating online.

Baylee McKinney, Concord University  
Mentor(s): Dr. Rodney Klein, Professor of Psychology, Concord University  
Oral Presentation  
Title: Group sizes and its impact on decision making and problem solving

The purpose of this study is to determine whether individuals, small, or large groups perform more accurately on the decision making task and/or more efficiently on the problem solving task. In the current study, decision making will be examined using a marble estimation task, and problem solving will be examined using a triangle puzzle task. I hypothesize that performance will be determined by the size of the group with the large group performing better than the smaller groups on both tasks and both sizes of groups outperforming the individuals. The pattern of results will be interpreted in regards to workplace productivity, decision making efficiency, and save valuable human resources.
Kayla Medina, University of Colorado Denver
Mentor(s): Dr. Chris Miller, Associate Professor, Department of Integrative Biology
Poster Presentation
Title: Understanding the Association Among Environment, Microbiome, and Golden Retriever Health

Golden Retrievers across the United States suffer from increased adverse health outcomes due to obesity. However, there has not been a further study of the link between environmental factors such as diet and microbiome, and how that might affect dogs who suffer from an adverse health outcome. Given the fact that there is a strong association between microbiome and body condition in humans and mice, we hypothesized that there is a relationship among diet, microbiome, and adverse health outcomes in dogs. To begin to explore this hypothesis, we utilized 16S rRNA sequencing method. Our initial work highlights that environmental factors.

Savannah Melher, University of Central Oklahoma
Mentor(s): Dr. Mary Carver, Assistant Professor/ Chair of Mass Communications
Oral Presentation
Title: Reporting and Race: The Criminalization of Black America

The purpose of the study was to further scholarly research regarding depictions of race and the media. Framing studies primarily focus on politics and how news stories in favor of one candidate over another can be a tool for gaining political preference. The same can be concluded after considering race in print media. I reviewed the issue of stereotyping people of color as criminals or victims in Oklahoma’s print news coverage from January to March for the years 2019 and 1989. Specific categories within news stories were coded; I focused on race, gender, indicator, and the crime/victim. The results of the content analysis produced an overwhelming percentage of news reports focusing on black males as murder perpetrators. When compared to local statistics, The Oklahoman reported significantly more on black man than the average amount reported in 2018 crime reports.

Heather Mellis, Lee University
Mentor(s): Dr. Bryan Poole, Assistant Professor of Psychology, Department of Behavioral and Social Sciences
Poster Presentation
Title: Hashtag Thriving: Religiosity in Congruence to Flourishing

The PERMA model (Seligman, 2012) defines a holistically well person as possessing positive emotion, engagement, relationships, meaning, and accomplishment. One’s overall well-being has been reported to produce a positive relationship when measured alongside religion (Cohen, 2002; Francis, Tekke, & Robbins, 2016; Myers, 2008). In the current study, 103 participants responded to a survey via Amazon’s Mechanical Turk (MTURK). The survey assessed participants’ flourishing and religiosity using the 23-item PERMA-Profiler and the Gorsuch Intrinsic/Extrinsic Religiosity Scale. The researcher concluded intrinsic religiosity was related to higher levels of overall well-being. The current study supports past research of religiosity and well-being as religion contributing to one’s overall sense of well-being.

Aracely Mendoza, Washington State University
Mentor(s): Dr. Anne Pisor, Assistant Professor, Department of Anthropology
Poster Presentation
Title: What does it mean to be Latinx in the contemporary U.S.?

What predicts whether Latinx cultural practices persist or disappear? To answer this question, I conducted ethnographic interviews with 20 individuals who identified as Latin American heritage, hoping
to find out how much they were aware of traditions in countries where their families live and whether they plan to practice them. What I found, however, were differences in experience and identity. Some participants identified as Latino/a or Chicano/a instead of Latinx. When many participants talked about their identity, themes of class and race emerged. I learned that to understand the perpetuation of Latinx culture, I have to study the experience of being Latinx. In my future work, I will explore whether themes that emerged from these interviews to structure daily interactions in Latinx communities.

Veronica Mixon, University of Alabama at Birmingham
Mentor(s): Dr. Olivio J. Clay, Associate Professor, Department of Psychology, AND, Dr. Pamela Bowen, School of Nursing
Oral Presentation
Title: System Level Policy to Promote Physical Activity Discussion with Black Patients.

Lack of physical activity (PA) is a major issue that contributes to chronic diseases and an increased risk of cognitive decline and dementia. This study aimed to determine if a policy to increase physician communication translated into an increase in the occurrence of PA discussions. For this investigation, 109 Blacks (24-81) were recruited at Cooper Green Mercy Health Services. At baseline, 43.6% of patients reported having a conversation about PA with their provider and this increased to 70% post-intervention, p<.05. At 12-months, the percentage decreased to 36.6%. The results provide evidence that system-level policies can potentially lead to a reduction in health disparities. The increase in PA discussions was not maintained, showing that the policy must be enforced over time to yield consistent results.

Zarnez Montgomery, Harding University
Mentor(s): Dr. Terry Smith, Chair of the Psychology Department
Poster Presentation
Title: Here’s the Tea: The Challenges Faced by African American Female Faculty in Predominantly White Christian Institutions

Studies have shown that more diversity can contribute to a more well-rounded university population and can lead to less discriminatory acts on campus (Vanalstine, 2015). There is a lack of diversity regarding race and gender in higher education, specifically at religiously rooted, predominantly white institutions (PWI’s) (Kim, 2010; Rowatt, 2004). This study focused on Black female educators in PWIs and the challenges they have faced.
The data was collected by interviews with African American female faculty who are all professors in PWI’s. The years of experience or exact major was not taken as a requirement to be interviewed. The participants were from five predominantly white Christian institutions (PWCI’s), representing five states.

Kilinoelani Montgomery, University of Colorado, Denver
Mentor(s): Dr. Emilie Guidez, Assistant Professor, Department of Chemistry
Poster Presentation
Title: Computing host guest free binding energy with a new combined QM-MM Mining minima method

Some drug molecules are hydrophobic, therefore insoluble in the human body. Drug carriers have hydrophilic and hydrophobic character, therefore drug molecules can be encapsulated in these systems which improves their solubility in and bioavailability as they travel to the target site. Since drugs are bound to the carrier through noncovalent interactions, the binding energy between them is difficult to predict accurately. The VM2 software utilizes molecular mechanics (MM) methods to predict the binding energy between a host (drug carrier) and a guest (drug). Molecular mechanics models are computationally fast and inexpensive, they are not as accurate as quantum mechanical (QM) methods. A combination of QM and MM is important to develop accurate yet cost beneficial software. The QM-VM2 scheme searches for
host-guest conformers using an MM mining minima method, then runs QM calculations to get accurate free binding energies. The resulting software will aid drug developers and minimize computational cost.

**Neema Moore**, University of North Texas at Dallas  
Mentor(s): Dr. Jesseca Lightbourne, Assistant Professor, Department of Public Leadership  
Oral Presentation  
**Title:** A Blind Eye to Black Women: A Quantitative Analysis of Homelessness Among African American Women

While much has been written about the determinants of homelessness among youth, men and families (Burt, 1992; Fargo et al., 2013; Fitzpatrick et al., 2011; Kim et al., 2010; Lee et al., 2003; Main, 1996; Tyler et al., 2010), there is little attention placed on the link between homeless women and its long-term effect on community development. The objective of this research is to examine the degree of vulnerability of community resources, which addresses why some communities experience a higher incidence of homelessness than others. Using regression analysis, we hypothesize communities that experience higher levels of homelessness are likely to have a deficit in resources directly for women, while areas with low or no levels of homelessness have direct resources to address homelessness.

