

RONALD E. MCNAIR 2015



Summer Research Journal

Volume 20



The College at
BROCKPORT
STATE UNIVERSITY OF NEW YORK

TRiO
RONALD E. MCNAIR
POST-BACCALAUREATE
ACHIEVEMENT PROGRAM



2015 Ronald E. McNair Summer Research Journal—Volume 20



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About TRiO Programs

TRiO refers to six programs funded by Title IV of the Higher Education Act of 1965. The original TRiO Programs are Upward Bound, Talent Search, and Student Support Services. The name TRiO was retained even though more programs were added. The additional programs are Educational Opportunity Centers, the Ronald E. McNair Post-Baccalaureate Achievement Program, and a training program for TRiO staff. In general, TRiO programs are focused on providing educational opportunities to first-generation college students who come from low-income families and students with disabilities.

About Ronald E. McNair

Ronald Erwin McNair was born on October 21, 1950, in Lake City, South Carolina. He attended North Carolina Agricultural and Technical State University, where he graduated magna cum laude in 1971 with a Bachelor of Science in physics. He continued his education at the Massachusetts Institute of Technology, earning his PhD in 1976, and went on to become a recognized expert in the field of laser technology with the Hughes Laboratory. In 1978, McNair realized his dream of becoming an astronaut; selected from a pool of 10,000 applicants for the

space shuttle program, McNair became the second African American to fly in space. After his death aboard the space shuttle *Challenger* in 1986, Congress approved funding for the Ronald E. McNair Post-Baccalaureate Achievement Program, which is dedicated to the support and promotion of the high standards of achievement exemplified by McNair. Those who knew McNair characterized him as fearless, determined, and accustomed to applying all available resources to any problem he faced.

The McNair Program at The College at Brockport, State University of New York

Designed for first-generation and low-income students as well as students from groups underrepresented at the doctoral level, the Ronald E. McNair Post-Baccalaureate Achievement Program at The College at Brockport encourages talented students to pursue a doctoral degree. The program promotes graduate studies by providing participants with seminars and workshops germane to the pursuit of graduate education, a mentored summer research experience, and opportunities to present this research at professional conferences.

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Introduction and Acknowledgements

Barbara J. Thompson

Executive Director, TRiO and CSTEP Programs
Past-President, Association for Equality and Excellence
in Education, Inc.

Dear Readers:

I am pleased to introduce you to the 20th volume of the *Ronald E. McNair Summer Research Journal*. This journal is a compilation of the work our scholars complete each summer as they learn to conduct research in their chosen field. Under the guidance of dedicated faculty members, McNair scholars design and implement projects that teach them the fundamentals of creating and using knowledge and provide them with their first taste of the graduate and professional world they are preparing to enter. The Summer Research Program takes our students beyond the average undergraduate experience, setting them apart from their peers as it elevates their education to a level not usually available to students pursuing a bachelor's degree. I am sincerely grateful to the 40 faculty members who invest so much of themselves in moving our students forward. The expertise and encouragement they provide is critical to the success of our McNair scholars, not only during their undergraduate years, but most importantly when they enter the competitive world of graduate school. The fact that 283 of our 741 McNair alumni have successfully earned master's degrees, 25 professional degrees and 43 doctoral degrees

is a tribute to the quality of the work our mentors expect and elicit from their students. Those involved in nurturing our future professionals in this manner deserve to be highly recommended. I look forward to seeing our scholars enter the ranks of academia and continue the process of personally investing in future generations, passing on what they have received through the dedication of our mentors, program staff, and campus community.

Acknowledgements

The McNair staff would like to take this opportunity to thank Dr. Heidi Macpherson, Dr. Mary Ellen Zuckerman, and Dr. Michael Fox who have assisted in strengthening our program this past year. While the Office of Academic Affairs administers the program, the support base represents a university-wide commitment to achieving our program goals. The US Department of Education, other TRiO Programs, the Research Foundation and the entire institution collectively lend their efforts to the program's success.



Do Franchise City Demographics Affect NBA Hiring?

