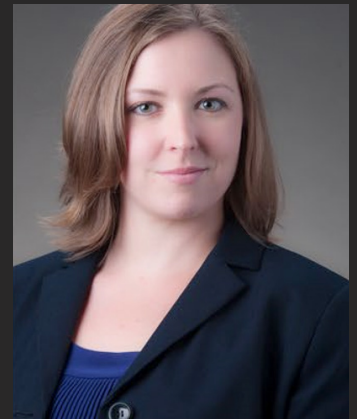


# McNair.

Ronald E. McNair Post Baccalaureate Achievement Program

The collection of abstracts of EWU McNair Scholars



Featuring research of Eastern Washington University McNair Summer Research Interns ©2016



Before you can make a dream come true,  
you must first have one.

# McNair Scholars Abstract Journal

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Ronald E. McNair Postbaccalaureate Achievement Program

Eastern Washington University

107 Monroe Hall

Cheney, WA 99004

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The McNair Scholars Program is a TRIO Program.



# The highlight

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We are a close team of creative professionals at Eastern Washington University. We are passionate about partnering with great people and organizations to provide exceptional paths to successful learning and guiding students to finding the pathways that help them be successful.



Christina Torres  
García, PhD



Cynthia Dukich, MFA



Carlos Muñoz, M.A.



Suzanna Altsuler



Lexi Mitchell



# What we do

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The TRIO Ronald McNair Postbaccalaureate Achievement Program at Eastern Washington University prepares low-income, first-generation and/or underrepresented minority undergraduates for success in doctoral programs by providing scholarly activities and community engagement that empowers participants to become agents of positive change in a culturally diverse world.

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Christina Torres García, MBA, PhD.

This current year, we are in the midst of our McNair Grant Competition sending students to campus visits and national conferences, as well as, preparing our new McNair cohort with scholarly activities and community engagement.

In this document, you will find all the McNair scholars who worked on faculty-guided research projects during the summer. All students submitted abstract to the National Undergraduate Research Conference. Many will be presenting at the University of North Texas McNair Conference this February 16-19th.

Thank you to Faculty!

I want to take the opportunity to thank all the faculty members for their collaboration and dedication not only with students but also for sending letters of support for our McNair Grant Competition. You really make us (McNair) feel apart of our EWU Community!

Highlights of Fall 2016:

McNair Scholar, Ricardo Ely, presented his research October 28th at the Society of Vertebrate Paleontology in Salt Lake City, Utah. He delivered a poster presentation with his advisor Dr. Judd Case on a Theropod Dinosaur from James Ross Island, Antarctica. Awesome work! #TrioWorks. [Read more](#)

Minerva Zayas and Edith Melendez each have received the Washington Women in Need education grant for \$5,000. This organization empowers women in Washington state to continue their education and to build a better future. They may use these grants towards tuition, mandatory fees, and required books and supplies at accredited Washington colleges and universities. Congratulations ladies! #TrioWorks. [Learn more](#)

Minerva Zayas and Ella McCalidaine participated in a campus visit to Indiana University through a multi-day recruitment program for IU applicants. They met with possible mentors, explored the campus, and had a chance to sit in a seminar class with graduate students. They believe that Indiana University has a lot to offer! What an awesome opportunity for you both! #TrioWorks. [Read more](#)

Opportunities:

May 12-15th, 2017: Save the date for the 8th Annual Washington State TRIO Conference: Ignite and Inspire: Transforming Student Experiences with High-Quality, High-Impact TRIO Practice. The U.S. Department of Education has requested our cooperation on having a conference at EWU on their training for Federal TRIO Programs. This training is designed to assist TRIO personnel in improving the operation and success of the TRIO projects. I am also opening this conference to staff and faculty as a professional development on best practices for recruitment, retention, and graduation of first-generation, low-income students by TRIO professionals. Please look for more information on our website as we approach May.



