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The McNair Journal is the official journal of the Ronald E. McNair Scholars Post Baccalaureate Achievement Program at the University of Nevada, Reno. The program is designed to provide research opportunities and other related academic experiences that promote the acquisition of the doctoral degree (Ph.D.) for first generation, low-income, and underrepresented college juniors and seniors. The McNair program is federally funded at $231,000 per year. The program was created by Congress in an effort to increase the number of underrepresented persons pursuing teaching, research, and administrative careers in higher education.

Acknowledgments
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Foreword:

It is my great pleasure to introduce the third edition of the University of Nevada, Reno McNair Scholars Journal. Our program is named for astronaut and Challenger crew member Ronald E. McNair who exemplifies the potential of underrepresented students to reach the highest rungs on the ladder of academic achievement. The purpose of our McNair program is to assist undergraduate students from backgrounds that are traditionally underrepresented in graduate school to prepare for the pursuit of a doctoral degree. The foundation of the program is based on the services provided by our academic mentors who guide scholars through the development, execution, and presentation of a substantive research project. The research papers published in this third edition of the McNair Scholars Journal are the product of the strong collaborative relationships between our scholars and their academic mentors. Our McNair Scholars are preparing to become part of a highly educated generation that will contribute to a prosperous future for our country; they will also serve as role models and mentors for those who follow in their footsteps. I would like to acknowledge the scholars whose papers were selected for publication and offer my most sincere thanks to our academic faculty who have given so generously of their time and talent to mentor our scholars. I am happy to report that our program was selected for an additional five year funding cycle beginning in October of 2008. Congratulations to all who have contributed to the success of our scholars and our program.

Rita Escher, Director
Background:
The purpose of the Ronald E. McNair Post-Baccalaureate Program is to encourage undergraduates from backgrounds that have been historically underrepresented in university faculty and research professions to pursue doctoral degrees. The federally funded program is in its sixth year at the University of Nevada, Reno. Dr. Ronald McNair, whose journey to become an astronaut inspires all who seek to achieve ambitious dreams, is a fitting namesake for the program. Although Dr. McNair died in the explosion of the Challenger space craft, his strong message of self determination still resonates with those who strive for excellence:

“Whether or not you reach your goals in life depends entirely on how well you prepare for them and how badly you want them.”

-Ronald E. McNair, Ph.D.

Program Overview:
The foundation of the McNair Scholars Program is the summer research institute. For seven weeks, scholars engage in research projects closely guided by academic faculty mentors. For many students, the summer institute provides their first experience conducting original research and their first opportunity to work closely with a faculty mentor. The relationship forged between scholar and mentor can be the most significant academic connection that a scholar makes at the university.

In addition to conducting research, scholars also take part in GRE preparation workshops during the summer institute. During the academic year, scholars participate in McNair seminars that assist them to complete competitive graduate school applications and provide information related to financing graduate education. Scholars attend national McNair conferences where they present their research and connect with other scholars and faculty from across the country.

In addition to receiving a $2,800 research stipend during the summer institute, scholars also benefit from waived application fees at many graduate schools. GRE fee waivers are also available to McNair Scholars. The greatest benefits, though, are not financial. The McNair program enables scholars to form lasting bonds with fellow scholars and with academic mentors. These relationships allow scholars to see themselves in roles they might not otherwise have considered possible such as professors, researchers, and administrators in institutions of higher education.

Eligibility:
Students are eligible for the McNair program if they have completed at least 30 credits, but not more than 92 credits and have a cumulative grade point average of at least 2.9. Students must also meet the federal criteria for selection: Neither parent has a bachelor's degree and the student demonstrates financial need OR the student is a member of a group that is traditionally underrepresented in graduate school: African American, Native American, Hawaiian / Pacific Islander, or Hispanic/Latino. Students must be U.S. citizens or eligible non-citizens (eligible for U.S. federal aid).