Olusola Adeniran, Kinesiology/Business
Mentor: Seth Johnston

Recently, racial inequality has become a focal point in the National Basketball Association involving incidents like Bruce Levenson of the Atlanta Hawks or the more famous Donald Sterling incident with the L.A. Clippers. Unfortunately, we usually only hear about racial transgressions committed by those at the top of an organization. Who we don't see are the teams' analysts, directors, and executives. Within that large group of employees there is often a huge imbalance between employees of color and their Caucasian counterparts. For this research project, we specifically wanted to understand what affects the hiring of the director of operations (D.O.) position, a specific NBA front office position. We wanted to see whether or not there was a correlation between the racial demographics of a franchise city and the hiring of the D.O. position.

Methodology:

We first collected the director of operations' names and racial identities. Then we collected the racial demographics for each franchise city for five racial identities: White, Black, Hispanic/Latino, Asian, and Other. Once the collection was completed, we transferred the data to IBM's SPSS 21 program, a data analysis program. The Chi-Square test was used to test the hypothesis that there was an association between hiring of the D.O. position (racial identity) and racial demographic of each franchise city.

What we found led us back to the original hypothesis. The data output showed that the null hypothesis was true. There was no correlation between the racial demographic of each franchise

city and the hiring of the D.O. position. More simply put, racial division in each franchise city does not influence hiring of that office position.

This finding then left this research project with an open ended question: What influences front office hiring, to the most degree, outside of the realm of intelligence and qualification?

There is, of course, a simple solution to closing the large gap between people of color and their Caucasian counterparts and thus decreasing the gap between minority and Caucasian directors of operations. I can become a D.O. myself. Although that may be a very minor solution, it will help. More importantly, we should aim to further advocate for the promotion of people of color to join NBA staff, and inspire them to become D.O.s.

Limitations:

The first limitation was that I was only able to find the racial demographics for 23 out of 30 franchise cities. Another limitation was that Brooklyn and Toronto as host (or franchise cities) were very difficult in producing their racial demographics, so they weren't included or else they would've skewed the data more significantly. My final limitation was that within the Hispanic/Latino racial demographic for each host city, white Hispanics were included as well. This means that they were most likely counted twice. This fact also had potential to skew data significantly.

In conclusion, my findings show, with much confidence, no correlation between the racial demographic of each franchise city and the hiring of the D.O. position in the NBA.



Effects of Magnesium Deficiency Using Mouse Electrolyte Balance

Oyindamola Aregbesola, Biological Science
Mentor: Bernado Ortega, PhD

Magnesium (Mg^{2+}) is the second most abundant ion in the body, approximately 60% in bone, 39% inside cells, 1% in plasma. It is an essential cofactor of more than 300 enzymes, which means over 300 enzymes are dependent on its presence including those involved in synthesis of proteins, DNA and RNA; but its regulation is poorly understood. It is known that magnesium is actively transported into and out of cells and is also influenced by various hormonal and pharmacological factors. It also has an effect on the transport of other ions such as potassium and calcium across the plasma membrane which may also require the presence of magnesium. The kidneys are the main organs that most closely regulate magnesium metabolism and other vital electrolyte compositions of the body. According to previous studies, magnesium deficiency can lead to several consequences, including a disturbed regulation of calcium metabolism in the kidneys and other key organs. We can conclude that magnesium deficiency will result in the interference of physiological regulation of other electrolytes, such as calcium (Ca^{2+}) and phosphate (P_i) and a number of hormones which have been implicated in mediating such disturbances. Mg^{2+} deficiency has been associated to gastrointestinal disorders, renal loss, hypertension, poor response to antihypertensive

medication, diabetes and cardiac arrhythmias, among many other conditions. Despite this clinical importance, the hormones that regulate Mg^{2+} balance in the human body are unknown.