**Alexander Morales**, University of Colorado Denver  
Mentor(s): Dr. Carly J. Leonard, Assistant Professor, Department of Psychology  
Oral Presentation  
**Title:** The Relationship between Eye Movements and Working Memory

Visual working memory (VWM) refers to a component of short-term memory responsible for maintaining visual information for a brief duration after stimuli disappears. The research focuses on non-instructed eye movements and their influence on performance. The participants performed a computerized task where two, four, or six differently colored squares appeared in multiple locations for 200 milliseconds. The squares then disappeared, and one square reappeared. The participants reported if the square matched the color of the previous square at that location. Participants displayed significantly fewer non-instructed eye movements throughout the delay period for accurate than for inaccurate trials. Thus, the data supports previous research identifying an association between eye movement generation and successful VWM maintenance.

**Yoojyim Moua**, University of Minnesota - Twin Cities  
Mentor(s): Dr. Daheia Barr-Anderson  
Oral Presentation  
**Title:** Measures of Physical Activity Among Children

Physical activity measurement tools are essential for professionals to evaluate and assess physical activity engagement levels of different populations. The two main categories of measurement tools are objective and subjective. Both types of tools yield different findings, qualitative and quantitative, that can be useful to professionals. Various instruments can also increase awareness of sedentary behaviors among individuals. The goal of this project was to assess and analyze different physical activity measurement instruments, with an emphasis on physical activity logs and accelerometers, among children. Participants were asked to wear accelerometers during waking hours for 8 days. Simultaneously, participants completed a physical activity log that detailed when they wore/took off their accelerometer, what activities they were doing, and if they were completing the activities with an adult. Data from physical activity logs were transferred, cleaned, and coded.
Oral and Poster Presentation Abstracts Listed Alphabetically by Last Name
Poster Presentations, Oct. 3, SUB Atrium (schedule is on pages 10 – 14)
Oral Presentations, Oct. 4, SUB Top Floor (schedule is on pages 15 – 26)

Alexis Nealy, Talladega College
Mentor(s): Dr. James Morris, Department of Genetics and Biochemistry, Clemson University
Oral Presentation
Title: Generating RNA Interference Vectors for Use in Trypanosoma brucei

Trypanosoma brucei is a parasitic protozoan which causes African sleeping sickness in humans and nagana in cattle. In the gut of the tsetse fly vector, the bloodstream lifecycle stage of the trypanosome differentiates into procyclic forms. As part of this developmental step, the trypanosome sheds its glycoprotein coat and replaces it with a new coat consisting of millions of procyclin molecules. Procyclin is anchored to the cell surface of fly gut epithelium by glycosyl phosphatidylinositol anchors. Additionally, procyclin is noted for containing repetitive regions of protein sequences, being largely made up of glutamic acid and proline residues. To that end, we have cloned a 102 bp fragment of the EP procyclin gene into the pGEM vector and confirmed its identity by sequencing. This fragment has been excised from pGEM and will be cloned into pZJM, a vector used for RNAi in trypanosomes. By manipulating EP procyclin expression and then assessing the impact of this manipulation on signaling cascades initiated when the parasite binds to various ligands, we anticipate improving our understanding of environmental perception in the parasite.

Ianna Oatis, University of Minnesota Twin Cities
Mentor(s): Dr. Yuichiro Onishi, Associate Professor, Department of African American and African Studies, Asian American Studies Program
Oral Presentation
Title: Understanding the Higher Education Movement: Making Connections between Race, Universities, and Historical Injustices

The conversation around race and higher education has been a subject of much debate and contention in recent years. Student protests across the country have challenged administrations to confront head on institutional histories and their ugly racial pasts. This project works to not only contextualize the origins of contemporary conversations around historical injustices, but also connect racial injustices of the past to the present. This research is guided by the following central question: why is the higher education movement gaining traction now?

Savanah Ontiveros, Montana State University - Bozeman
Mentor(s): Dr. Benfang Lei, Lab PI and Professor, Microbiology and Immunology
Oral Presentation
Title: The Roles of the speB Locus of Group A Streptococcus in Throat Colonization, Neutrophil Response, and Infection of Cultured Human Epithelial Cells

Previous studies found high expression of protease SpeB in wt GAS to be associated with clearance in alveolar infection. Decreased SpeB levels in GAS2740 (with mutation at previously unrecognized myr), permit tissue invasion in alveoli and bronchioles of wt and neutropenic mice, respectively. Attainment of ΔspeB and ΔimyrΔspeB mutants were inoculated intratracheally into wt mice, leading to pulmonary infection with decreased neutrophil numbers in ΔimyrΔspeB only. Wt GAS caused increased throat colonization compared to ΔspeB and ΔimyrΔspeB after intranasal inoculation. Lastly, invasion of ΔspeB was decreased 10-fold in cultured A549 human epithelial cells compared to wt GAS. Results suggest that SpeB positively contributes to epithelial invasion and oropharyngeal infection. Additionally, myr expression acts as an agonist in enhancing localized neutrophil activity as illustrated in vivo.
Muna Osman, University of Minnesota
Mentor(s): Dr. Richard Lee, Distinguished McKnight University Professor, Department of Psychology
Oral Presentation
Title: Educating Somali Parents on Healthy Child Development through m-Health Communication

This study examines the feasibility of implementing a low cost and personalized m-Health communication system that educates Somali parents on healthy child development. Fifty Somali parents were recruited from a community health clinic to receive health messages regarding parent-child relationships, child nutrition, maternal self-care, and child health. The messages were sent to parents in the form of SMS audio message or voicemail three times a week for six months. The messaging period was recently completed, and researchers are currently conducting parent interviews to identify key themes from the implementation of this messaging system. Preliminary qualitative analysis of three post intervention interviews revealed that parents viewed the messages positively, utilized the information embedded in the messages, understood the content of the messages, and replayed the messages.

Hannah Oxford, Beloit College
Mentor(s): Dr. Pablo Toral, Professor of Political Science, Environmental Studies, and International Relations
Oral Presentation
Title: This Is Every Day: The Daily Life of the Boundary Waters’ Mining Debate

This study investigates how individuals and communities make meaning of environmental crises in their everyday lives. Focusing on the boundary waters region in northern Minnesota in the U.S. and Quetico, Canada, I investigated how communities came to understand and make decisions about the use of their natural resources. Current and historical debate concerning resource usage within the boundary waters centers on whether extractive industries, most notably mining, should be allowed to operate within the boundary waters region. Emerging from this multidimensional issue, testimonials suggest that these individuals understood natural resources as a means of survival but diverged in their understandings of immediacy and scope. Further, this case serves as just one example within a much larger global contention between natural resource management and development.

Santiago Pacheco, University of New Mexico
Mentor(s): Dr. Steven Verney, Associate Professor, Department of Psychology
Oral Presentation
Title: Language and Categorization Effects on Cognitive Processing in Hispanic and Non-Hispanic White College Students

This study will examine the differences in categorization thinking styles between Non-Hispanic White and Hispanic students in the southwest. The two types of categorization styles include taxonomic, grouping objects together on the basis of an object’s attributes, and thematic, grouping objects together on the basis of causal, spatial, and temporal relationships. Participants will complete questionnaires assessing demographic and acculturation information, and a Triad Categorization Task which will determine categorization style when cognitive thinking styles conflict. Based on previous research by Ji, Nisbett, and Zhang (2004) that demonstrated that East Asians were more likely to use the thematic approach, we hypothesize that Hispanics will choose thematic categorization because the Hispanic culture involves a community-based environment like that of Eastern Asian cultures.

Esmeralda Paez, Wichita State University
Mentor(s): Dr. Patricia Self, Associate Professor for the College Of Health Professions.
Oral Presentation
Title: Caregivers’ Perceptions of an Interprofessional Structured Learning Program (iSLP)
Interprofessional education (IPE) is an effective method used to teach pre-professional students the strategies for collaborating with other disciplines. The purpose of this pilot project was to obtain caregivers' perceptions of their child's experiences after participating in an Interprofessional Structured Learning Program (iSLP) conducted at WSU's Speech-Language Hearing Clinic. Parents of children who had completed the iSLP program were interviewed via a semi-structured interview. Interviews were transcribed and coded via open and selective coding data analyses. The results of this study show that caregivers of the children appreciate the interprofessional nature, as it allowed them to be involved, have full support, and gain knowledge. IPE provided the caregivers with a positive impact on their child's future, and reduced worry for their future.

