TRiO McNair

MAY GATHERING 2013

Inspiring the Future and Changing Lives

Ronald E. McNair

Ronald E. McNair was born October 21, 1950, in Lake City, South Carolina. McNair was a member of Omega Psi Phi Fraternity Inc.

In 1976, he received his Ph.D. in physics from the Massachusetts Institute of Technology under guidance of Professor Michael Feld becoming nationally recognized for his work in the field of laser physics.

The McNair program was established by the U.S. Department of Education and named for astronaut and Challenger space shuttle crew member Ronald McNair.

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McNair Staff

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What is McNair?

- Funded by Congress through the Department of Education
- Eastern's TRiO McNair Scholar Program began in 1995
- Purpose: To prepare low-income, first generation and/or underrepresented students for success in doctoral programs.
- Since 1995:
    - 13 have earned Ph.D.'s
    - 93 have completed their Master's Degree
    - 88 are currently enrolled in Graduate School
      →Out of 88, 37 are working for their Ph.D.

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New Scholars

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2012-2013 Cohort

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University of Washington Trip

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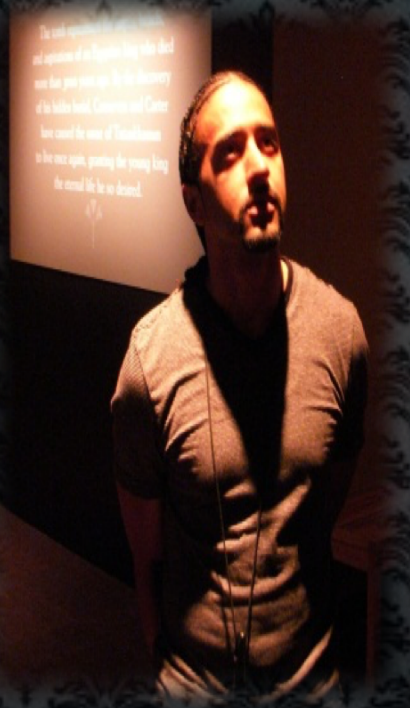
University of Washington Trip



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Wisconsin Trip

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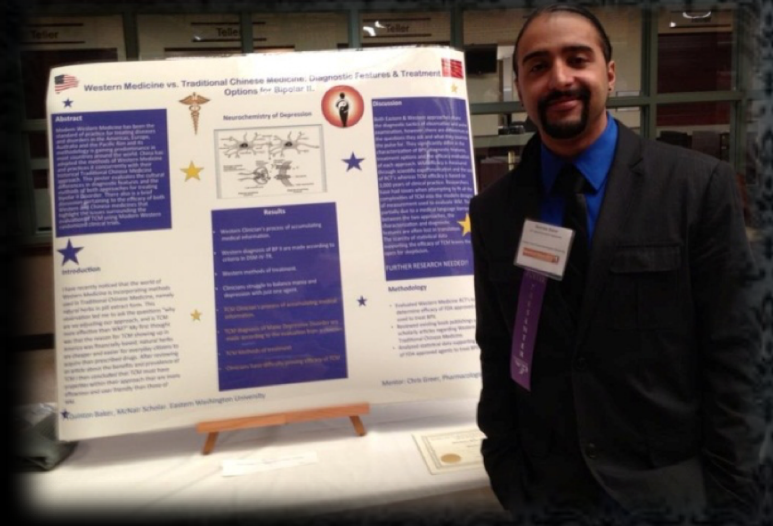
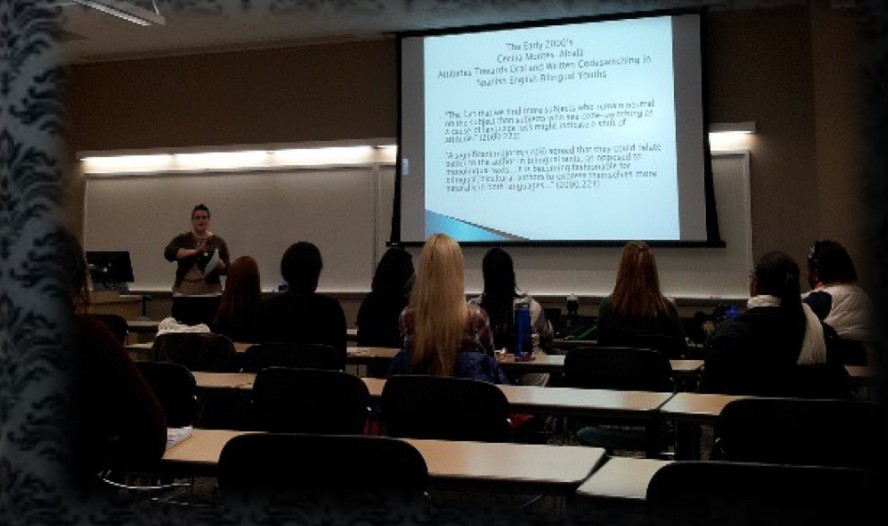
Presentations