For this project, we used a mouse model to understand how these changes occurred over time in the rats and then compared and contrasted them to the human body, because humans have similar kidneys as rats. Over a 24-hour period, the rats' urine was collected using metabolic cages, and plasma electrolytes were also collected and measured. We observed that in as little as one week, mice experienced a dramatic decrease of plasma Mg^{2+} levels, which was accompanied by increased excretion of P_i and decreased excretion of Ca^{2+} in urine. After several weeks of observing and analyzing, and also based on outside information, our study has shown that electrolyte imbalance caused by hypomagnesemia occurs much faster than previously described and can be linked to chronic diseases in the human body. The ultimate goal is to continue to unravel the precise mechanism by which magnesium deficiency affects the regulation of calcium and phosphate and better understand the involvement of hormones as well as its effects on the human body.



The Role of *p21-Activated Kinase* Gene in the Projection Neurons of the *Drosophila* Olfactory System

Joel Alfredo Baque, Biological Science
and Spanish

Mentor: Huey Hing, PhD

The brain is an important organ which allows us to perceive, think and carry out actions. Inside each human brain are approximately 86 billion neurons interconnected by more than 100 trillion synapses that transmit signals to the human body (Carson, 2015). The brain is the command center and controls for all our body temperature, our organs, our senses, and, most importantly, the operation of every system in the human body.

Disruptions in brain functions can cause severe neurological diseases. Today, there are serious neurodegeneration diseases such as: Parkinson's disease, Alzheimer's disease, and Huntington's disease. Understanding how the brain develops may allow clinicians to repair damaged brains. A major goal of this project, therefore, is to study the mechanisms by which genes control the development of the *drosophila* olfactory system.

My project focuses on understanding how the *drosophila* olfactory system develops. My specific aim is to elucidate the role of the *p21-Activated Kinase* (*Pak*) gene in the Projection Neurons (PNs). *Pak* encodes a Serine/Threonine Kinase that plays a key role in regulating the cytoskeleton. Scientists believe that *Pak* regulates the actin cytoskeleton, which then functions as a signaling cascade to regulate the migration and motility of cells. A study conducted by Lay-Hong Ang, Jenny Kim, Vitaly Stepensky and Huey Hing (2003) discovered that the *Pak* gene is needed

to perform signaling pathways that mediate the response of olfactory axons to transmit signals and to communicate with the antennal lobe. In 2004, Susumu Tonegawa and his colleagues discovered that mice that lack the *Pak* gene have difficulties with memory. They discovered that the *Pak* gene is needed in the dendrites for memory. These studies are evidence that show that the *Pak* gene is required for dendritic development and to communicate with higher level parts of the brain.

Based on scientific proof that demonstrates that the *Pak* gene plays an important role for dendritic development, we hypothesize that *Pak* performs critical functions in the Projection Neurons during olfactory development. To test this hypothesis, I propose to knockdown the activity of the *Pak* gene in the Projection Neurons using the RNAi technique and the Gal4-UAS system. RNA interference is a biological process that inhibits gene expression, causing the destruction of specific mRNA molecules. In contrast, the Gal 4-UAS system created by Andrea H. Brand and Nobert Perrimon consists of a tissue-specific Gal4 gene expressed under a tissue-specific enhancer that drives a target gene controlled by the UAS promoter. The tissue-specific Gal 4 that will be used in this scientific research in order to express the *Pak* gene specifically in the Projection Neurons is called GH146-Gal4.

This is an ongoing project.



We Dig it! Technological Applications at The Jezreel Valley Regional Project Legio VI Ferrata, 2015

Courtney Dart, Anthropology

Mentor: Jennifer Ramsay, PhD

This past summer I worked at an archaeological excavation in Israel. Each day we had lectures, lab, and field tutorials on the technology used at our site, Legio VI Ferrata. I learned how important digital technology is for advancing field work and archeological methods. Just four to five years ago none of this technology existed, but this summer's dig every archaeological field director had iPads which were linked to a database system that organizes and presents findings and captures step-by-step dig videos.