Eunice Partida-Castillo, Beloit College  
Mentor(s): Dr. Charles Westerberg, Professor Department of Sociology  
Oral Presentation  
Title: Understanding Latinx Capital Through the Eyes of Fourth Grade Educators

The rise in the Latinx population makes it critical to understand their experience in the public-school system. Through the use of oral histories, three fourth grade teachers were interviewed about their experiences in a school district. Using grounded theory, these oral histories were put in conversation with each other to understand the experience of Latinx fourth graders. Capital was used as basis for understanding how the Latinx student experience, who possessed capital, what capital reinforced, and how teachers play roles in both became increasingly important. In this specific case study, it became clear that capital can only be exchanged if all parties have access to it. Which gives importance to having educators who have cultural understandings of the groups that they are teaching.

Brittney Perez, Lee University  
Mentor(s): Dr. Summerlin, Dr. Donna Summerlin, Chair, Department of Language and Literature, Professor of English  
Oral Presentation  
Title: Why Johnny Doesn't Write

Author Rudolth Flesch recognized the epidemic between students and the lack of reading skills. However, Flesch did not blame the students or a lack of ability or intellect. Instead, he called attention to the method by which students were being taught to read. Flesch published his thoughts in his book, Why Johnny Can’t Read, and he brought awareness to the way students are being taught. It’s not a lack of ability that hinders students from becoming successful readers and/or writers just as it is not a lack of ability that hinders students from being great writers. This paper focuses on a particular strategy to hopefully resolve or improve the barrier between students and writing. Expressive writing is a powerful form of writing that could relieve anxiety, lessen the need for punishment, improve test scores, and improve student learning overall. If it is implemented correctly, it could change classrooms and the way students feel about writing.

Moises Ponce, Lee University  
Mentor(s): Dr. Jason Schmurr, Associate Professor of Mathematics, Department of Mathematics  
Oral Presentation  
Title: Quest for the Mathematically Ideal Font Using Principal Component Analysis

Does the perfect font exist? Most of what we read nowadays is on an electronic screen. Whether it be a computer, smart phone, tablet, or other accessories, much of our daily readings are through these mediums. There is quite a bit of variation in this plethora of fonts and it can be difficult to differentiate between them all and decide which is most readable and aesthetically pleasing. The goal of this project is to identify characteristics of fonts that make them pleasing or effective in various contexts, and then
leverage that knowledge to design better fonts. This will be done primarily using the statistical method known as Principal Component Analysis.

**Alexandra Quinn**, University of Wyoming  
Mentor(s): Dr Matt J Gray  
Oral Presentation  
**Title:** *Evaluation of the Degree to which Emotional Intelligence Predicts Bystander Behaviors*  

Sexual violence is alarmingly high on college campuses. The purpose of the current study is to examine the relationship between emotional intelligence (EI) and bystander behaviors, efficacy, and intentions. The current study was designed to better understand the factors (e.g. empathy, EI) among bystanders in potential sexual assault situations. Previous research has highlighted the importance of the presence of bystanders who, by their presence and actions, may be able to help deter sexual violence. Analyses support that emotional intelligence does have a statistically significant contribution to the prediction of bystander efficacy and intent. Empathic responding does not statistically mediate the relationship between emotional intelligence and past bystander behaviors, efficacy, or intent.

**Sana Rahim**, San Jose State University  
Mentor(s): Dr. John Marlovits, Lecturer, Department of Anthropology  
Poster Presentation  
**Title:** *San Jose’s Tiny Home Movement: A Study of Homelessness in Silicon Valley*  

Many U.S. cities have systematically rid themselves of informal homeless settlements in the past (might this sentence be too general?) However, the City of San Jose is expanding the limits of urban place-making and taking the initiative to utilize tiny homes for efficiently and economically sheltering the unhoused. Assembly Bill 2176, signed by Governor Jerry Brown in 2016, has allowed San Jose to bypass the state’s building codes and become the first city in California to build tiny homes for rapid rehousing. In this ethnographic study, I will observe how non-profit actors, government entities, and tiny home residents challenge existing housing infrastructure, engage with inclusionary and exclusionary practices, as well as inform policy.

**Allysia Rainey**, University of Oregon  
Mentor(s): Dr. Jennifer Pfeifer, Professor, Department of Psychology  
Poster Presentation  
**Title:** *The Association between Socioeconomic Status and Depression in Adolescent Females*  

Previous literature has shown that parental socioeconomic status during adolescence is associated with internalizing symptoms and behavioral problems. In addition, research has found that females are at the highest risk for maintaining severe symptoms. The purpose of this study is to replicate these findings and propose ways in which these issues may be addressed. In this study, we will look at the correlation of socioeconomic status and depression in adolescent females. The data will be pooled from variables measured in the Transitions in Adolescent Girls (TAG) study. Mental health was measured using the CES-DC. Socioeconomic status was measured by a demographic questionnaire and the MacArthur Scale of Subjective Social Status. A hierarchical regression analysis was used to analyze the data while controlling for age.
Meghan Ramirez, University of Oregon
Mentor(s): Dr. Christina Karns, Psychology Dept. and Dr. Melissa McCart, Center on Brain Injury Research and Training (CBIRT)
Poster Presentation
Title: The Effects of Naturally Occurring Sounds on the Stress Response

Stress is a major contributor to health crises. The aim of this proposal is to understand the mechanisms through which the acoustic environmental influences stress and emotions. I will conduct a systematic literature review of the relationship between autonomic nervous system engagement and measures of stress, focusing on the influence of the acoustic environment on physiology. I expect that measures of parasympathetic and sympathetic activity will emerge as important measurements of stress that are modulated by the environment. Furthermore, I expect that exposure to natural sounds will reduce stress responses during physical and psychological stress. Designing an acoustic environment to include natural sounds to reduce stress could be applied healthcare, psychiatry, and educational settings.

Isabel Rangel Hernandez, San Jose State University
Mentor(s): Dr. Rebeca Burciaga, Associate Professor, Department of Educational Leadership & the Department of Chicana and Chicano Studies
Poster Presentation
Title: CSU Resources for Undocumented Students Post-DACA Recindment

Now that DACA has been rescinded, the benefits offered to undocumented, AB540, and DACA students at many California State Universities has varied between prepared and unprepared resource. This research state the legislative and campus assistance that California offers undocumented, AB540, and DACA students. I will explore the different experiences of undocumented, AB540, and DACA students and their various approaches to utilizing resources that are provided at a California State University. The goal of this study is to assess the effectiveness of these programs in order to provide suggestions for improvements to resources that can help these students graduate from a CSU. My research will identify the experience of undocumented, AB540, and DACA students in California through testimonies from students who are attending San Jose State University (SJSU) in order to examine their individual stories, academic retention, and their motivation toward graduation.

Skylar Ratcliffe, St. Lawrence University
Mentor(s): Dr. Danny Crytser, Visiting Asst. Professor, Department of Mathematics
Oral Presentation
Title: An Expository Look into the Banach-Tarski Paradox

The Banach-Tarski Paradox is the division of a solid ball into several pieces which are then cleverly rearranged via rigid rotations to form two solid balls, each identical to the first. This doubling of volume which occurs contends with intuition, and seemingly the first law of thermodynamics, despite having a mathematical proof. This proof utilizes concepts such as group theory and matrix multiplication. Inspired by Tom Weston’s paper on the subject, this presentation will provide an introductory look into the Banach-Tarski Paradox for those with little mathematical experience, with particular emphasis on the proof of Banach-Tarski on the free group on two generators.

Eden Riggs, Concord University
Mentor(s): Dr. Adriana Falco, Assistant Professor of Psychology, Concord University
Poster Presentation
Title: The Relationship between Depression, Stress and Substance Use in College Students
College students show statistically lower self-esteem and higher stress levels which can increase major depression symptoms. This can cause a student to become more susceptible to peer pressure leading into possible substance use. The three main factors that will be examined in this study are the correlation between substance abuse and stress and depression in college students. The participants will consist of 50 college students that will take inventories in a one-on-one interview setting. The inventories consist of the Perceived Stress Scale, the Brief Screener for Alcohol, Tobacco, and other Drugs, and the Major Depression Index.