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The Ronald E. McNair Scholar's Research at NCUR 2013

Inspiring the Future and Changing Lives

Anthony Austin-Walker, History & Humanities
Faculty Mentor: Garrett Kenny, PhD, English/Religious Studies
Research: "Baptism, Divine Healing, and Deominic Expulsion in Pre-Nicene Christianity: A Defense for the Invocation of the Holy Name Jesus"

Abstract: Christian teaching on baptism, from its formation until the present, has been forced into the seat of controversy. Within the school of theological thought and biblical criticism, scholars have used various approaches and taken a variety of stances regarding the original baptismal praxis of early Christians. One of the main objects of controversy is the form of invocation or formula used during the baptismal ceremony. Considerable amounts of Early Christian literature and Biblical and extra-Biblical works contain references to use of the name "Jesus" in some manner or as an invocation during the baptismal ceremony such as the phrase, "in the name of Jesus." A difficulty that arises when comparing the ancient sources is that a few of the textual witnesses speak of a triadic invocation or formula being spoken in the baptismal rite: "In the name of the Father, and of the Son and of the Holy Spirit." This research furthers the discussion regarding Early Christian baptism, focusing on the Pre-Nicene era, and attempts to examine the early evidence from Biblical, Apocryphal, Pseudepigraphical and historical sources concerning this topic. The unique part of this research is that it examines the ritual of baptism in light of two other Early Christian rites, namely, divine healing and exorcism. As is evident from Early Christian texts, the name "Jesus" was used in the practice of divine healing and exorcism. This specified research focuses on several distinct components: 1) the actual records of baptism in ancient sources with the various baptismal "formulas" given, 2) a discussion of the exalted status that the name of Jesus held in Early Christendom, 3) How this exaltation applied to the rites of baptism, divine healing, and exorcism, that is, how this exaltation led to use of the name "Jesus" in these rites. By thoroughly investigating these key elements, a compelling explanation of the "hows" and "whys" of Early Christian baptism can be achieved. Secondly, it can be inferred that the most common form of baptism involved a focus on the name and person of Jesus Christ, this also being true for the rites of divine healing and exorcism.

Bina Walker, Communication Studies, Economics & Women and Gender Studies
Faculty Mentor: Kelley Cullen, PhD, Economics
Research: "An Econometric Inquiry of the Declining Sex Ratio in India"