This season's excavation was the very first completely digital, paperless dig conducted by the Jezreel Valley Regional Project (JVRP). This project is a major endeavor of the Albright Institute of Archaeological Research stationed in Jerusalem. In 2010 and 2011 JVRP conducted surveys of the Jezreel Valley and in 2013 tested their hypothesis about the exact location of Legio VI Ferrata, the sixth Ironclad legion of the imperial Roman army. This army, around the 30s BC, was sent to what is now modern day Judea in the south of Israel and where it was garrisoned for 200 years. Legio is one of the most important Roman period sites and has had the longest occupation from the Neolithic period through today. It is a castra, which is Hebrew for camp, a permanent military base, with well-controlled roads and direct access into the Galilee and inland valleys of northern Israel.

This research consisted of a literature review, interviews, and field work. I reviewed three articles on advancements in archaeology using digitization. Each article provided an insight into the area of excavation and the methods used. In fact, the

results revealed high likelihood that technology has sped up and will continue to in a more cost effective, efficient, and real-time manner. My experiences and knowledge from the excavation at Legio confirmed what I had learned from these articles.

On site, I worked four weeks performing qualitative research. I interviewed the directors about the advancements and applications of technology used at Legio such as GIS, a geographic information system that uses a reference framework of set points, lines, and surfaces, along with latitude and longitude to manage all geographic data. Total station is a grid and laser system based on height and elevation that is used to build three dimensional models of excavation units. However, the best technological application for preservation is three dimension modeling, or photogrammetry, which compiles pictures from a unit to construct publishable, 3-D images. Additionally, database management was tested in the field using iPads in place of written documents to manage finds in the field quicker and easier.

There are several benefits of using these technologies in the field, such as to reduce human error, increase preservation, increase time and accuracy, and more. On the other hand, hard drives can crash and people are resistant to change. The best idea is to cross reference using written documents along with these technologies. Furthermore, archaeology is flexible and transitioning quickly. Nearly 100 years ago archaeologists were trying to justify this destructive behavior. Today, 3-D photos allow anyone to revisit a site, giving one the feeling of almost jumping into the square.



The Importance of Community Based Organizations in African American Communities

Christal Dewberry,
Criminal Justice and Sociology Major,
African and African American Studies Minor
Mentor: Karen Podsiadly, MA

The purpose of this research is to explore the impact of various community organizations on lives of African American youth. Pathways to Peace is a program within the City of Rochester that focuses on helping at-risk teens identify resources and develop skills that may be used in creating more productive futures. This research draws on experiences gained while interning with Pathways to Peace and attending community events for teens as well as a review of current literature. Ultimately, the information gathered will assist in the development of best practices aimed at reducing the rate of African Americans within the criminal justice system via the prison pipeline.

The *School to Prison* pipeline includes policies and practices in public schools, mainly inner-city, that set children up for the criminal justice system. Over-crowded schools and lack of resources inhibit student engagement in their schools and community; hence the school fails to help the students fully participate in the living environment. Because of the school to prison pipeline system, 61% of the prison population consists of African American and Latino males where one in three African American and one in six Latino men will be placed in the criminal justice system.

According to Dr. Michelle Alexander, author of *The New Jim Crow*, the United States incarcerates a high rate of black men. An African American male is sentenced to a 20- to 50-year longer prison term than their white counterpart of the same drug crime. Thirty years ago, before the "War on Drugs" was put into place, there were only 300,000 people in the American prison system. The United States

now has the highest rate of incarceration in the world, higher than Russia, China, and Iran. Thus, this makes it difficult for African American men who are in the system to find jobs, housing, and education. Ex-prisoners are often put into a caste system where they are treated as second class citizens and which creates a "New Jim Crow," similar to the Jim Crow Era of the 1950s and 1960s.

Many inner-city communities lack the financial and human resources needed to guide youth towards more productive and positive lifestyles. However, given increased violence in the Rochester community, with many African American youth who handle their issues through gang and drug violence, the City of Rochester has recognized that something needs to be done to prevent our youth from being involved in the criminal justice system. Pathways to Peace was created back in 1998 in an effort to save the lives of these youth, de-escalate violent situations, and assist youth with identifying available resources that will help them in the near future to provide many opportunities.