Kimberly Rivera, University of New Mexico
Mentor(s): Dr. Noah Painter Davis, Associate Professor, Department of Sociology
Oral Presentation
Title: Sentencing Outcomes Between White-Collar Defendants and Those Convicted of Street Crimes

This research project uses 2012-2016 Pennsylvania Commission on Sentencing data to compare sentencing outcomes between white-collar and street crime defendants. The study advances research in two ways. First, I examine sentencing patterns using contemporary data. Although white-collar defendants were treated with more leniency in the past, public opinion has recently shifted towards supporting more punitive punishments for white-collar offenders. Thus, it is important to re-examine sentencing patterns among this population using contemporary data. Second, I examine whether any observed differences in sentencing depend on whether white collar crime is operationalized using an offense-based definition or is defined as occupationally-related crime. Logistic regression analysis is used to examine the decision to incarcerate, while ordinary least squares regression is used to examine sentence length.

Natalie Robertson, Suffolk University
Mentor(s): Dr. Maghnus O'Seaghdha, Biology
Poster Presentation
Title: Rate of Escape of Group A Streptococcus from Within Host Cells

Streptococcus pyogenes (GAS) is an opportunistic human pathogen that can cause a wide array of diseases; these range from strep throat to more severe diseases such as necrotizing fasciitis. One mechanism by which GAS is proposed to evade antibiotic killing is by internalization of host cells. The goal of this project is to investigate the internalization of GAS in human throat cells, with a focus on their subsequent egress from within those cells. A bacterial egress assay was developed, and the data reveal that egress occurs rapidly in the experimental setup. Our preliminary findings suggest that egress is steady over time and this observation may shed light on our understanding of how antibiotic-sensitive GAS remain viable despite antibiotic use.

Kim Rogge-Obando, University of New Mexico
Mentor(s): Dr. Benjamin Clark, Assistant Professor, Department of Psychology
Oral Presentation
Title: Investigation of Corticotrophin Releasing Factor in the Subiculum of the TgF344 Rodent Model of Alzheimer’s Disease

Approximately 5.8 million Americans are living with Alzheimer’s disease (AD). AD symptoms include neurosis, plaques, and tangles. Research suggests that stress accelerated plaques and tangles; however how AD disrupts the stress circuit needs further investigation. This study examines corticotrophin releasing factor (CRF), a biological response in the stress circuit, in the subiculum of the TgF344 AD rodent model. Brain tissue from chronically stressed rats will be stained for CRF and cell counted. It is anticipated that there will be an elevated amount of CRF in the TgF344 for the stressed and non-stress
Elevated CRF is speculated to be involved with anxiety and depression. Therefore an increase of CRF in the stress circuit may indicate anxiety and depression as a behavioral marker to AD pathology.

**Louis Romska**, Harding University  
Mentor(s): Dr. Terry Smith, Chair of the Psychology Department  
Poster Presentation  
Title: *The Old and The Restless: A Comparative Analysis of Traditional and Greenhouse Model Nursing Homes*  
This study will examine how two different nursing home types, the medically focused institutional model and the greenhouse model, affect the retention rates for staff. Staff turnover rates are higher in nursing homes than in other healthcare facilities (Tilden, Thompson, Gajewski, & Bott, 2012; Trinkoff, Han, Storr, Lerner, Johantgen & Gartrell, 2013). There has not been extensive research done on whether the type of nursing home impacts staff retention rates. This research seeks to provide additional foundational knowledge of this topic for policymakers, health care professionals, families and advocates for the elderly, and other stakeholders.

**Jorge Rubio**, University of Northern Colorado  
Mentor(s): Dr. John Ramsey, Professor, Department of Philosophy  
Oral Presentation  
Title: *Convention and the Normative Structure*  
The relationship between social and moral norms is often unclear because the role conventions play in making both types of norm concrete is poorly understood. I argue for a model of moral and social normativity that clearly distinguishes between these different types of norms and that clarifies the relationship between conventions and norms. There are a number of explanatory benefits of this model, including an explanation of why cultural relativism seems plausible and an explanation of our fine-grained moral obligations. Moreover, the model helps explain how some pernicious social norms come about and are parasitic on the normative structure.

**Ivonne Salas**, University of San Diego  
Mentor(s): Dr. Kristin Moran, Professor, Department of Communication Studies  
Oral Presentation  
Title: *Chicanx Episodic Television and Representation*  
Film and television have a history of not effectively representing marginalized communities, or not representing them at all. In terms of representing the Chicanx community, there are few television shows and films that depict the intersectional Chicanx community. The focus of this research are two shows that intend to be represent Chicanx culture: Netflix’s *On My Block* (2018), and Hulu’s *East Los High* (2013). Both shows are supposed to be focused on representing Chicanx youth culture in high school. Both shows revolve around different Chicanx issues, but my research question is to find out who these shows are meant for and their potential impact.

**Danielle Sanchez**, Baylor University  
Mentor(s): Dr. David Clairmont, Associate Professor, Department of Theology, University of Notre Dame  
Oral Presentation  
Title: *Selma: Sisters and Saints*  
This study’s purpose was to discover the nature of the involvement of Catholic laymen and clergy within the Selma campaign of the Civil Rights Movement, focusing on some of its most prominent figures,
strategies, and the reasons for their involvement. Using research from original materials in the University of Notre Dame’s archives from Catholics who were involved in the Selma voting rights campaign and the march to Montgomery, these documents and materials give a larger perspective of the people involved and sheds light on those who have been overlooked in past studies. This study will illuminate further the involvement of Catholics, and particularly Catholic women, in the Civil Rights Movement and act as a guide for further information involving Catholic involvement during the movement.

Brandon Selz, University of Northern Colorado
Mentor(s): Dr. Andrea James, Assistant Professor, Department of Biology
Poster Presentation
Title: Movement of Choroid Fissure Cells: an in vivo analysis investigating if these cells have a pre-determined differentiation pathway prior to fusion.

Successful closure of the transient choroid fissure (CF) in the optic cup is essential for proper development of the vertebrate eye and leads to blindness if improperly developed. The fusion of the opposing sides of the CF seals from the proximal region and proceed bi-directionally, but how they differentiate along the CF and if the cells remain close to the point of fusion is unknown. Utilizing in vivo analysis of a transgenic Hsp701:Gal4 and UAS:Kaede Danio rerio, we predict that the cells will remain close to the point of fusion suggesting a pre-determined final destination prior to fusion.

Liad Sherer, University of Northern Colorado
Mentor(s): Dr. Michael Welsh, History Department
Oral Presentation
Title: The Quest for Restorative Justice: American Law and Native Voices 1831-1934

We entrust politicians to intentionally leverage their rhetoric to advocate for justice. However, historically, injustice is a deeply entrenched part of US American culture, history, and political rhetoric. This research focuses on the 1830 Indian Removal Act and the 1934 Indian Reorganization Act by analyzing the rhetoric of politicians, members of the Native American Nations, and government publications, in comparison to the notion of restorative justice. From this research, two main questions emerge: what was the standard of justice that was attempted to be restored?; and does the rhetoric surrounding these acts align with the modern views of restorative justice? Our findings conclude: US Americans have departed from a strict adherence to the US Constitution as a moral authority when evaluating the rights of marginalized groups and instead exhibits a desire to right the injustices of past administrations through processes such as cultural relativism.

