



# **Congratulations to our incoming 2021-2022 Rebel Research and Mentorship Program Graduate Student Mentors**

**UNLV** | GRADUATE  
COLLEGE

# College of Education

---



**MONICA HERNANDEZ-  
JOHNSON**



**Ph.D. student,  
Educational  
Psychology**

**Advisor: Dr. Lisa  
Bendixen**



This study takes a deductive objective approach to examine the purpose, motive, and results of the use of mixed methods research (MMR) as a mode of inquiry or research methodology. In addition, this project seeks to understand whether there is a connection to the use of MMR and critical inquiry. Critical Mixed Methods Research (CMMR) requires a paradigm shift, it is not a linear process but an iterative and interconnected one driven by the needs of the study to bring forth a more accurate portrayal and fuller picture, especially when conducting research with underrepresented and marginalized groups. The likely role of the mentee will be to engage in the discussions of what is Critical Mixed Methodology, data preparation, coding, and cleaning. Mentee will be invited to participate in the presentation of research in local and out-of-state conferences, as well as any publications that result from this project.

# NICOLE JULIANA THOMAS



**Ph.D. student,  
Department of  
Teaching and Learning  
Science Education**

**Advisor: Dr. Tina Vo**



My work centers on misconceptions in STEM, and how to potentially address those misconceptions within a population of preservice science teachers. My work consists of classroom interventions, surveys, and lesson plans, with the potential of expanding out to ethnographic interviews.

I approach my research from a Transformative worldview, centering social justice and equity in science education, as well as the importance of personal lived experience as it applies to science. This will be a large component of the work being conducted, so if you're interested in science, education, and equity, this is a great place to start your research!

Undergraduate students will be responsible for attending biweekly lab meetings, reading relevant literature, and processing both qualitative and quantitative data. As a mentor, I plan on identifying the strengths of the students working with me in the hopes that we both get the most out of this research experience. Quality work will be presented at a research conference with the potential for future publication.

# Howard R. Hughes College of Engineering

---



**MEENA  
EJJADA**

**Ph.D. student in Civil  
and Environmental  
Engineering and  
Construction**

**Advisor: Dr. Erica J.  
Marti**



**Research Area:** Water is a scarce commodity and the need for alternative water supplies has increased rapidly. Therefore, reclaimed water and stormwater management play a significant role in meeting our daily demands for water consumption and irrigation. Our current project focuses on managing water reclamation to resolve water scarcity issues and provide safe water for irrigation.

**Outcome:** : The research experience will allow you to gain a better understanding of existing water issues, treatment technologies, and design strategies to address problems in water reclamation. By taking part in this interdisciplinary research, and you will build knowledge in engineering, chemistry and biology. Through exposure to lab work and research, you will be prepared to tackle research as a graduate student.

**Roles:** (1) Review the literature to understand the proposed study plan, (2) conduct experiments, (3) collect and analyze data, (4) present project results at conferences and (5) draft report and/or journal article.

# SHEKHAR SINGH

**Ph.D. student,  
Computer Science**

**Advisor: Dr. Fatma  
Nasoz**



Emotions are a powerful tool in communication and one way that humans show their emotions is through their facial expressions. In the field of Artificial Intelligence, Facial Expression Recognition (FER) is an active research area. It is tough to classify images with multiple class labels and more problematic when the size of an image and dataset is small. Our research focusses on analyzing the image dataset using Machine learning and Deep learning techniques and filling a gap between supervised and unsupervised learning by using Generative Adversarial Networks (GANs). GANs have been extensively used in multiple computer vision applications. We believe that GANs will also be helpful in the face dataset like FER2013 to generate synthetic images and will lead us to address the overfitting issue using data augmentation techniques.