Pathways to Peace is in partnership with many other organizations in the Rochester area such as Teen Empowerment to help teens and young adults by providing resources and guidance. Additional research will be conducted by interviewing teens, parents, and team members that benefit from Pathways to determine the extent to which the organization has had an impact on the community. With this research, we hope to provide a better understanding of why programs like Pathways to Peace need to exist in other African American communities.



How Do Auditory Stimuli Enhance Performance?

Gudrinis Fernandez, Exercise Science/
Kinesiology

Mentor: Craig O. Mattern, PhD

Music has been widely used by the general population during exercise and athletic performance. Many studies have been published correlating the effect of music and rating of perceived exertion during exercise with no definitive answer to music's effect on performance. The purpose of our study was to determine the effect that music tempos have on aerobic exercise during timed and standardized trials.

It is predicted that a faster music tempo will lead to a faster completion time, reduced rating of perceived exertion (RPE) and a larger difference in heart rate from resting when completing a 1.6 km run. It is also predicted that faster music will increase the distance completed in a 10-minute maximal cycle test as well as reduce RPE and have a larger difference in HR from resting. This test was a randomized, counterbalanced design to test the effects of music tempos on performance. Participants (Ages 21.17 ± 0.98 , 3M, 3F) volunteered and had mixed

experiences in running and cycling. Data collection consisted of a familiarization trial followed by three trials of a maximal 1.6 km run followed by a 10-minute maximal cycling test. Measurements of RPE data as well as heart rates were taken at 0.4 km intervals during the run and at pre and post times following the cycling test. **Fast tempo** auditory stimuli, with the use of headphones during exercise, may allow individuals to alter their completion time, RPE and difference in heart rate. Among all variables there were no statistical differences between the 1.6 km run and the 10-minute cycle test besides a statistical difference among all values of heart rates at different distances throughout the 1.6 km run ($p < 0.35$). Although the differences lack significance, with increased numbers of participants, trends may form suggesting **fast music** may alter their completion time, RPE and difference in heart rate.



Perceptions and Practices of Physical Educators on the Teaching of Social Skills during Physical Education Class

Kerri Guzman, Kinesiology, Sport Studies, and Physical Education

Mentor: Amaury Samalot-Rivera, PhD, CAPE

The purpose of this study was to determine physical educators' perceptions and practices about teaching social skills (affective domain) in the State of New York. After obtaining Institutional Review Board (IRB) approval from The College at Brockport, a content validated questionnaire called Perception of Physical Education Teaching Social Skills (PPETS) was developed using Google forms and sent by email to all of the members of the New York State Association for Health, Physical Education, Recreation, and Dance (NYSAPERD). This questionnaire was content validated by a panel of three experts in physical education and social skills development. A total of 110 respondents were obtained, 50 female (45.5%) and 60 male (54.4%).

Preliminary results indicated that teachers believe it is important to explicitly teach social skills in physical education. However, many expressed not feeling properly prepared to teach them. This result led to discussions related to teacher preparation programs and the integration of social skill instruction in their curriculums. For example, 95.5% of teachers

believed that it is important or extremely important to teach social skills to students in the physical education class. Further, when asked if they will include social skills as part of their written class objectives, the majority 74.4% reported that they will sometimes or not at all. So, while respondents believe that it is important to teach social skills, they do not have written objectives for them.

These results seem to indicate that professional preparation programs, at least in New York State, should emphasize more on the teaching of social skills to the extent that professionals feel competent to explicitly teach them. It is recommended that teacher preparation programs do more to emphasize the importance of developing course objectives in the affective domain and promote social skills development through physical education. These results confirm results obtained by Samalot & Porretta in 2009 in the State of Ohio and the importance of including more social skill instruction content and pedagogical content knowledge in teaching preparation courses.