Abstract: Data from the 2001 and 2011 Indian national census suggests that the sex ratios of children are increasing in favor of males. Whereas the average international sex ratio is 1.01 males to every 1 female, presently, India's sex ratio is 921 females to every 1000 males and falling. Across the various states of India, the sex ratio varies greatly. For example, some states such as Kerala and Andhra Pradesh have sex ratios above the world average, but in certain states of India such as Punjab and Haryana, this ratio is as low as 876 and 861. Amongst the explanations being offered to explain the declining sex ratio include the strong cultural preference for males. Increased availability (reduced cost) of abortions as well as technologies allowing for early detection of sex makes it easier for households in India to selectively abort female fetuses. Because there are wide differences in sex ratio by state, an econometric investigation is undertaken to attempt to identify socioeconomic and demographic factors that influence the differences in sex ratio. If one can identify the key variables associated with lower sex ratios for females, better policies can be designed to correct the declining trend. Using data from the most recent comprehensive census in 2010, this research compares different states across India in an attempt to identify key variables that are related to the declining sex ratio. An Ordinary Least Squares (OLS) model was produced to statistically measure the impact of major explanatory factors such as population, income, religion, electricity, education levels, and abortion rates on the state sex ratio (dependent variable). Findings suggest that although some religious groups are associated with lower female ratios, because the religions are distributed geographically, there are likely other factors at work such as income and education that can explain more of the variation in sex ratios across states.

Grace Cooper, Anthropology & Spanish
Faculty Mentor: Julia Smith, PhD, Anthropology
Research: "Exploring Perceptions and Intentions of Code-Switching Among Bilingual Spanish-English Speakers"

Abstract: The United States is an increasingly multilingual place. As a result, many anthropologists, linguists, and other scholars have begun to research how bilingual and multilingual speakers mix languages when they communicate, a process called code-switching. This study examines perceptions and understandings of code-switching in bilingual English-Spanish communication in the Inland Northwest, an area which has not been studied extensively. Earlier studies have reported that speakers hold a negative view of code switching generally, and of the use of Spanish in particular. I was interested in finding out if this still holds true today. To do this, I conducted hour-long interviews with ten Spanish-English speakers. We discussed four musical selections as examples of code-switching as well as broader themes of language use. From their responses I have identified a set of major shifts in how scholars currently characterize code-switching. English has historically been the preferred language, even among Spanish-dominant speakers, but I found that Spanish has now become the more desirable language. Additionally code-switching, which had often been negatively marked in other studies, is now interpreted as a practice with social, communicative, and potentially monetary value. As a whole, this study suggests that views of code-switching, particularly Spanish-English code-switching are changing rapidly within the United States. This renders older studies problematic for understanding current language use.

Martee Shafer, Geography
Faculty Mentor: Carmen Nezat, PhD, Geology
Research: "The Effects of Fertilizer and Calcium Carbonate on the Mobilization of Arsenic in Groundwater"

Abstract: Arsenic's ability to become leached into groundwater has placed millions of people at risk for developing life-threatening diseases all over the world. Locally, within Spokane County, isolated private wells have shown elevated levels above EPA drinking water standards of 10 ppb. Exposure to arsenic in drinking water causes many diseases such as cancer, cardiovascular disease, and keratoses. The arsenic in groundwater is commonly leached from natural sources in rock formations but may be enhanced by the addition of fertilizer and calcium carbonate to large crop fields. To determine if they are contributing to the contaminated groundwater, basalt, granite, and sedimentary deposit rock samples were leached with fertilizer or calcium carbonate solution for one week. There was no significant difference among the treatments. Of the rock and mineral samples, pyrite released the most amount of arsenic when treated with ultrapure water. It is possible that if pyrite (FeS2) is present in the rock or soil of the Spokane region, then arsenic may be leached into the groundwater. This, however, may not be the only source of arsenic.

Melissa Rhodehouse, Chemistry
Faculty Mentor: Yao Houndonougbo, PhD, Chemistry
Research: "Molecular Simulation of Adsorption Separation of CH4/CO2 in Zeolitic Imidazolate Frameworks"

Abstract: Zeolitic imidazolate frameworks (ZIFs) are porous materials in which the silicon and bridging oxygen in zeolite frameworks are replaced with a transition metal and an imidazolate linker, respectively. Grand Conical Monte Carlo simulations are used to calculate the uptake capacity of carbon dioxide (CO_2), methane (CH_4), and their mixtures in a series of ZIFs with five different 4,5-functionalized imidazole units, namely ZIF-25, -71, -93, -96, -97. The results will be compared to experimental data to determine accurate Force Field parameters. The results of our calculations will also help in screening ZIF materials for their use in CO_2 capture and separation.