Veronica Albrecht

### **Fecal Coliform Levels In Stormwater Fed Cannon Hill Park Pond Significantly Increased Following Rain Events**

Cannon Hill Park Pond (CHPP), Spokane, WA is a residential pond designed by the Olmsted Brothers in the early 1900s and has historically been maintained by the continuous input of potable water (~14 million gallons/year, City of Spokane Water Quality Report Cannon Hill). In 2010, as part of the Lincoln Street Spokane Urban Runoff Greenways Ecosystem project, a vegetated bio-filtration cell (storm garden) was designed to capture and filter storm water and direct its flow to CHPP via a storm drain. This project was meant to mitigate storm water and sanitary sewage overflow during storm events and contribute to CHPP water levels (estimated 315,000 gallons/typical year). While the City of Spokane has conducted some chemical analyses of CHPP, they have yet to conduct any fecal coliform (fc) testing. We were interested in comparing fc levels in CHPP to levels allowed by the Washington State Environmental Protection Agency (WA-EPA) and in determining if fc levels increased with rain events as a result of storm water input from the storm drain. To address our questions, we used a membrane filtration method and cultured filters on mFC agar to identify fc bacteria. We sampled three different pond sites: directly in front of the storm drain, from the potable water spigot, and an offshore point >10m from the storm drain. We sampled CHPP weekly for 11 weeks (8 non-rain events, 3 rain events) and determined that fc levels at the storm drain, but not the offshore site, exceeded WA-EPA levels (10% samples exceed 400 fc/100ml). Additionally, we found that there was a significant increase in fc detected at the storm drain and offshore sites following rain events ( $p < 0.0001$  and  $p < 0.0005$ , respectively). We never detected fecal coliforms in our potable water samples.



**TRIO McNair Faculty Research Mentor Dr. Andrea Castillo** is the Associate Professor of Biology at Eastern Washington University. Her research interests focuses on studying the molecules in *Helicobacter pylori* uses to infect and cause gastric disease in humans.





Ashley Ellison

### Assessing the Need for Trauma Based Services in Higher Education

Trauma can be understood as any event that is physically or emotionally harmful or is life threatening. Prolonged trauma has been determined to have lasting adverse effects on an individual's mental and physical health. Several studies, such as in the Kaiser Permanente's CDC study, have shown the influence of trauma on the lifespan and mental and physical health of an adult. Adverse Childhood Experiences (ACEs) include but are not limited to, five personal traumatic experiences: personal abuse, verbal abuse, sexual abuse, physical neglect and emotional abuse. ACEs also include five traumatic experiences involving family members: alcoholic parent, mother is a victim of domestic violence, family member in jail, family diagnosed with mental illness, disappearance of a parent through divorce, death, or abandonment. Scholars note a lack of support in higher education services for college students experiencing trauma. A majority of the research on trauma and ACEs has focused on the k-12 public school system. As such, for my study I plan to assess the need for trauma based services in higher education by investigating the prevalence of students at a comprehensive regional university reporting a significant level of trauma exposure. I will also investigate what services and supports a comprehensive regional university offers to students who experienced trauma. I plan to administer ACEs and a resilience survey to students in general requirement courses. I will invite those who score above a five on the surveys to join a focus group to better understand their perception of trauma informed practices in higher education. I expect to find a gap in mental health services around trauma and will make recommendations for the purpose of improving services within post-secondary institutions.



**TRIO McNair Faculty Research Mentor** Dr. Susan Ruby is the Associate Professor of school Psychology and half-time Associate Dean for the College of Arts, Letters & Education at Eastern Washington University. Her research interests involve practices associated with Multi-tiered Systems of Support and development and delivery of academic and social-behavioral interventions for students at-risk in PreK-12 settings.



Ricardo Ely

### **Basal Deinonychosaur from the Early Maastrichtian, Antarctic Peninsula and the Biostratigraphy of the Latest Cretaceous Dinosaur Fauna of Antarctica**

We offer a re-description of an early Maastrichtian, gigantic, basal deinonychosaur from James Ross Island, Antarctica. In 2004, researchers found the remains of a theropod previously referred to Dromaeosauridae, a clade which includes Velociraptor and Deinonychus. Referral to this clade is not supported in our phylogenetic analysis due to certain aberrant morphological features. Turner et al. (2012) notes the lack of a distal, ginglymoid articulation of metatarsal II signifies a placement at least within Deinonychosauria, but not Dromaeosauridae. The specimen also lacks an enlarged ungual of the second pedal digit. Our phylogenetic analysis reveals this theropod to be the basalmost deinonychosaur, a sister taxon to the clade Troodontidae+Dromaeosauridae. However, bootstrapping supports a trichotomy of this theropod, Troodontidae, and Dromaeosauridae with 77% of bootstrapping replicates. We also offer the first biostratigraphic placement of most Campanian-Maastrichtian, non-avian Antarctic dinosaurs and can determine the contemporaneous dinosaur fauna of this theropod.