Application Process:
Applications are available on the McNair web site: www.unr.edu/mcnair or from the TRiO Office located in Suite 200 of the Thompson Student Services Building.
The McNair Scholars Program is
Fernanda Bosada

Mentor: Dr. Scott Clark
Major: Biochemistry
Research Topic: When the maintenance man fails: Maintaining the expression and state of differentiation of an interneuron in *C. elegans*

Fernanda Bosada is a biochemistry major in her senior year at the University of Nevada, Reno. She was born and raised in Chihuahua, Mexico, and moved to Reno in December of 2002. Fernanda has been intrigued by science ever since her first biology class in Mexico, where she first learned about genetics and the elements. Fernanda plans to enroll in graduate school in the fall of 2010 to study molecular biology and genetics.

ABSTRACT

During development, neurons extend axons to targets, form synaptic connections, and begin to exhibit the attributes of mature, functional neurons. Neurons must retain their differentiated state and express the correct complement of ‘terminal differentiation’ genes throughout the life of the organism to maintain function of the nervous system. In the nematode *C. elegans* the two PVQ neurons are located in the tail and each extends an axon along the ventral nerve cord to the head. PVQ can be visualized in living animals using a transcriptional *sra-6::gfp* reporter. The gene *sra-6* encodes an odorant receptor and is expressed exclusively in PVQ and in two other neurons (ASH, ASI) in the head starting soon after the cells are born during embryogenesis. As such, the *sra-6::gfp* reporter is a terminal differentiation marker for PVQ. Mutations in six genes (*tba-1, unc-14, unc-33, unc-44, unc-51, unc-119*) that disrupt axon outgrowth were found to eliminate expression of the *sra-6::gfp* reporter in PVQ soon after hatching. Expression of the *sra-6::gfp* reporter in PVQ was high in embryos and newly hatched L1 larvae yet the GFP signal was greatly reduced within 2-3 hours and was typically not detectable after 5-6 hours. Expression in ASI and ASH was not altered and other axon outgrowth mutations did not affect *sra-6::gfp* expression in PVQ, indicating that axon outgrowth defects *per se* did not alter *sra-6::gfp* expression. These observations suggest that these six genes act in a process that maintains *sra-6* expression or the differentiated state of PVQ. I plan to examine the expression of other genes that are expressed in PVQ to determine whether they are also affected by mutations in these six axon guidance genes. I will also express the gene *unc-119* specifically in PVQ to determine whether the *sra-6* expression phenotype is cell autonomous and when *unc-119* activity is needed. These experiments will address how these six genes function in maintaining *sra-6* expression in PVQ.
Julisa Edwards

Mentor: Dr. G. Richard Scott

Major: Anthropology and English

Research Topic: An Odontometric Analysis of Living Southwest Indian Populations

Julisa came to UNR as a transfer student from Lassen College in California. She is a dual major in English (Language & Linguistics) and Anthropology. With a 3.97 GPA, she has received several scholarships while a student at UNR. Julisa’s research project took her to the campus of Arizona State University to measure the teeth of Southwest Native American Indian populations. Julisa enrolled at the prestigious University of California, Berkeley in fall 2009 to pursue a doctorate degree in German.

ABSTRACT

An odontometric analysis was conducted on dental casts from three Southwestern Native American Indian populations. Statistical data revealed that Pima have the largest teeth, while the Hopi and Navajo group together. These results may indicate admixture between northern groups, but not between northern and southern groups. Future directions include reevaluating the data for accuracy and including other Native American populations.
Gretchen Hill

Mentor: Dr. Paul Starrs and Dr. Sandra Ott
Major: Geography
Research Topic: Basques’ Attachment to Place in Nevada and the Basque Country

Gretchen has received several scholarships that recognize her academic achievement. She also received the Association of Pacific Coast Geographers President’s Choice Undergraduate Paper Award at an annual conference in Long Beach, CA during her undergraduate career. Before becoming a McNair Scholar, Gretchen was in the TRiO Scholars Program where she worked as a peer mentor helping single parents, like her, with the struggles of navigating college life. She is a wonderful role model for others. She enrolled at the University of Oregon in the fall of 2009 to pursue a master’s degree in geography. While there, Gretchen secured a graduate assistantship in the school’s map library.