Michelle Keller, Biology
Faculty Mentor: Robin O'Quinn, PhD, Biology
Research: "The Effects of Root-Fungi Mutualism on the Development of Trichomes on Tomato Plants"

Abstract: Numerous crop plants demonstrate increased nutrient uptake, pathogen resistance and tolerance to drought and herbivory when they form symbiotic relationships with fungal species. Arbuscular mycorrhizal fungi (AMF) infect plant root cells, enabling them to acquire nutrition from the plant while enhancing root function, thus promoting overall plant health. Plants also have structural strategies to cope with environmental stresses. Trichomes, projections from epithelial cells, found on leaves and stems can counter herbivore attacks and mitigate some of the ill-effects of drought. Trichome shape and density diminish the effectiveness of herbivores by slowing the rate at which they chew, limiting their mobility, and by delivering secondary metabolites, which are often poisonous. The overall density of trichomes, known as pubescence, promotes water conservation by reflecting solar radiation and reducing evapotranspiration by slowing airflow over plant surfaces. We hypothesize that inoculated tomato plants will acquire water and nutrients more readily and experience less stress, which will increase trichome densities on leaves and stems. This study aims to determine 1) if the density and types of trichomes on Solanum lycopersicon differ as a result of inoculation with AMF, and 2) if they differ in pubescence between hybrid and heirloom cultivars. Soils were autoclaved, and seeds for three high sugar variety tomato cultivars, two heirloom and one hybrid, were treated with a hydrogen peroxide solution to prevent contamination. Treatment plants were inoculated with four species of AMF (Glomus mosseae, G. intraradices, G. aggregatum, and G. tunicatum), and housed in the EWU Greenhouse in a random arrangement that was subject to rearrangement throughout the study to reduce variation from heat and light. We will conduct trichome counts on adaxial and abaxial surfaces of leaf segments from the third mature leaflet and on a cut portion of stem. We will use ANOVA and correlation/regression to assess differences in trichome densities among and between treatment groups and cultivar types.

Lateasha Lewis, Children's Studies & Sociology
Faculty Mentor: Sue Wright, PhD, Children's Studies
Research: "Exploring Perceptions and Intentions of Code-Switching Among Bilingual Spanish-English Speakers"

Abstract: This study provides insight into the ways youth understand bullying. Findings are based on 253 surveys from current middle school students. Each survey was analyzed using SPSS software. This paper focuses on three specific findings: 1) where students are bullied, 2) who is most likely to be bullied in terms of gender according to this study, and 3) what students want adults to do in combating bullying behavior. Students frequently answer they were more likely to be bullied at school than any other place. The three most frequent things students proposed adults do to help combat bullying was to; Monitor in the hallways during transition between classes and assemblies more , Have more bully prevention activities to make the kids more aware and provide cameras throughout the school that work and have audio. Disturbingly, more than half of the participants in this study reported either being bullied or witnessing bullying.