Darby Simon, University of Central Missouri
Mentor(s): Dr. Dana K. Tucker, Assistant Professor, Department of Biology
Poster Presentation
Title: Effects of Anticholinergic Medications on Alzheimer’s Disease Pathology using C. elegans

Current treatment of Alzheimer’s Disease (AD) consists of administering acetylcholinesterase (AChE) inhibitors which delay the degradation of the cholinergic nervous system. Correlational evidence suggests anticholinergics, a common medicinal class, thwart AChE inhibitors and may accelerate AD pathology. Interaction between anticholinergics and AD was explored in vivo using the model organism, Caenorhabditis elegans (C. elegans), a non-parasitic roundworm. The C. elegans strain employed, CL2120, produces AβEs plaques in the worms’ body-wall muscles causing paralysis via cellular disruption and neurotransmitter interference. Worms were delivered drug treatments of atropine (an anticholinergic) and nicotine. Potential interactions were assessed, and the results were inconclusive, despite repetition of the experiment. This research generates questions regarding the reliability and viability of the CL2120 strain as a model for AD research.
Mariah Simplicio, University of New Mexico
Mentor(s): Dr. Noah Painter Davis, Associate Professor, Department of Sociology
Oral Presentation
Title: Deaths of Despair among American Indians and non-Hispanic Whites: The Role of Poverty and Inequality

“Deaths of Despair” involve deaths by suicide, that are drug-related, or alcohol induced. This study advances research on D.O.D. both conceptually and empirically. Conceptually, I argue that criminological theories and the racial invariance thesis can be used to explain racial/ethnic differences in D.O.D. Empirically, I use mortality data coupled with data from the American Community Survey to examine and compare the correlates of D.O.D. among American Indian and non-Hispanic White populations. I find that there is a significant and positive association between poverty and deaths of despair for both populations, stronger American Indians. Further, D.O.D. are not racially invariant. These findings suggest that differential levels of disadvantage have distinctive effects on populations, both in terms of crime and health outcomes related to well-being.

Mary Siriboe, Suffolk University
Mentor(s): Dr Kelsey Stocker, Chemistry & Biochemistry
Poster Presentation
Title: Computational Investigation of DMSD Production from VMS and °OH in the ISS Atmosphere

Dimethylsilanediol (DMSD) is contaminating the water processing assembly on the International Space Station (ISS). Various forms of volatile methyl siloxanes (VMS) have been detected in the ISS atmosphere and are presumed to be the source of DMSD via gas-phase reaction with hydroxyl radicals (°OH). Trimethylsilanol (TMS) is one of the major VMS species suspected to contribute to the production of DMSD on board. Electronic structure calculations were performed on two proposed reaction mechanisms in which TMS and °OH react to ultimately produce DMSD and formaldehyde. Molecular structure optimizations were carried out in NWChem using the DFT M06-2x functional and the 6-31+G** basis set. As a result, the calculations indicate that the formation of DMSD and formaldehyde via either proposed mechanisms is thermodynamically favorable.

Caitlin Smith, Castleton University
Mentor(s): Heather Porter, Professor, Department of Psychology, AND, Dr. Megan Blossom, Chair, Department of Psychology
Poster Presentation
Title: Treatment Initiation and Engagement: Recidivism Rates of Offenders Under Community Correctional Supervision

Recidivism rates of offenders on probation, parole, or furlough were examined based on their CBT risk-reduction program attendance. Recidivism rates were measured from the time of remanded treatment to one year and three years. Using 123 offender records, analysis provided evidence for a significant reduction in recidivism within one year when the offender engaged in their treatment compared to those that did not initiate nor engage in their treatment and those that initiated. When analyzing the variable of engagement alone, recidivism within one year was significantly lower when the offender engaged compared to those that did not engage. Using these same predictor variables, it was found that there is no significant difference between any group and their recidivism rates after three years.
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Siddhakshi Solanki, Southern Methodist University
Mentor(s): Dr John Buynak, Professor, Department of Chemistry
Poster Presentation
Title: Atypically Substituted Carbapenems with Improved Activity Against OXA-23 producing Acinetobacter baumannii

Carbapenems represent the most potent and broad spectrum of the beta-lactam antibiotics. The Buynak research group has endeavoured to explore the generation and evaluation of atypically, non C2 substituted carbapenem antibiotics with the objective of improving upon commercially available antibiotics to treat highly resistant new pathogens that have evolved in the 21st century. This presentation will discuss synthetic strategies involved to generate modified carbapenem antibiotics. A library of atypically substituted carbapenems was generated and evaluated against OXA-23 and OXA-48 producing Ab. Selected modifications of the carbapenem scaffold at positions (non-C2) were found to improve activity against carbapenem-resistant, OXA-23 producing A. baumannii. Hence it was demonstrated that atypically substituted carbapenems can display antimicrobial activities superior to those of current commercial carbapenem antibiotics, particularly against carbapenem-resistant pathogens.

Kylie Sommer, Lee University
Mentor(s): Dr. La-Juan Bradford, Director of Academic Support, Academic Support
Oral Presentation
Title: Deaf Biblical Literacy and Habits

This project aimed to study d/Deaf Biblical literacy and habits and to determine whether or not d/Deaf individuals prefer the American Sign Language (ASL) Bible over the print Bible. This study included the administering of a survey, observing the ASL Bible, and a literature review. The research concluded that sign language Bibles are likely easier to read and more accessible to the d/Deaf, but each individual has different experiences and preferences. While similar to the print Bible, the ASL Bible is extremely visual and is presented through the lens of d/Deaf culture. Lastly, d/Deaf culture and language usage intertwine to shape a d/Deaf person’s Biblical experience.

Aria Springfield, Johnson C. Smith University
Mentor(s): Dr. Keri Petersen, Assistant Professor, Department of History
Oral Presentation
Title: The Lost Cause Narrative and its Perpetuation through Charleston, South Carolina’s Historical Tourism

The “Lost Cause” is an ideology that supports the cause of the Confederacy during the American Civil War was a just and heroic one. The Lost Cause does not take into account the role of slavery and the African-American experience. Historical site representations of the “Lost Cause” are one-dimensional and obscure. There is a need to investigate the fallacy of the Lost Cause and its perpetuation in historical tourism spaces, particularly Charleston, SC. The researcher conducted qualitative research-historical design and thematic analysis to investigate how the “Lost Cause” perpetuates itself in Charleston, SC’s historical tourism industry. Magnolia Plantation and Gardens, and Drayton Hall, were among the five sites toured. Preliminary findings were the misrepresentation of slavery as it pertains to these sites. There was a lack of records and documentations on slaves and freedmen.
**Maddie Stevens**, Oklahoma State University  
Mentor(s): Dr. Tim O'Connell, Associate Professor, Department of Natural Resource and Ecology Management  
**Poster Presentation**  
Title: *Quantifying the shifted baseline in breeding bird communities for Native American tribes relocated to Oklahoma*  

Shifted Baselines serve as a way to find abnormalities in an ecosystem. The main purpose of this study was to quantify the shifted baseline of breeding bird biodiversity for multiple Native American tribes now based in Oklahoma. We used beta diversity to quantify estimates of bird community differences and loss between ancestral and Oklahoma lands. Results showed eleven of fifteen tribes experienced a community dissimilarity over 50%. This means these tribes experienced a change in over half of the bird communities, ancestral baseline species, they encountered upon relocation to Oklahoma. This not only shows a significant shift in bird communities experienced by the tribes, but it could also provide insight to other drastic shifting baselines these tribes endured upon their forced removal from ancestral lands.

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**Mikayla Stone**, Harding University  
Mentor(s): Dr. Jeremiah Sullins, Associate Professor of Behavioral Sciences  
**Oral Presentation**  
Title: *The Relationship among Social Media, Interpersonal Relationships, and Self-Conscious Emotions*  

This study examined the relationship among social media, interpersonal relationships, and self-conscious emotions. Participants responded to surveys that were distributed on Facebook and through email. The participants varied in age, gender, and ethnicity. Each participant responded to a four-part online survey. The survey contained the following scales: TOSCA (assesses the self-conscious emotions of shame and guilt-proneness), Social Media Use (measures the usage of social media of the individual), and Dispositional Authenticity and Relationship Authenticity (measures interpersonal relationship). These three variables were analyzed quantitatively and compared to find significant negative correlations.