ABSTRACT

Research in the French Basque country reveals that rural people have a strong sense of attachment to place which figures prominently in the process of self-identification (Ott 2008). I propose to explore “attachment to place” within the context of rural Basque Americans in Nevada and wish to find out whether rural Basques who have a strong sense of ethnic pride and an interest in their Basque heritage have a sense of attachment to place that includes both Nevadan and Old World spaces.
Lisa Maletsky

Mentor: Dr. Ramona Houmanfar
Major: Psychology & Sociology
Research Topic: The Effect of Accurate and Inaccurate Rules on Communications and Productivity in an Organizational Analogue

Since returning to school Lisa has received several scholarships that recognize her academic achievement while balancing her responsibilities as a mother of two and working for the McNair program. Lisa also serves as the treasurer of Psi Chi National Honor Society in Psychology and will be assuming the position of president next year. In addition, she is developing her next undergraduate research project that will be a pilot study for postpartum depression prevention. She is interested in pursuing graduate work in the field of psychology that will investigate many preventative and proactive therapies for pregnant women and parents to improve parent-child interactions and reduce child abuse and neglect.

ABSTRACT

Recent studies in Dr. Ramona Houmanfar’s experimental lab at the University of Nevada Reno have shown that when environmental consequences no longer match the stated rule, more incidences of rumor appear and productivity worsens. This study investigated the impact of accurate and inaccurate (including magnitude of inaccurate) organizational rules on the number of instances of rumor, correct responding, and productivity (correct responding per minute). Participants worked in pairs (dyads) to answer a group of math and memory problems and earned monetary incentive based on their collective score. Point values per correctly answered question were systematically varied among three conditions ((A) accurate, (B) inaccurate low, and (C) inaccurate high) across six conditions. Two counterbalanced sequences were administered: ABACBA and ACABCA. Results indicated that productivity and correct responding varied across conditions although no clear trends were found with respect to rumor data.
Marvice Marcus

**Mentor:** Dr. William O’Donohue  
**Major:** Psychology  
**Research Topic:** Quality Improvement of Therapeutic Sessions for Victims of Sexual Assault

Marvice is from Las Vegas, NV. He was recently honored with the College of Liberal Arts 2009 Dean’s Outstanding Student Award for Social Sciences (Psychology). He has done many things while at the University of Nevada, Reno including serving as president of the Psi Chi National Honor Society in Psychology and serving on the College of Liberal Arts Student Advisory Board as a representative for the Psychology Department. He was treasurer of the Delta Epsilon Iota Academic Honor Society, a tutor at Traver Middle School, and a former TRiO scholar where he served as a peer mentor for students in that program. He held a 3.81 GPA as an undergraduate which helped propel him to pursue a master’s degree in Marriage, Couple, & Family Counseling.

**ABSTRACT**

Social relationships are formed to enhance the quality of a person’s life. Taking into consideration the importance of relationships, it is necessary to examine the emotional, physical, and mental impact of sexual assault, and the quality of care provided to victims thereafter. The deviant behavior of rape impacts a victim’s life on several different levels. It is here that the lines between “acceptable” and/or “normal” behavior have been crossed. Following a sexual assault, an adult victim will weigh the costs and benefits of seeking treatment for their symptoms, a period in which one may feel as if they have little choice concerning the treatment delivery. The standard of psychotherapy delivery is a weekly, individual one-hour session, though little research has indicated that this is the best treatment modality for all clients. Similarly, few studies have examined what form of treatment clients would most prefer if a choice was available to them (e.g., self-help books, group therapy, individual therapy, etc.). Clients seen at the Victims of Crime Treatment Center, located on the University of Nevada, Reno’s campus, typically receive individual psychotherapy. A questionnaire was developed to assess victims’ satisfaction level and preferences regarding their individual treatment. Clients seen at the counseling center were satisfied with the services provided; however, small changes could be made in order to improve the effectiveness and quality of the services. The study provided therapists with valuable information regarding psychotherapy. Therapists are also more familiar with the variables that facilitate the treatment process, a discovery that will aid in the long-term objective of improving the quality of mental health care for victims of sexual assault.
Stephanie Montgomery

**Mentor:** Dr. Hugh Shapiro  
**Major:** History  
**Research Topic:** Liberate China, Liberate Women: Recruitment of Women in the Chinese Communist Party from 1911 to 1949