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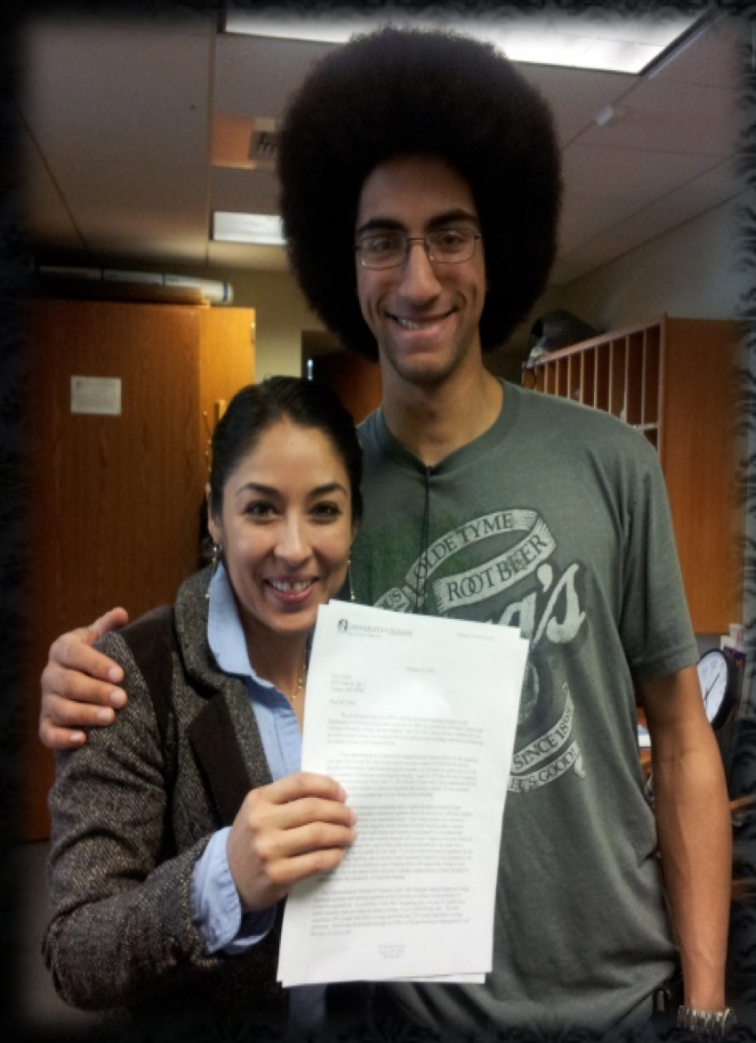

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Congratulations!
EWU MCNAIR SCHOLARS ACCEPTED TO 2013 SUMMER RESEARCH INTERNSHIPS

TRiO McNair Scholar Program

MELISSA RHODEHOUSE,
Biochemistry Major, Minor in Mathematics

Ms. Rhodehouse has received a **Center for Science of Information NSF Fellowship**. She will be assisting Dr. Shankar Subramaniam at the University of California, San Diego with molecular modeling and bioinformatics. This internship provides room and board in La Jolla, CA, travel expenses and a $4,250 stipend.

JOSÉ MÉNDEZ,
Criminal Justice and Sociology Major

Mr. Méndez has received two Summer Research Opportunities Programs (**OSU SROP**). One at the Ohio State University and another one at Michigan State University. Michigan State internship provides room and board on each campus, travel expenses and a $3,500 stipend and Ohio State provides room and board, travel expenses and $3000 stipend for eight weeks.

GRACE FAY COOPER,
Anthropology & Spanish Major, Minors in Sociology and Linguistics

Ms. Copper has received a Natural History Research Experiences (**NHRE**) internship at the **Smithsonian Institution's National Museum of Natural History in Washington, D.C.** She will be collaborating with Dr. Joshua Bell, Curator of Globalization. This internship provides room and board in Washington, D.C., travel expenses and a $5,500 stipend.

TRiO WORKS

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"Whether or not you reach your goals in life depends entirely on how well you prepare for them and how badly you want them. You're eagles! Stretch your wings and fly to the sky!"