Cholera in Haiti

Lynn Joseph, Health Science

Mentor: Donna Wilkerson-Barker, PhD

In 2010, nine months after the earthquake in Haiti, cholera spread throughout the country and infected thousands of people. Cholera, an infectious disease of the small intestine caused by the ingestion of water or food infected with fecal matter containing the bacteria *Vibrio Cholerae*, had been virtually eradicated in Haiti, which had not seen a case of cholera for at least 100 years before the earthquake. How this easily treatable disease, whose symptoms include severe vomiting and diarrhea, managed to explode into a full-scale epidemic that has claimed the lives of nearly 9,000 Haitians is the source of much discussion and debate (Roos, 2013). This study examines the conditions in Haiti during the cholera outbreak. How could a country that had never before suffered a cholera outbreak succumb to this easily preventable disease? In looking at Haiti's healthcare system before the earthquake and the Haitian government's response to the cholera outbreak, the role of non-governmental organizations (NGOs) and foreign aid in the country is discussed. Ultimately, this study asks the question of whether the cholera epidemic could have been prevented in Haiti and if so, how?

Cholera has put a spotlight on both the Haitian government and the role of NGOs in the country; in spite of the millions of dollars spent on treatment and prevention, and the hundreds of emergency and development workers working alongside the Haitian government, cholera continues to menace the population (George, 2015). Why? Is this the result of government corruption and mismanagement? Are

neocolonialism and foreign intervention to blame? Can it be explained by the force and impact of the natural disaster alone? In reality, multiple variables related to each proposed scenario converge to explain the cholera outbreak in Haiti.

Haiti has long struggled to provide adequate sanitation, health care services, and lodging to its population of just over nine million people. Kathleen Tobin traced the history of Haitian development and population growth before the earthquake to illustrate the various forces in play that left the population especially vulnerable to the effects of the terrible earthquake, a phenomenon she refers to (borrowing from anthropologist Anthony Oliver-Smith) as the "historical construction of vulnerability" (2013). Her analysis shows how a combination of unregulated housing and construction sectors, rapid rural-urban migration and urbanization related to globalization created overpopulation and dangerous living conditions in Haiti that left it susceptible to the immense devastation of the earthquake. Specific factors that left people unprotected were poor accessibility in buildings, which determined whether people could escape shaking buildings without getting injured; construction type and height, specifically medium-rise buildings constructed on soft subsoil; and poor housing built on weak foundations on unsuitable land that could not withstand the forces of the quake (Tobin, 2013).

The growth of the population in cities, especially Port-au-Prince, as a result of rapid urbanization related to globalization also contributed to what Tobin

refers to as a "particularly weakened state" within Haiti (2013). The second half of the twentieth century marked a particularly rapid period of urbanization, especially in the Caribbean. As Tobin (2013) explains,

By the 1990s, the Caribbean had become more fully urbanized than the remainder of the developing world, and displayed a higher urban to rural population ratio than the world as a whole. Substantive urbanization resulted from expanded investment in manufacturing, tourism, and retail sectors of the islands' economies, where agriculture had previously dominated. Late twentieth-century globalization resulted in enclave manufacturing, off-shore data processing, and parachute tourism augmenting the new international division of labor. (p. 1047)

Migration to the city for jobs sewing clothes for U.S. manufacturers and the allure of a higher quality of life, coupled with high birth rates, had serious negative consequences on many aspects of life such as health and nutrition, environmental factors, water and sanitation, housing, and the social service delivery system. Tobin's analysis points to both government irresponsibility and foreign intervention from the United States (which occupied Haiti from 1915-1934) and other industrialized countries and international agencies as contributing factors in Haiti's rapid urbanization and increasing economic problems. Ultimately, as she highlights,

(I)nadequate planning and an increasingly stagnating economy had made the country more reliant on the work of nongovernmental organizations (NGOs) and external funding, particularly in the areas of health, agriculture, and education. Donations had allowed the government to neglect spending in these areas. External funding and NGO administration continued to fragment the agricultural sector. While some smaller projects benefited individuals and their families, large external investment directed profits outside the country. (p. 1053)