Stephanie Montgomery is an impressive undergraduate student who hails from Winnemucca, Nevada. She has received several scholarships which recognize her educational endeavors while attending the University of Nevada, Reno and currently holds a 3.75 cumulative GPA. As a history major with a minor in Japanese Studies, Stephanie has worked diligently to understand the culture, language, and politics of several Asian countries including Japan and China. She studied abroad in 2008 at Kansai Gakuin University, Osaka, Japan where her fascination with East Asia was thoroughly solidified. As a McNair Scholar, Stephanie presented her work at the McNair Scholars Research Symposium at the University of California, Berkeley in 2009. Since 2005, Stephanie has worked as a Senior Help Desk Technician with the UNR IT department on campus. She was recently accepted into the intensive Chinese summer program at the Middlebury College Language School for the summer of 2010 after which she plans to pursue a Ph.D in East Asian studies focusing primarily on social women’s history.

**ABSTRACT**

The collapse of the Qing dynasty in 1911 marked the beginning of tremendous change for China. The subsequent rise of the Nationalist (GMD) and Communist (CCP) parties has been thoroughly researched, especially concerning the programs and policies implemented to gain the support of the Chinese people, both in the urban epicenters and vast rural areas. Research done on the implementation of such a grassroots movement, however, often overlooks the importance of one specific, major group in the success of these movements: women. In the wake of such tremendous change, most experienced massive change even in their personal lives, and women in particular were an exceptional case. Before 1911 Chinese society had very defined concepts of women’s roles in respect to things such as education, marriage and work, but the political parties that emerged afterward and the years of revolution that followed literally uprooted and replaced the traditional roles of women. This study will utilize interviews and essays of women and men, especially those active politically, who lived during the rise of the Nationalist and Communist parties, as well as scholarly work done on the concept of feminism in China as it interacted with political and social reforms. These firsthand accounts will lend insight into the question of how exactly the CCP successfully recruited and politicized a group of people who were previously largely uneducated and excluded from public life.
Grace Morris

Mentor: Debra Stiver and Dr. Mark Nichols

Major: Economics & International Business

Research Topic: Analyzing Germany's School System: Potential Improvements through Ganztagsschulen

Grace Morris is a senior earning her bachelors degree with honors in Economics and International Business with a minor in German. She has won multiple awards from UNR’s Foreign Language Department for exemplary work in German. She is a member of the International Honor Society of Beta Gamma Sigma, Golden Key, and Phi Kappa Phi, and was recognized by Who’s Who Among American College Students in the spring of 2010. She plans to earn her PhD in economics and go on to serve as an economist for the government or the U.S. military with a focus on FDI and improving business relationships with foreign countries.

ABSTRACT

Germany has been known as “das Land der Dichter und Denker” – “the land of the poets and thinkers.” However, recent international studies such as the PISA (the Programme for International Student Assessment), which were conducted by the OECD (the Organisation of Economic Co-operation and Development) in 2000, 2003, and 2006 have shown that the students in Germany’s educational system are performing at a lower level of reading and mathematical competency than those of other developed nations. Since the latter half of the 19th century, Germany’s educational system has traditionally been comprised of half-day schools. Several of the countries, which outperformed Germany in the PISA study, have institutionalized all-day schools, leading many to believe that there is a correlation between all-day schools and better student performance. In response to these studies, Germany is initiating reforms, including the construction of more all-day schools. In 2003, the program “Zukunft Bildung und Betreuung” (future education and care) went into effect. Four billion Euros were dedicated to constructing new all-day schools and improving those already in place. This research project is attempting to determine whether the students who attend the German all-day schools are showing improvements over those who are attending the half-day schools. Numerous variables such as graduation rates, drop-out rates, retention rates, and test scores could be helpful to preliminarily provide evidence showing a correlation between the time spent in schools and performance. Evidence of improvement among those attending all-day schools can enhance decision making by officials, including whether to disburse the additional funds toward this initiative.
Stephanie Orozco

Mentor: Dr. Daniel Perez & Dr. Emma Sepulveda Pulvirenti

Major: Internationals Affairs and Spanish

Research Topic: Language, Politics, and the Women of Juárez

Stephanie is a Renoite who is majoring in Spanish and International Affairs under the mentoring of Dr. Daniel Perez and Dr. Emma Sepulveda. Like many of our UNR students, Stephanie worked a lot of hours while attending UNR to help support herself and her family. She has received several scholarships and has kept her GPA above the 3.0 level. Stephanie now attends UNR and is working toward a master’s degree in Spanish.