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**Madison Suttman**, Beloit College  
Mentor(s): Dr. Yaffa Grossman, Professor and Department Chair, Department of Biology  
**Oral Presentation**  
Title: *Examining the role of the wildlife trade in coral populations*  

Coral reef ecosystems are one of the most biologically diverse and generate an estimated $375 billion in benefits each year, yet the majority of the world’s coral reefs are threatened by human activities. One commonly overlooked threat is the wildlife trade. Destructive collection measures such as trawling and cyanide fishing damage individual corals and the loss of native fish species can interrupt reef interactions crucial for coral survival. The trade of 2000 coral species is regulated by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), but is only responsible for endangered species and doesn’t consider the reef as a whole. CITES needs to take a more active role in holding parties accountable to prevent further decline of vulnerable species.

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**Kylie Talamante**, University of New Mexico  
Mentor(s): Dr. Kent Kiehl, Professor, Department of Psychology  
**Oral Presentation**  
Title: *Trauma by Psychopathy: The Connection to Juvenile Offending*  

Trauma experienced in childhood has been studied for many years and has shown to have negative consequences for the individual later in life. With our study “Trauma by Psychopathy: The Connection to Juvenile Offending” we seek to add to the conversation of the effects of childhood trauma by bringing to
light some of the implications in psychopathy. With a sample of juveniles incarcerated in Wisconsin and New Mexico, trauma and psychopathy levels were coded for these subjects. From this data, it is predicted to show that those with more experiences of trauma scored higher for psychopathic traits. This supports our hypothesis which looks at the strong effect of early trauma on the manifestation of the psychopathic character, and it’s role in leading to juvenile offending.

Francisco Tejeda, Marquette University
Mentor(s): Dr. Simon Howard, Assistant Professor, Department of Psychology
Oral Presentation
Title: The Influence of Social Media Posts about Racism on Perceptions of Black Job Applicants and their Job-Related Outcomes

The current study explored whether posting about race on social media negatively affected a Black individual’s job prospects. Participants were told that they would assume the role of an HR personnel and will be given a printout of the applicant’s Facebook page. After reading a job description for a manager’s position at a department store, participants were randomly assigned to either review a job applicant’s application that included social media printouts that talked about racism or were race-neutral. The subject then rated the applicant. The results showed, posting about race affected one’s likability and they were less likely to receive an interview. The implications of this show that posting about race does yield negative consequences for prospective applicants and raises questions about hiring practices.

Melina Telles Tlazola, San Jose State University
Mentor(s): Dr. Carlos E. Garcia, Department Chair and Professor, Department of Sociology and Interdisciplinary Social Sciences
Oral Presentation
Title: Bay Area Gentrification And Its Impacts on the Working Class Community

Gentrification refers to the displacement of people through economic discrimination. The rise in cost of living prompts those from working and middle class backgrounds to adapt as necessary. This comes along with increases in homelessness, commuter times, and personal lifestyle changes. Cities across the Bay Area acknowledge the effect of new development, also known as industrialization, and where particularly communities of color constitute the majority of the changing demographic. With an explanatory approach, the purpose of this presentation seeks to document efforts by counties in the Bay Area and acknowledge how new development affects family life in particular.

Brooklyne Thompson, Idaho State University
Mentor(s): Dr. Rene Rodriguez, Professor, Department of Chemistry, AND, Dr. Rebecca Fushimi, Senior Research Scientist, Idaho National Laboratory
Oral Presentation
Title: Precise Surface Composition Control of Complex Catalytic Materials

A new method for making ultra-sparse deposits of metal onto particles is described. Atomic beam deposition (ABD) has been performed on well-defined surfaces, but controlled modification of catalytic particles is more difficult. The surfaces of actual catalysts have many defects. Determining how the surface of a real catalyst controls its kinetic performance is extremely difficult unless real catalytic surfaces can be precisely modified. To allow well-defined changes in an existing catalyst particle surface, a new ABD tool was designed and constructed. The new deposition system consists of a UHV chamber mounted with an electron beam evaporator and a rotating sample tumbler. An ultra-sparse deposit of iron atoms was performed on 250-300 micron silica particles via incipient wetness impregnation to compare to ABD.
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Julianna Tibbetts, University of New Mexico
Mentor(s): Dr. Phyllis Palmer, Associate Professor, Department of Speech & Hearing Sciences
Oral Presentation
Title: *A Survey of Practice Patterns in New Mexico of the Evaluation of Swallowing Disorders*

Purpose: Review the current procedures used by Speech Language Pathologists, throughout all hospitals in New Mexico, when performing a Video-Fluoroscopic Evaluation study (VFES).
Methods: An online survey will be sent out to every hospital in New Mexico that performs VFES procedures. Pilot Study
Results: From clinical discussion, it has been revealed that across 6 New Mexico hospitals, capture rates range from 6-30 frames per second.
Anticipated Outcome: This study will provide information regarding the inconsistencies that are present when performing the VFES procedure. The inconsistencies will be identified with how they are impactful to the patient's diagnosis and treatment plan. This information will aid in consistent and best practice across New Mexico.

Katie Tinch, Southern Methodist University
Mentor(s): Dr. Maryann Cairns, Assistant Professor, Department of Anthropology
Oral Presentation
Title: *It’s Not Easy Dying Green: Ecodisposition, Waste, and Environment.*

The Ecodisposition, Waste, and Environment study examines methods and motivations behind environmentally conscious funeral and burial options that are emerging in the United States. Preliminary results have been drawn from interviews with funeral industry professionals whose reflections on their own careers as well as the experiences of their clients reveal a complex interweaving of ritual involvement, sustainability, financial concerns, and other themes that shape the landscape of developing funeral and burial practices. Presented here are illustrating details from these reflections in addition to their more general patterns and some of the future research prospects for this ongoing study.

Kellyn Tippins, Beloit College
Mentor(s): Dr. Amy Briggs- Associate Professor, Department of Biology
Oral Presentation
Title: *Lactic Acid Bacteria: Understanding Microbial Succession in Cheddar Cheese*

This research project aimed to explore the environmental factors that influence LAB during the fermentation process. The demand for fermented foods are due to their enhanced shelf-life and nutritional properties in the form of probiotics. Lactic acid bacteria play an essential role in the preservation and production of fermented products. Cheese production is based on lactic acid bacteria's ability to ferment glucose to produce lactic acid and aroma substances, which makes it a perfect medium to test microbial succession. Fermented foods have been a part of the human diet for years, so understanding microbial succession is important because microbial interactions are essential for the success and safety of food fermentation. Unsuccessful food fermentations could lead to digestive problems that may eventually cause gut long-term issues.

Kedriuna Townsend, University of Central Oklahoma
Mentor(s): Dr. Caleb Lack, Department of Psychology
Oral Presentation
Title: *The Effect of Motor Vehicle Accidents and Duration of Mental Health Disruption*
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Each day, there are numerous motor vehicle accidents in the United States, some causing major and minor injuries, and others causing death. Post-traumatic Stress Disorder, depression, and anxiety are mental health disruptions that researchers have found in victims of motor vehicle accidents. There has been research conducted over the relationship between mental health and individuals who are injured in motor vehicle accidents, but very little to no research conducted over the amount of time that victims suffer from the mental health disorder(s). The purpose of this study was to determine the duration of mental health disruption following a traumatic motor vehicle accident. A survey was distributed, and results were analyzed, finding that there was no significant relationship between individuals who are injured, and their development of mental health issues compared to those who were not.

Phuoc Tran, San Jose State University
Mentor(s): Dr. Gilles Muller, Professor, Department of Chemistry
Poster Presentation
Title: The Effect of Solvent on the Enantiomeric Recognition of Amino Acids

The purpose of certain drugs is to be active, beneficial, and to help cure the body of illnesses or diseases. This is an important concept applicable to drug molecules since they are often defined as chiral compounds. Therefore, the focus of this research is to use lanthanide(III) complexes, $[\text{Tb(DPA)}_3]^{3-}$ (where DPA = 2,6-pyridinedicarboxylate) as a probing technique to identify the chirality of the given biological materials, such as amino acids. For this project specifically, we investigate the influence and effects of solvent 1,4-dioxane on the mixture of L- and D-serine when these mixtures interact with $[\text{Tb(DPA)}_3]^{3-}$. We use steady-state and time-resolved luminescence spectroscopic techniques, as well as circularly polarized luminescence spectroscopy (CPL).