To become a successful independent researcher, the mentee has responsibilities as well:

- Doing literature review and discuss findings as a team
- Assisting with analyzing image datasets
- Contributing to the writing of the manuscript
- Co-Presenting research work at the university or national level conferences
- Willing to learn with a positive attitude and not be afraid of failure



**SURAJ VENKAT  
POCHAMPALLY**

**Ph.D. Student,  
Mechanical Engineering**

**Advisor:  
Dr. Jaeyun Moon**



**PROJECT DESCRIPTION:**

We will study the surface interaction between carbon-based porous materials and toxic pollutants soluble in water, resulting in the development of new efficient remediation processes and materials for groundwater recovery, especially at the Department of Energy (DOE) nuclear sites. In this project, we will produce biochar (carbon-based porous matter) from biomass feedstocks, subsequently to modify the biochars to enhance their sorption capability, and finally to use it for effective purification of groundwater from toxic pollutants. My undergraduate mentee, Maaike Parajes, will be helping with the material characterization on Scanning Electron Microscopy (SEM) and performing some tests like the contact angle measurement test. She will also do a literature review on new materials and methods which support the project.



# College of Fine Arts

---

**Catherine M.  
Pratt**



**M.F.A. Student,  
Department of Theatre  
Arts**

**Advisor: Brackley  
Frayer**



Creating the mood, atmosphere, and environment while bringing out themes and ideas are just part of a lighting designer's work on a theatrical production. Collaboration, creativity, and working with other designers and the director are important aspects of the work done on a production. As the lighting designer for the musical *Little Shop of Horrors* being produced through the Nevada Conservatory Theatre, my research project involves researching, creating, implementing, and documenting the lighting design.

The undergraduate mentee will be able to experience both the artistic side and technical side of lighting design for a production. The mentee will be involved in time period research, paperwork documentation, assisting with planning and leading load in, and be a part of the lighting design team during technical rehearsals.



**RYAN  
BOND**

**Master of Music  
Degree,  
DMA candidate  
UNLV School of Music**

**Advisor: Dr. Timothy  
Jones**



A few topics I would like to tackle would include, *Music and Social Justice*, *Learning an Instrument and its effects on scholastic success*, and *Drumming: its effects on physical and mental health*. While each of these topics would tackle different sides of music, I understand that we will only have enough time to work on one. I feel it would be beneficial to allow my mentee to have a say in choosing one of these topics.

Specific responsibilities would include academic research, outreach to our community, collaboration with music majors and non-music majors, creating surveys and gathering data. These responsibilities will be divided up according to the Mentor and Mentee's strengths in organizing how each will be delivered. The collective information and final product will be delivered in two mediums, an article and poster/PowerPoint method. This will be presented side by side with mentor and mentee in a collaborative/team method.

# William F. Harrah College of Hospitality

---



**NASIM  
BINESH**



**Ph.D. student,  
Hospitality  
Administration**

**Advisor: Dr. Amanda  
Belarmino & Dr.  
Robert Rippee**



Title: **Artificial intelligence use in hospitality: Machine/human interface.**

We are looking for an enthusiast undergrad that is willing to be part of this study in form of **either research assistant or a software engineering student**. As a research assistant, the undergrad student will oversee the data collection, cleaning data, data analysis, and help with writing the report and present the findings in conference(s). As a software engineering student, undergrad student will oversee programming our robot and will gain an opportunity to work on a service robot.

# School of Integrated Health Sciences

---



**KIT YEE  
LEUNG**



**I.H.S Ph.D. student,  
Department of Health  
Physics and Diagnostic  
Sciences**

**Faculty Advisor:  
Dr. Yu Kuang**



Hepatocellular Carcinoma Detection (HCC) is the third leading cause of cancer death worldwide. Detecting HCC at earlier stages could reduce mortality rates 10- to 50- fold. Unfortunately, current strategies for early detection of HCC, including routine CT imaging and alpha-fetoprotein biomarker, are suboptimal. These strategies underestimate disease burden and extent and expose patients to unnecessary morbidity, risks, and expense. This project aims to change the paradigm for early detection of HCC by developing a convenient, clinically translatable multiplexing lipid species biomarker test using patients' plasma.

The undergraduate student mentee will perform data analysis on lipidomics profiles, electronic literature search and data extraction from lipidomics studies. I will write the manuscript while the student mentee will prepare graphs and figures.

The student mentee will learn about research ethics knowledge, electronic literature search, bioinformatic data analysis technique and data visualization.