The neocolonial/neoliberal mechanisms at work in globalization are also a topic of Mark Schuller's work, which has illustrated the extensive impact of

globalization on Haiti's development. For Schuller, outside intervention has weakened the ability of the Haitian government to act effectively for the benefit of its people, largely because it has bankrupted the government and left it without any control over how resources are allocated. As he points out, it has become cliché to call Haiti the "Republic of NGOs"—even before the earthquake, non-governmental organizations received nearly all foreign assistance. So the government has been unable to fulfill even the most basic functions" (2012). By some estimates, foreign aid accounts for between 70 and 90% of the Haitian government's revenues. As Schuller explains, "if Haiti had a tax base, it could finance things like schools, hospitals, and road repair on its own. Without a tax base, the Haitian government is bankrupt" (2012). Schuller's analysis demonstrates how accusations of corruption against the Haitian government have served as a screen to allow NGOs—often in line with a neoliberal ideology—to function according to their own agendas:

When Haiti's first democratically elected government came to power in 1991, it faced a USAID and World Bank that was concerned about the issue of corruption, not to mention the rise in a belief in neoliberalism, the belief shared by Tea Partiers and libertarians alike (and increasingly so-called "centrist" Democrats) that the market should be free from any kind of government interference. So the elected governments did not get this support from foreign agencies. This was the beginning of a gradual NGO-ization, and neoliberalization, of Haiti. (Schuller, 2012)

Significantly, Schuller describes how this process results in a system that is ineffective, largely because there is no accountability. NGOs "are private structures accountable only to donors (individuals as well as USAID), not to the Haitian government or beneficiaries" (Schuller, 2012). In the absence of oversight and participation by the communities receiving the help, very little progress is made toward meeting critical needs. The cholera outbreak is a case in point. When the NGOs first descended after the earthquake, there were all sorts of sensitive donor speeches about respecting the needs and input of the Haitian people. Eleven weeks

after the earthquake, donors pledged 5.3 billion dollars for Haiti's recovery (Klarreich & Polman, 2012). They also agreed to work in partnership with the Haitian government. Somehow the money failed to materialize. The NGOs followed their own agendas and set their own priorities by excluding the Haitian government. The money that did reach Haiti has failed to truly respond to Haitians' needs (Polman, 2012). The problem was not that the funds were wasted or stolen; rather, much of it was not spent on what was most needed.

Preferring to hide behind claims of government corruption as the reason for which they refuse to work under the direction of the Haitian government, many NGOs and foreign governments continue to impose their interests in the country and use funds for their own purposes rather than to solve Haiti's problems. According to Doyle (2011), some NGOs undermine the capacity of the state, have no accountability to the people they serve, do not always work in areas when asked to by the government, lack coordination and are top down and top heavy. The fact that they were not dedicated to work with the Haitian government in order to solve the cholera issue made it easier for the outbreak to spread quickly and infect a lot of Haitians. This statement rings all the more true when Mark Schuller's (2012) study of the camps after the cholera outbreak began is taken into consideration. Looking to see what progress had been made in the camps from October 2010 to January 2011 since 175 million dollars had been pledged to combat cholera, findings revealed that tangible results occurred only when NGOs worked with the Haitian government:

Thousands of deaths and over a hundred million dollars later, only four percent of camps had water and toilets newly installed. Where the four percent increase was concentrated is instructive. In Cité Soleil, the Haitian government—the national directorate for water and sanitation (DINEPA) in tandem with the local government—set a policy of 100 percent coverage of water and sanitation services within Cité Soleil camps. It was still the NGOs that did the work. But they worked under a framework established and coordinated by the government. It worked. As

of January 2011, research assistants noted that all Cité Soleil camps had water and only one lacked a toilet (I was later informed that this too was solved). (Schuller, 2012)

Given that cholera was "imported" to Haiti inadvertently via United Nations peacekeepers who introduced the Nepali strain of cholera into the Meye river tributary system in Mirebalais as the result of faulty sanitation practices in the base camp, it can be concluded that the cholera outbreak itself is a tragic example of the devastating effects of unregulated and decentralized globalization.