Sky Triece, Oklahoma State University
Mentor(s): Dr. Lucia Ciciolla, Assistant Professor, Department of Psychology
Poster Presentation
Title: Early-Life Family Instability as a Risk for Depression in College: The Role of Optimism as a Protective Factor

Early-life family instability, conceptualized as abrupt, involuntary, and/or negative change in family circumstances, has broad implications for long-term psychological well-being. Optimism may protect against the impact of family instability by reducing risk for maladjustment in adulthood, including depression. The current study examined the association between family instability and depressive symptoms, and the role of optimism as a moderator. Results suggested that family instability was positively associated with depressive symptoms at all levels of optimism, but depressive symptoms were consistently lower at higher levels of optimism. These findings suggest that early-life family instability may increase the risk for depressive symptoms in college and that higher levels of optimism may be protective. Screening for family instability and optimism may help identify students at risk for depression.

Yosan Tsegai, University of Minnesota, Twin Cities
Mentor(s): Dr. Patricia Schaber, Assistant Professor, Department of Occupational Therapy and Rehabilitation Science
Oral Presentation
Title: Exploring Measures of Balance and Cardiovascular Health in a Dance Style Leisure Program for Adults with Down Syndrome and Related Disorders

Due to sedentary behavior, people with Down syndrome have a high prevalence of cardiovascular disease, diabetes, and obesity. Their physical inactivity is caused by low muscle tone, decreased strength, and low metabolism leading to developmental delays in motor skills. The purpose of this study is to examine measures that can be incorporated into a larger scale study. The intervention of this dance
style leisure program is designed to counter the deleterious effects related to Down syndrome. For this study, 8-14 young adults with Down syndrome and related disorders were recruited to participate in the dance style intervention. Participants met once a week for an hour-long training. Two different measurements were used; the BOT 2 for balance and a Fitbit to measure cardiovascular responses.

Catalina Tueros, Beloit College  
Mentor(s): Dr. Charles Westerberg, Professor, Department of Sociology  
Oral Presentation  
Title: Competing Frameworks: The Impact of Media Framing on the Immigration Discourse

As of 2017, one in seven people living in the U.S. is an immigrant (Zong et al, 2019). As a result, immigration policy has become central in political discourse. This study contributes to an understanding of how the print media uses frames to shape the political discourse. Frames define a phenomenon by repeating symbols and providing narratives that allow meaning to be attributed to policy decisions (Goffman, 1974). Concepts central to my analysis include how media frames can humanize or dehumanize immigrants (Esses et al, 2013). The purpose of this study is to examine the shifting narratives in the immigration discourse. Through a content analysis of the San Diego Union Tribune newspaper, I am collecting data to show trends in the perception of immigrants.

Isaac Valdez, University of New Mexico  
Mentor(s): Dr. Jay Carroll, Sr Member of the Technical Staff, Sandia National Laboratories  
Poster Presentation  
Title: Relating Build Parameters, Density, and Structural Properties in Additively Manufactured 316L Stainless Steel

This project investigates the Thermal Energy Density (TED) values in additively manufactured (AM) 316L stainless steel and how they affect the structural material behavior. TED is a measure of heat distribution during the build determined from thermal imaging data. TED values were measured during the build process by Sigma Labs for each of the different build plates and samples. Charpy impact toughness was measured through Charpy testing. Porosity was measured through Archimedes density principal. Microstructural information such as porosity was also obtained at SNL. We hope to inform multiscale models to improve structural integrity through improved prediction of microstructure-property relationships. Additionally, several sizes of tensile bars were printed to identify the impact of TED on the unloading modulus, ultimate tensile strength, and yield stress.

Matthew Vance, Concord University  
Mentor(s): Dr. Rodney Klein, Professor of Psychology, Concord University  
Oral Presentation  
Title: The Effects of Physiological Stress on Memory

It has been hypothesized that individuals who experience high levels of stress may experience memory loss. This study aims to examine the effects that physical stress has on human memory. This will be accomplished by using three groups that will be administered a working memory recall task. Group One will have their feet in ice water, Group Two in room temperature water, and Group Three in no water. Anticipated results are that Group One will experience a memory deficit. Results will be interpreted in regard to Baddeley’s 1992 working memory study.
Alexis Velazquez, University of New Mexico
Mentor(s): Dr. Michael Hix, Associate Professor, Department of Music
Oral Presentation
Title: The First to Find a Voice

How can music education be more socially inclusive? How can First Generation College Student's instructors (FGCS) transform inequitable practices within music? This research will explore the experiences of first generation college students (FGCS) enrolled in applied voice studio in the context of deliberate practice time, musical development, self-concept, expertise, and cultural/ musical capital. It has analyzed past literature under the framework of Bourdieu's theory of cultural capital and Ericsson's theory of musical expertise. It will examine the narratives of FGCS and their professors’ experiences in order to develop strategies of best practices that will inform the educational and musical development of future FGCS in music. The majority of literature on FGCS denotes a deficit approach and fails to honor the subjective student experiences of FGCS in higher music education. Additionally, this research seeks to allow more FGCS voices to be heard and to provide suggestions for better musical-educational practices.

Jordan Vick, University of New Mexico
Mentor(s): Dr. Pierre-Julien Harter, Assistant Professor, Department of Philosophy
Oral Presentation
Title: Phenomenology of Suchness

Suchness is the Buddhist designation of the ultimate nature of reality that we can come to know. It is reality such-as-it-is. This term is synonymous with other Buddhist descriptors like emptiness and sameness. Yet, because ignorance of the nature of reality marks our human condition, Buddhist thought invests in practical and theoretical development of a path to overcoming that ignorance to see the true nature of our situation. I investigate this situation through Yogacara and Tathatagarbha texts to descriptively unfold one’s standing in ignorance as it is affected by suchness. I employ a Heideggerian phenomenological method to disclose the interconnection of these synonymous concepts as they constitute different ways of encountering the nature of reality.

Daniela Villalobos, University of Colorado Denver
Mentor(s): Dr. Michael Ferrara, Co-Graduate Program Director, Department of Mathematical and Statistical Sciences
Poster Presentation
Title: New ways of teaching y=mx+b, Youth education =Methods(Xplanation) + Behavior

In the state of Colorado math requirements for high school student’s range from algebra, geometry, and trigonometry. Mathematics can be incredibly difficult for students with a variety of barriers including difference in learning styles, communication, comprehension, and testing. There are many different methods that try to address these barriers ranging from game type activities, using different programs, and increasing communication. There is also research looking into at what age can substantial STEM can be taught to students. For further research specific groups can be looked into, like students whose first language was not English or students with learning disabilities, and if these methods are effective to them too, or if there would need to be changes and new methods.

Amber Wagster, Harding University
Mentor(s): Dr. Alice Henton, Associate Professor CS&D
Poster Presentation
Title: Hear Me Out: An Evaluation of the Services Provided to Parents Prior to a Diagnosis of Hearing Loss
This study sought to identify and evaluate the services provided to parents of children who did not pass their newborn hearing screening. This study attempted to determine what educational services were offered and if they effectively-prepared parents for navigating the process of their child's potential hearing loss diagnosis. A questionnaire was distributed to parents through the offices of audiologists and through Hands & Voices, a parental advocacy organization.

Liana Weisse, Castleton University
Mentor(s): Dr. Leigh-Ann Brown, Professor, Education Department
Poster Presentation
Title: The Story of Poverty in Rural Education: Educators’ Perspectives on the Correlation Between Free and Reduced Lunch Eligibility and Standardized Test Scores

Poverty in education is a topic that takes many forms in today’s research world. Student eligibility for free and reduced lunch is one way to indicate a student's socioeconomic status (SES). Standardized testing is a widespread and generally reliable way to analyze the performance of students in public schools. The purpose of this research is to determine if there is a correlation between free and reduced lunch eligibility and standardized test scores nationally, as well as in the rural state of Vermont. Through both quantitative and qualitative analysis, a detailed understanding of these questions can be explored. Through this nuanced perspective of the research question, I was able to conclude that there is not only a direct correlation between free and reduced lunch eligibility and standardized test scores nationally, but also in Vermont. An understanding of the many layers of student life that can potentially affect student achievement was also obtained.