# CHRISTIAN ISON

**Ph.D. student,  
Department of  
Kinesiology and  
Nutrition Sciences**

**Advisor: Dr. Janet S.  
Dufek & Dr. Mohamed  
B. Trabia**



Impaired postural control and stability are observed in people diagnosed with diabetic peripheral neuropathy (DPN), a worsening progression of diabetes mellitus (DM). However, the degree to which these balance impairments develops is not clearly understood.

Therefore, to better understand how the changes in dynamic postural control and stability inform us about the progression of DM and DPN, the purpose of this research is to (a) assess dynamic postural control and stability in pre-diabetic, diabetic without neuropathy, and diabetic with neuropathy patients and (b) investigate how changes in postural control and stability inform us about disease progression of DM and DPN.

The undergraduate student will likely be responsible for 1) Surveying and summarizing literature, 2) Assisting the graduate student with subject recruitment and scheduling, 3) Data collection, 4) Pre-processing data and descriptive analysis and, 5) Assisting the graduate student in the preparation of abstract and poster for the conference (s).

# College of Liberal Arts

---



**ALDO  
BARRITA**

**Ph.D. student,  
Department of  
Psychology**

**Faculty Advisor:  
Dr. Gloria Wong-  
Padoongpatt**



My research project will study how forms of micro racism— racial microaggressions impact marginalized individuals. Specifically, we are interested in the response to these attacks in the form of stress and the coping mechanisms involved in this process. My mentee will be managing data collection and trained in statistical analysis for this study. Additionally, my mentee will collaborate in poster development and presentation at a national conference, as well as assisting on writing the manuscript for publication.

**JONATHAN  
ROLDAN**



**PH.D. Candidate,  
Department of  
Anthropology**

**Advisor:  
Dr. Alan Farahani &  
Dr. Lisa Johnson**



Market exchange carries important implications not only in the economic dimension but also in the social and political dimensions of the society that operated under such system. Previous research in the Maya Lowlands has demonstrated that market exchange was operating as early as 450-700 CE. This research project aims to propose a marketplace location at the ancient city of *Lakamha'*, Mexico (250-900 CE) using the configurational approach.

The undergraduate mentee will:

- Learn how to use Arcgis Pro
- Collect geographical information on *Lakamha'* (and other sites)
- Perform basic data analysis on architecture function
- Prepare and present results at a conference
- Develop other professional skills



**KINDY  
INSOUVANH**

**Ph.D. student,  
Department of  
Psychology**

**Advisor: Dr. Jennifer  
Rennels**



This research project will examine how the expertise and appearance of women or men affect whether children trust statements made by an adult, learn what the adult knows, and make decisions about the adult's attributes. In this study we aim to replicate and extend previous findings that showed young children rely more on attractiveness than accuracy to determine which adult to trust and endorse. In addition to children's performance on the tasks we will collect eye tracking and heart rate data to better understand how visual and sustained attention guide decision making.

For this project, my mentee will assist with data collection, participant recruitment, and data analysis. Additionally, we plan on submitting this study as a pre-registered report, therefore my mentee will gain experience with the collaborative process of writing and submitting a registered scientific report. Finally, my mentee and I will work on creating a poster or presentation of the study's preliminary findings.



**KRISTIN  
VIERRA**



**Ph.D. Student,  
Psychology**

**Advisor: Dr. Rachael  
Robnett**



For my RAMP project, my mentee and I will perform a content analysis of teen media. The purpose of this project is to capture the frequency of marginalized groups presented in popular teen entertainment and examine the extent to which issues of discrimination are discussed and the degree to which stereotypical behavior is portrayed. My mentee and I will work together to generate a codebook, code the selected television shows, analyze the data, and write-up a journal manuscript.