ABSTRACT

The term femicide refers to women who are killed because they are women. For almost two decades, the Mexican town of Ciudad Juárez, in Chihuahua, Mexico, has been known for its increasing number of missing women. Their bodies have later been found mutilated, raped, stabbed and murdered. A variety of theories that pertain to this subject claim to have found the reason for these acts of femicide. These theories include the theory of machismo and the patriarchic home, drug trafficking, women trafficking, organ trafficking, etc. Within the pages and dialogue of films, articles, websites, books, etc, there are terms used to identify femicide. These terms politically define, in the global sphere, how each nation-state identifies femicide. Some of these terms include muertas/dead, asesinadas/assassinate, and desaparecidas/disappeared. Each of these words is different in meaning and in definition both in Spanish and in English. In this study I will compare and analyze the use of the term “femicide” and other words, as mentioned above, to demonstrate the role that language plays in framing identity politics – with respect to the women of Juarez. The cultural texts used are, The Daughters of Juárez written by Teresa Rodriguez, a Think film, Bordertown, directed and written by Gregory Nava, and Desert Blood-The Juárez Murders written by Alicia Gaspar de Alba. It is difficult to determine the causes of femicide; however, these women are found dead/muertas and are brutally murdered. They have not died because of natural causes, disease, or accidental death. They do not disappear without a trace; they are not assassinated, simply murdered.
David Pena

**Mentor:** Rosemary Dixon

**Major:** Women’s Studies

**Research Topic:** Remembering the Soldaderas: Subalternity and Feminism in the Mexican Revolution

David was born in Guadalajara, Mexico. He received a bachelor’s degree in Philosophy and Women’s Studies. His minor is Political Science. He recently received, from the College of Liberal Arts, the 2009 Dean’s Exemplar Award (Women’s Studies / Philosophy). He was a 2009 debate champion at the National Parliamentary Debate Association Champion Tournament in Stockton, CA and a 2009 debate champion at the National Parliamentary Tournament of Excellence in Berkeley, CA. He was a first place champion at the Whitman College National Parliamentary Debate Invitational among other things including taking 3rd place at the 2006 World Debate Tournament hosted in Xi, China. He was accepted to several graduate school programs but decided to attend Emory University in Atlanta, GA where he began a Ph.D. program in Philosophy in the fall of 2009.

**ABSTRACT**

The historiography of the Mexican Revolution has been characterized by a blatant disregard for the ways in which women soldiers (*soldaderas*) influenced the course of the movement and the success of the revolution. This paper uses post-colonial philosophy (especially theories of *the subaltern*) and feminist critiques of history to provide an account of the highly political space that *soldaderas* occupied in the Mexican public sphere from 1910 to 1917. Viewing *soldaderas* as a *subaltern community* exposes their complex consciousness and rebellious identities while challenging modern nationalist representations of women soldiers as embodied symbols of *the national*. Such an exercise is essential not only to analyze how women’s participation in the revolution was conditioned by their positionality as female peasants, but also to expose the ways in which women who were active in the creation of the nation-state were subsequently excluded from political representation by the male-dominated government that emerged after the revolution.
ABSTRACT

In recent years, China’s intentions, ambitions, and behaviors have been viewed as suspect. The discussion of the rise of China consists of two important questions: Is China a threat or is China a partner (Snow 3)? There are two major foreign policies that the U.S. established in dealing with China: containment or engagement. Scholars differ on which strategy seems to work best in dealing with China in terms of trade, economy, and even militarily. In this paper, I will attempt to evaluate which policy seems to work best in the changing political environment in this new century. Major changes in regime, government policy, and time are factors that one must consider in order to evaluate a policy that will best fit in today’s world of globalization and competitiveness. The theme of this paper is that changing times require new strategies.