Kaitlin Wells, Castleton University
Mentor(s): Dr. Deborah Wagget, Professor, Multidisciplinary Studies Program Coordinator
Dr. Timothy Thibodeau, Assistant Professor, Chemistry Program Coordinator
Poster Presentation
Title: The Ways in Which the Nature of Science is Implemented in Teacher Made Lesson Plans in the Fifth Grade Classroom

The current study analyzed how fifth grade teachers incorporate the Nature of Science in their classrooms. Science lesson plans were collected from eleven fifth grade teachers throughout the state of Vermont. The lesson plans were analyzed using an adapted scoring rubric. I found that fifth grade science teachers in Vermont most commonly teach that science is a human endeavor (aspect 5) and knowledge is based on empirical evidence (aspect 2). When teaching science lesson plans the teachers used a variety of delivery methods. The two most common delivery methods being hands on activities and group work. Further research is needed to help professional development programs and school districts gain a better understanding of what their teachers know and are doing in the classroom. The more that we know about teachers science teaching habits the better and stronger the professional development programs will be.

Edward Wiggins, Xavier University of Louisiana
Mentor(s): Dr. Ebony McGee, Associate Professor, Department of Teaching and Learning
Oral Presentation
Title: Beyond Research and Innovation: Exploring an Equity-Based Rationale for Engineering and Computing Students

Motivations for Black engineering and computing students' pursuit of doctoral degrees include a desire for research as well as a career in government or academia, but their intrinsic motivations and passion for social change is understudied. The “equity ethic” is a characteristic related to a scholar’s concern for
addressing inequities. Previous literature, focusing on Black students’ experiences in STEM fields and their motivations to pursue STEM doctorates, shows students cite altruism and decreasing inequities as reasons to pursue doctorates. These motivations often signal an equity ethic. I examined the manifestation of the equity ethic for the students by analyzing interview transcripts. The findings suggest the equity ethic manifests as a reason to enter doctoral programs, motivator during doctoral programs, and catalyst for career trajectory.

__Christie Wildcat__, University of Wyoming  
Mentor(s): Dr. Angela Jaime, Director of Native American and Indigenous Studies, Department of Native American and Indigenous Studies  
Oral Presentation  
Title: *A Case Study of a Culturally Rich Environment for Native Youth, Their Life Choices, and Opportunities*  

Raising a child in a culturally rich and strong environment is essential to children choosing the path of education and a prosperous future. Past studies have focused solely on the behavior of Native youth and the consequences of their behavior, rather than the solutions or positive influence culture which created a deficit perspective of Native youth. This qualitative study intends to create space for the stories of youth and their families in culturally rich environments, the positive influence of culture in youth decision making and ways in which educators and community members can support positive self-awareness in community and school environments. This study dove into the lives of a case study family, to show the importance of a presence of cultural enrichment for Native youth.

__Calah Williams__, University of Wisconsin-Whitewater  
Mentor(s): Dr. Carolyn Morgan, Professor/Department Chair, Department of Psychology  
Poster Presentation  
Title: *Caregiver Burden: The Effects of Having a Family Member with a Psychiatric Disorder*  

The issues inflicted on familial caregivers requires further examination. There is research on those living with psychiatric disorders, but what is left out is that many of these people depend on the assistance of others. Prior research has found that depression, anxiety, and stress have been imposed on familial caregivers as a result of the burdens they’ve encountered. This study aims to examine the effects inflicted on familial caregivers of those with psychiatric disorders. A qualitative design will be used to further gather information on the experiences of familial caregivers. We anticipate finding some forms of burden that we may be able to define which could help create preventative treatments or coping mechanisms for familial caregivers and provide them with the support they are lacking.

__Salamong Xiong__, University of Minnesota - Twin Cities  
Mentor(s): Dr. Vuk Mandic, Professor, School of Physics and Astronomy  
Oral Presentation  
Title: *SuperCDMS: Energy Calibration of a Cryogenic Ge HV Particle Detector*  

The goal of the SuperCDMS collaboration is to directly detect dark matter. Potential candidates for dark matter are Weakly Interacting Massive Particles (WIMPs). To detect WIMPs, it is important to be able to predict how a Ge/Si particle detector will respond to a dark matter signal. In particular, it is necessary to calibrate the recoil energy measured by these detectors. This paper presents the energy calibration spectrum of a SuperCDMS-HV Ge particle detector using Am-241 and a PuBe neutron source. Due to high event rate, criteria were developed to remove low-quality data arising from particle interactions that occur too soon after a previous interaction. Peaks in histograms of pulse amplitudes were identified as energy peaks from the various radioactive sources, and fits of these peaks formed the basis for
generating an energy calibration function. The calibration function was used to generate the calibrated energy spectrum.
A note about our conference logo:
If you look very closely at our conference logo, you will see lines drawn from each of the other 186 McNair Scholars Programs across the United States, converging on UNM. These lines not only represent individual programs but networks that form when McNair Scholars and staff get together to share research, resources, and a sense of mission. We hope that you will take the conference’s networking theme to heart and grow your networks in the next couple of days and beyond. Use this time to talk to scholars, staff, and graduate school recruiters you haven’t met before. In short, use the next couple of days to “Discover the power of Networking!”

Notes
Top Floor (Level 3): Registration here on Oct. 3. This level has conference rooms where the workshops will be held on October 3 and the Oral Presentations on October 4.

Level 2, also known as the “Plaza Level,” is home to the large ballrooms and food court.

Level 1 (bottom floor) is where the “Atrium” is located. The poster presentations will be held in this area on October 3. The Atrium is an open space that can be seen from level 2, just east of the ballrooms.
Conference Agenda at a Glance
(detailed schedule on page 4)

DAY 1 - THURSDAY, OCTOBER 3, 2019 - UNM Campus

7:30 a.m. – 8:45 a.m. Conference Registration & Breakfast, SUB Top Floor

9:00 a.m. – 10:15 a.m. Opening Ceremony and Networking Event, Woodward Hall 101 (building directly west of SUB)

10:30 a.m. – 11:30 a.m. Graduate School Fair Session #1* (Ballrooms SUB) & Research Poster Presentation Session #1* (Atrium, SUB bottom floor)

11:45 a.m. – 12:45 p.m. Lunch, SUB Top Floor

1:00 p.m. – 2:00 p.m. Graduate School Fair Session #2* (Ballrooms SUB) & Research Poster Presentation Session #2* (Atrium, SUB bottom floor)

2:15 p.m. – 3:00 p.m. Student & Staff Workshops Session #1, SUB Top Floor (See page #5 for workshop descriptions and locations)

3:00 p.m. – 3:30 p.m. Snacks & Refreshments, SUB Top Floor

3:35 p.m. – 4:20 p.m. Student & Staff Workshops Session #2, SUB Top Floor (See page #5 for workshop descriptions and locations)

4:30 p.m. – 8:30 p.m. Conference Excursion and Dinner (off campus)
See page # 7 for instructions for this activity

DAY 2 - FRIDAY, OCTOBER 4, 2019 - UNM Campus

8:15 a.m. – 9:35 a.m. Breakfast, Ballroom C, SUB

9:45 a.m. – 12:10 p.m. Morning Concurrent Oral Research Presentations: Sessions 1-6 SUB Top Floor Conference Rooms

12:15 p.m. – 1:15 p.m. Lunch, Ballroom C, SUB

1:25 p.m. – 3:50 p.m. Afternoon Concurrent Oral Research Presentations: Sessions 7-12 SUB Top Floor Conference Rooms

4:00 p.m. – 4:30 p.m. Closing Ceremony, Ballroom C, SUB