**TRIO McNair Faculty Research Mentor Dr. Judd Case** is a Dean of Special Projects and a Professor of Biology at Eastern Washington University. His research focuses on vertebrate paleontology to answer questions in the areas of evolution, biogeography and recently on the effects of climate change on the past life in Antarctica. Dr. Case has extensive Antarctic field experience having conducted nine field seasons in the Antarctic Peninsula, which has been funded by grants from the National Science Foundation.



Ella McCalidaine

### Communication Dynamics with Intimate Partner Violence

Intimate Partner Violence has generated a vast quantity of research over the last several decades, resulting in an occasionally-conflicting array of findings. This article attempts to contribute to the existing literature by offering a case-study involving three generations of women within the same family line, who have experienced some form of intimate partner violence, child abuse, or both. This research is framed by institutional ethnography in order to justify the methodology, and includes ethnography and auto-ethnography of participants in order to draw from strong objectivity. Analysis is conducted utilizing feminist standpoint theory so that insight is oriented from lived experiences rather than abstract, calculated analysis. Johnson's typology of domestic violence is utilized in order to distinguish the specific instances discussed across generations and patterns of violence, including negotiation of acceptable norms and transmission from parent to child are explored. Themes uncovered lead to the proposal of a concept referred to as the "Gaze of Morality," which describes the pressure felt by both the

enactor and receiver of intimate partner violence to deny or obscure the reality in order to conform to social expectations of behavior. Enactors of violence hide their behavior in order to avoid moral condemnation of engaging in patriarchal violence beyond acceptable levels of plausible deniability. Receivers of violence may negotiate levels of it in order to provide for their children when they perceive no other recourse, rather than risk condemnation from the gaze of morality for not selflessly providing for their children, regardless of the personal cost.



**TRIO McNair Faculty Research Mentor Dr. Todd Hechtman** is an Associate Professor of Sociology at Eastern Washington University. His research emphasizes social identity, particularly the complex ways in which multiple cultural discourses and institutional contexts combine in a single individual. His current project on "sociological morality" is an attempt to infuse the idea of morality with basic sociological foundations as well as to engage sociology with moral action.





Edith Melendez

### **Best Practices for Institutional Transformation in Serving Undocumented Students**

Research studies show that 65,000 undocumented students graduate from high schools in the U.S. yearly. As defined by the National Immigration Law Center, an undocumented person is a foreign national who resides in the United States with fraudulent documents or entered without authorization. Every year hundreds of motivated students with high potential to succeed in an academic setting enroll into four-year university with hopes of becoming upwardly mobile and contributors to society. Compared to college students with authorization, they have added stress and pressures relating to overcoming financial, social, and educational challenges. Despite their obstacles and legal status, they persevere and achieve academic success along educational pipelines. However, many universities in Washington State lack support structures that provide social support, personal development, and academic services specifically tailored to college students without documentation, creating gaps in assisting undocumented students to prosper in the academy. To expand the understanding of how to better serve undocumented students, qualitative data was collected in the form of anonymous online surveys. Eleven participants identified themselves as an undocumented student enrolled at a regional university and participated in the K-12 public education for at least 5 years. Findings showed that the majority of undocumented students were dissatisfied with the academic support they have received, and that implementing a physical space or center with tailored services could improve their educational experience.



**TRIO McNair Faculty Research Mentor Dr. Shanna Davis** is the Assistant Professor of School Psychology at Eastern Washington University. Her research interests include development of academic and social-emotional skills in early childhood environments, Assessment, Instructional Coaching, and Supervision.