-Ronald E. McNair

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Cassandra Aguilar

Attending: Seattle University for Master of Nonprofit Leadership

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Liliya Rudneva

Attending: George Fox University for PsyD Clinical Psychology

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Anthony Austin-Walker

Attending: Yale University for MA, Religion

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Bina Walker

Attending: Southern Connecticut State University for MA, Women Studies

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Nathan Lewis

Attending: Eastern Washington University for Master of Social Work

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Lateasha Lewis

Attending: Washington State University
for MA, Educational Leadership

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Kyle Faltin

Attending: University of Albany for PhD, Political Science

TRiO McNair

Elizabeth Davila

Attending: Texas Tech University for
PhD, Human Development & Family Studies

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

-Ronald E. McNair

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Jose Mendez

Growing up, I personally felt that I would never really go anywhere in life. After high school I attended a year of college, and soon after entered the workforce. I ultimately sought employment at a school district in the City of Grandview. I soon discovered the social injustices that were adamantly portrayed within education at the high school level, where capable but marginalized students shared with me their reasons for behavioral issues, issues with gang membership, and absences for multiple reasons. This sparked my interest in the criminal justice system and equality for those who are unfairly treated on an everyday basis. Eventually this and the birth of my children gave me ambition to pursue an Associate's Degree, after which I applied to Eastern Washington University and was accepted in 2011. I remember one staff member in particular, Dr. Christina Torres Garcia, current director of the McNair Scholar Program, who I first met at my community college. While her class was difficult, it challenged my critical thinking and most of all compelled me to speak with her about first pursuing a master's degree. At Eastern, it was with her inspiration and persistence, as well as the services of the McNair Scholar Program, that I am now pursuing a doctoral degree.

The TRiO McNair Program has significantly impacted my life, my future and the opportunities of education beyond bachelor's degree in pursuit of a PhD. It changed the way I view my persona and what I am capable of as a student.

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Grace Cooper

My family has always been a support for me, but I must admit there have been limitations to this support. Being that we are a low income family with no background in higher education, I was not exposed to the social capital that is essential to succeed in careers that require post-secondary education. However, in spite of all the trials, it has been a mutual love that bonded all of us and allowed me to be a successful first generation college student.

During my second year at Eastern Washington University, I enrolled in the course Introduction to Chicano Studies taught by Dr. Christina Torres Garcia, who is also the director of the TRiO McNair Scholar Program. For this class, I wrote a research paper in which I explored the lives of Selena Pérez and Ritchie Valens and their careers in the mainstream music industry. Dr. Torres Garcia recommended I enter my paper in the upcoming student symposium and with her guidance I submitted my paper. After my presentation, I developed a craving for research and knowledge. Dr. Torres Garcia showed me how the McNair Program could satisfy that craving, and with her encouragement I applied and was accepted.

Being a TRiO student has given me the motivation and encouragement that is necessary to tackle the academic and emotional challenges that come with transforming myself into a scholar. I now know that I will only be content through obtaining a PhD in anthropology and maintaining an active role in the field. TRiO has provided me with the knowledge and skills I will need to be successful in all my future career endeavors.

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Bina Walker

My parents are originally from India. They came to the United States in 1975, neither had the opportunity to complete a university degree. My sister and I will be the first in our family to graduate from a 4-year institution, and I am the first to pursue graduate school. The main challenge that I had was applying to college. Both my parents told me that education was important; however they lacked the knowledge to teach me what that actually entailed. My sister was the one who encouraged me to apply to college. It was one of the happiest days of my life when I got the acceptance packet from EWU.

TRiO has greatly impacted my success in college. The TRiO McNair Program at Eastern has allowed me to do research, which has helped me to enlighten my parents on what I am learning about women's rights in India. I am also able to educate them on the history of the United States, the women in the US, and other things that I have learned throughout my courses at EWU. Anytime I needed assistance, a support group, or someone to talk to, McNair has been there. They have taught me how to write a CV, how to construct an abstract, how to contact professors, and also they have provided opportunities to present my McNair research.

My goal is to receive a PhD. TRiO McNair has given me the tools to achieve my goal. My hope for the future is that I can attain a PhD so my children can know that women are capable of attaining PhDs and can have positions just like men.

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Lateasha Lewis

My family is everything to me. I grew up in a single parent household, however, I still maintained a great relationship with my dad. My family is my backbone and without them pushing me I would have not achieved some of the goals I have completed today.