**TAYLOR  
FLAHERTY**



**Ph.D. Student,  
Department of  
Anthropology**

**Advisor: Dr. Jennifer  
Byrnes**



Stigmas placed on the transgender (trans) community make these individuals highly susceptible to systemic and interpersonal violence around the world. Their bodies and identities may also experience postmortem (i.e., after death) violence in forensic cases as trans individuals are often misgendered, given inadequate care, or have their cases run cold. Unfortunately, trans identities are often excluded from forensic anthropological research; my study aims to rectify this by analyzing the intersectionality of violence experienced by trans decedents. Using the Transgender Day of Remembrance database, we will analyze global data on the types of violence experienced by trans decedents during life, fluctuations in lethal violence over time and location, language used to discuss victims, and whether cases remain unsolved.

The mentee for this project will collaborate with us to explore relevant literature, build the research design, mine through and codify data, perform statistical analysis, and co-author presentations and publications. This is also a great opportunity for an undergraduate to experience research at the graduate level, expand their academic network, and participate in a novel study that aids a vulnerable population.



# TREVOR POLLOM

Ph.D. Student,  
Anthropology

Advisor:  
Dr. Alyssa Crittenden



**Background:** Monitoring the zones adjacent to wildlife conservation areas is important because 1) these “buffer zones” influence the biodiversity within National Parks and, 2) in developing nations, such as Tanzania, individuals living on the edge of conservation areas often belong to marginalized Indigenous groups. Therefore, mapping land-cover changes in these areas helps researchers and policymakers understand the challenges faced by humans and wildlife. The current project plans to use satellite imagery to investigate land-cover change in the Lake Eyasi Basin area of Northern Tanzania; in doing so, we will contextualize the changing lifestyles of Hadza hunter-gatherers and Datoga pastoralists living just south of Serengeti National Park.

**Why work on this project?** This research is an opportunity to develop skills using geographic information systems (GIS). Further, we will produce land-cover change maps that are important to local peoples, non-profit groups working on the ground, and academics conducting research in the area.

**Expectations of the mentee:**

1) Read selected publications relevant to the current project, 2) Learn the basics of using GIS, particularly methods relevant for using remote sensing and satellite imagery, 3) Use qualitative and quantitative techniques to analyze satellite imagery, 4) Write-up findings and results of our study, 5) Prepare and present a poster at a national-level conference.



# College of Sciences

---

**DAVID  
RICE**



**Ph.D. candidate,  
Department of Physics  
& Astronomy**

**Advisor:  
Dr. Jason Steffen**



**Building exoplanets and/or crashing them together.** My research focuses on the interiors and dynamics of extrasolar planets using computational tools. Discoveries such as Kepler-10b, LHS 1140b, and the seven planets of the TRAPPIST-1 system show that small rocky planets are now within observational limits.

The radii and masses of observed planets allow for a diversity in composition and internal structure. I use a newly developed code using C++ and Python to study possible planetary interiors using the most up-to-date material properties.

I also study the stability times of planetary system by analyzing large ensembles of simulations to gain insight on mechanisms of planet formation.

The mentee will be responsible for incorporating new materials into our planet-building code or analyzing the data of planet simulations. This research will develop the mentee's skills in coding and data analysis and representation. I will provide the mentee opportunities to present their work and to be a part of publications.

# **Greenspun College of Urban Affairs**

---



**SHON  
REED**

**Ph.D. Student,  
Department of  
Criminal Justice**

**Advisor: Dr. Melissa  
Rorie**



Research has shown that heterosexual cisgender men, sexual minority men and women, and transgender individuals who experience intimate partner violence (IPV) often face difficulty in obtaining services for their victimization from victim service providers. This is particularly problematic for members of the LGBTQ+ community, as national estimates of IPV prevalence indicate that these populations experience IPV victimization at a rate equal to or greater than that of heterosexual women.

For this study, my mentee and I will be looking at systemic framings of IPV, and their associated discourses, as put forth by victim service providers. With these discourses identified, we will then explore how they impact staff perceptions of IPV and “legitimate victimhood.”

Through their time in RAMP, my mentee will learn more about U.S. framings of IPV, service distribution to victims, and norms associated with Western gender and sexuality. On a methodological level, my mentee will gain experience in qualitative coding, discourse analysis, and constructivist grounded theory approaches. Participating in this project will allow us to present our findings at national, regional, and university conferences.