Jennyfer Mesa

### **Cross-Cultural Placemaking in Latino Central Washington**

Workers of primarily but not exclusively Mexican descent in Western Washington carry out agricultural labor. Since the 1940s Washington State has been successful in recruiting Latino migrants to work in agricultural activities, as well as the manufacturing, service, and food processing sectors of Central Washington. Currently the area is home to first, second, and now third generation Latinos, and Hispanics have been the majority population of over twenty cities and small towns, and are the majority population in two counties in 2010. Although groups of Latinos physically reside in the communities of contemporary Central Washington, and have done so in some cases for generations, it may be argued that they have had minimal impact and left differing impressions on the cultural landscapes of the region. Using various research tools including census data, fieldwork observation, government record analysis, and face-to-face interviews with business owners, seasonal migrants, and local residents, this study will examine issues of Latino placemaking in two small towns. Othello and Sunnyside. These towns demonstrate contrasting patterns of how Latino population growth, culture, identity, and sense of place has evolved and impacted the built environments, physical landscapes, and governing bodies of the communities. These two towns represent very different and distinctive patterns of Latino placemaking in a region that has historically not embraced diversity.



**TRiO McNair Faculty Research Mentor Dr. Dick Winchell** is a Professor of the Department of Planning & Public Administration at Eastern Washington University. His research interests involve Comparative Urbanization, Sustainable Cities (Europe, Asia, North America), Urban Morphology, Tribal Transportation, Community Development, Tribal Planning, Neighborhood Planning, and Housing.



David Nguyen

### **Evaluation of the Utility of the American College Health Association's National College Health Assessment II Survey for Identification of Health Behaviors and Risks Associated with Academic Performance**

Poor academic performance and low rates of degree completion are problems that face institutions of higher learning. Studies investigating the effects of health behaviors and risks on student academic performance have shown there is an association between student health and academic performance. Therefore, identifying student health behaviors and risks relevant to academic performance would be beneficial to educational institutions and the students they serve. This information is necessary for student health services to effectively design and target evidence-based health programs to improve student outcomes.

To evaluate the utility of the National College Health Assessment II (NCHA II), a commonly administered college health survey, that the administering company claims is useful for identification of common health and behavior risks relevant to academic performance.

We used NCHA II data collected from a public university at four intervals between 2010 and 2016. The rank order of association between a selection of student health factors and academic performance were determined using logistic regression and boosted classification trees. The results of these secondary analyses were compared with the rank order of student health factors that is presented in the NCHA summary report provided by surveyors to universities.

We found that student health factors identified by the NCHA II summary report as commonly affecting student academic outcomes were inconsistent with our secondary analyses. The summary report ranked student stress and anxiety as the top health factors impacting academic performance. Our secondary analyses found that the effects of stress and anxiety on student academic performance are not statistically significant and that depressive correlates were the most significant student health factors. College health services that use NCHA II data should be aware that inferences based on the summary report may be misleading, and that secondary analysis is necessary for accurate inferences.



**TRIO McNair Faculty Research Mentor Dr. Krisztian Magori** is the Assistant Professor of Biostatistics at the Department of Biology, Eastern Washington University. Besides teaching biostatistics, he is generally interested in mathematical and computational biology. He studies the ecology of infectious diseases that are transmitted by insect vectors from an interdisciplinary perspective.



Donya Quarnstrom

### **Does Financial Aid Impact Student Success at Regional Comprehensive Universities in the U.S.? A Panel Data Approach**

In Washington State, King and Spokane Counties are the two highest population counties with the greatest absolute employment levels. In 2014, the median wage in King County (Seattle) was \$70,589 while in Spokane County the median wage was \$42,650. This paper looks to discover some of the causes of the large wage difference, and if the higher wage in King County is offset by higher costs to live there. Theories and data are collected from published peer reviewed articles, Bureau of Labor Statistics, City Data, United States Census Bureau, and Massachusetts Institute of Technology's (MIT) Living Wage Calculation of minimum cost-of-living standards. The results suggest that at lower wages, the wage differential does not offset the high cost-of-living in King County. However, at higher wage levels, the wages from transferable job skills between Spokane and King County does offset King County's higher cost-of-living. In particular, differences in employment in certain industries and the overall population level also explain a portion of the wage differential.



**TRIO McNair Faculty Research Mentor Dr. Kelley Cullen** is the Assistant Professor of Economics at Eastern Washington University. Her research interests include labor, health and sport economics.