A challenge I have faced is working two jobs while attending school full time. Sometimes it gets hard and all I want to do is give up. However, I know that all the hard work I am doing today will pay off in the future. I think being a first generational student, you definitely have more challenges. You don't really know what to expect until you get here and even once you're in college it still can be difficult to properly navigate the system.

A goal that I have is to become a better writer. The McNair program has prepared me with all the skills I need to be a better writer. There are so many resources the TRIO program provides to assist with writing.

My hope for the future is that I complete graduate school and help low income children and their families succeed. I want to continue to do research and positively affect communities.

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"True courage comes in enduring…persevering…and believing in oneself."

-Ronald E. McNair

TRiO McNair

Earned Ph.D.'s

Dr. Kerensa Allison
Anthropology
Washington State University
EWU McNair Scholar 1996

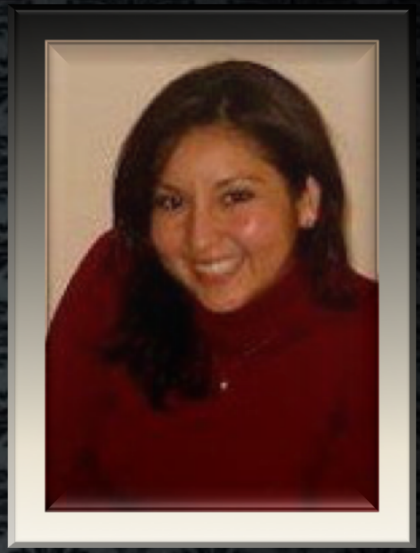
Dr. Rita Davis
Physical Therapy
University of Montana
EWU McNair Scholar 1996

Earned Ph.D.'s

Dr. Martín Meráz García
Political Science
Washington State University
EWU McNair Scholar 1996

Dr. Christina Torres García
Cultural Studies and Social Thought
Washington State University
EWU McNair Scholar 1997

Earned Ph.D.'s



Dr. Micheal Callaway
English Rhetoric and Composition
Arizona State University
EWU McNair Scholar 1997

Dr. Nallely Galvan
Educational Psychology
University of Illinois
EWU McNair Scholar 1998

Earned Ph.D.'s

Dr. Winona Beck
Program in American Studies
Washington State University
EWU McNair Scholar 1998

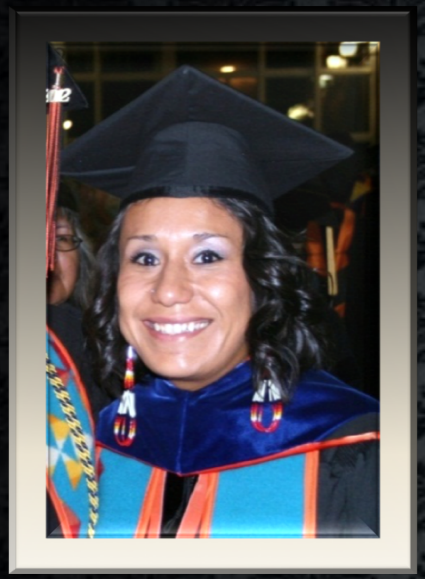
Dr. Gianna Hammer
Molecular & Cellular Biology
University of California
EWU McNair Scholar 1998

Earned Ph.D.'s

Dr. Atara Clark
Psychology
University of Utah
EWU McNair Scholar 1998

Dr. Erin Dietel-McLaughlin
English
Bowling Green State University
EWU McNair Scholar 2001

Earned Ph.D.'s



Dr. Alvina Crawston Marris
Clinical Psychology
Oklahoma State University
EWU McNair Scholar 2003

Dr. Frank King
Program in American Studies
Washington State University
EWU McNair Scholar 2004

Earned Ph.D.'s

Dr. Sheikh Omar Jobe
Molecular Endocrinology & Physiology
University of Wisconsin-Madison
EWU McNair Scholar 2006