Audel Rosas

### **The International Sojourn and University Dynamics: A Cross-Cultural Perspective on International Students**

Focusing on intellectual development over social development has become the dominate philosophy on addressing student development within the international student population. This dominate method on conducting research on international students has produced limited research fixed upon the intellectual dimension of student development. The findings gathered at Eastern Washington University through the Asia University American Program suggest that student development is composed by an intellectual dimension along with a psychosocial dimension. Both components are intrinsically linked and are necessary for a successful international student program that facilitates successful student integration and development. Through understanding the procedures and role that the Asia University American Program provides for the Japanese students during their sojourn experience, more research can be seen as needed in broader areas than the academic achievement lens to understand the student development of international students.



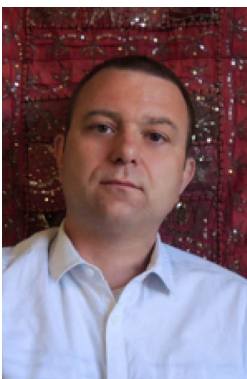
**TRIO McNair Faculty Research Mentor Dr. Majid Sharifi** is the Associate Professor of International Relations and Political Science at Eastern Washington University. His research focuses on the intersection between security and nationalism in the Middle East with a special emphasis on US Foreign Policy.



Lidia Velasco

### **Emotion in Translation: Korean-Spanish**

With the growth of globalized media, researchers (Citations) have focused on how to translate across cultures and decipher emotions, especially when translating popular media. The components included in translation are not only knowledge of the language, but also knowledge of the cultural connotation expressed by a word. Using a children's animated movie named NAME, I analyzed Korean-Spanish translation using theories of emotion, cultural connotation, and language (Citations). Emotions in Korean are not easily translated into Spanish because of cultural differences in emotional expression. My study showed that the word choices of the translator affects not only the story, but also the viewer's perception of the feeling of characters. In this study, NAME, the translator of this animated movie, made word changes that altered a scene's connotation to make it more understandable to Spanish viewers. In my study, I show how the translators makes complex word choices to deal with differences between the emotions of characters as intended in the source language and the emotional expectations of the target language audience. Translators, to do a good translation, need to consciously reflect on word choice to balance these intentions and expectations.



**TRIO McNair Faculty Research Mentor Dr. Michael Zukosky** is an Associate Professor of Anthropology in the Department of Geography and Anthropology at Eastern Washington University. His research focuses on development and conservation policy, cultural relations of various forms of 'science and technology,' and increasingly, the role of translation in international organizations involved with development.



Minerva Zayas

### **Beyond Labels and Boundaries: Queer Chicana Individuals and Psychological Identity Development**

Chicana women experience gender oppression and have actively challenged gender bias since before the start of the Chicano social protest movement (Garcia, 1997). Historically, as Mexican American women and men started working towards equal rights, Chicana women have experienced marginalization because of their voice and gender status. Additionally, queer Chicana women, or women that identify within the LGBTQ+ communities, have been oppressed within the Chicana feminist movement. Minimal research has been performed on the positive psychological identity development of Queer Chicana women. By using a mixed methods approach to challenge general ideas around the LGBTQ+ community and wellbeing, this research seeks ways to serve diverse ethnic and sexual minorities. Highlighting Chicana women's experiences around sexism, culture, and religion, I will be performing in-depth interviews on LGBTQ+/Queer Chicana women that attend Eastern Washington University. As I continue to conduct interviews, I predict that my analysis will bring greater visibility to Queer Chicana women and the diverse ways in which they construct their sex and gender identities. Their narratives will contribute to enriching current understandings of the multiple and complex ways that Queer Chicanas in the United States frame selfhood.



**TRIO McNair Faculty Research Mentor Dr. Jessica Willis** is a Visiting Assistant Professor in Women's and Gender Studies at Eastern Washington University. She presently serves as Coordinator of the new Graduate Certificate in Gender and Sexuality Studies. Her research focuses on Semiotics and Visual Representations of Gender, Sexuality, and Race on the Body; Feminist Theories and Methodologies; Youth Culture and Cultural Constructions of Girlhood in the early 21st century, U.S.

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