Haiti has been home to more foreign aid workers than any other country on earth, yet the presence of 12,000 NGOs failed to prevent a cholera epidemic that medical experts believe should never have broken out. The full-scale cholera epidemic in Haiti is an example of how the Haitian government, international organizations such as the UN, WHO, and the World Bank, and NGOs not only created conditions in Haiti that left it uniquely vulnerable to the devastation of a natural disaster, but also failed to orchestrate an effective protocol for responding to and managing an easily treatable disease, a failure that has ended the lives of thousands of Haitians. Cholera, although perhaps not entirely avoidable in Haiti after the quake, could have been contained and managed if international organizations and NGOs had worked alongside the Haitian government to support its capacity to implement a comprehensive, integrated strategy toward treatment and prevention.

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Consensual Sexual Activity and Alcohol Use within College Populations

Jeanelle Lambre, Health Science

Mentor: Michael Ray, MPH, MS, CHES

Sexual consent is often misconceived, which can lead to rape and sexual assault. What leads to the misconception of sexual consent, and is there a relationship between consent and alcohol consumption in college populations? According to George, Lewis, Lindgren, and Pantalone (2009) there exists a relationship; however, it has been understudied and is limited. This project is a thematic analysis of the current state of literature to find out what has been studied to date. It will include 21 articles to determine the literature that currently exists regarding perceptions on consent, college populations and alcohol, and deeper insight on how alcohol plays a role in one's perception on consent. Using The College at Brockport's Drake Memorial Library's database, a large literature search and review was conducted. Twenty-one articles were obtained from three searches using different keyword combinations.

All of the studies we reviewed, except one, used anonymous surveys as their methodology. This methodology is good because it invites an honest, insightful answer on such a sensitive topic. The studies differed in the population genders. The findings were analyzed in three different themes: perceptions about the association between alcohol consumption and sexual behavior, coercive behaviors, and non-coercive behaviors. Two of the articles argue that the misconception of consensual sex is because the media is teaching the youths of this generation false

ideas, implying that it is culturally acceptable to get people drunk in order to engage in sexual activity. This idea is the reason why men encourage women to drink in order to make them more amenable to sexual advances later.

All 21 articles state that there exists some relationship between alcohol consumption and sexual coercion, focusing and labeling males as predators and females as victims. Half of the articles say women experienced unwanted sexual behavior because they were unable to give consent to or resist the perpetrator due to their own alcohol use, whereas other articles state that alcohol consumption by the perpetrator and/or victim increases the likelihood of acquaintance sexual assault. One article agrees that alcohol consumption may relate to non-consensual sexual activity; however, there is also a positive relationship to alcohol consumption and consensual sex. That study showed that college students drank or went to settings in which drinking occurs in order to find a sexual partner because sex is more likely to occur when attending a social event with alcohol. Men would find partners more attractive under the influence of alcohol and less attractive when sober, which ultimately leads to regretted sex. On the other hand, women used alcohol as an agent of sexual motivation and anticipatory excuse for their "socially deviant behavior" of being "slutty" to maintaining a good reputation.



Better Budgets Lead to More Money

Tatyana Legros, Mathematics

Mentor: Kari Smoker, JD

In the book *The Lost Art of Dress* by Linda Przybyszewski, the Vanguard program wondered, "What if all graduating students knew how to budget, how to save more than they spend and how to resist impulse buying? What if they truly had the skills to be smart with their money?" I wondered the same questions when I began gathering information about how better budgeting could lead to more money for the college community. Traditional-aged college students today face a lot of financial stresses. Some of these stresses stem from a high cost of living, pressure to keep up with cultural trends, living beyond their means, and their lack of knowledge about personal finance and budgeting. According to the article *Financial Stress, Self-Efficacy, and Financial Help-Seeking Behavior of College Students*, financial stress is connected to college students with suicidal thoughts. It has been cited that out of the students who had attempted suicide, 78% reported that financial stress was the culprit.

As an aspiring personal financial planner, I wanted to look at different literature reviews and other sources to explore students' general knowledge about their finances and suggest workable solutions to enhance their abilities to construct a budget and find ways to live within it. While investigating different literature reviews, I came across Inceptia's 2012 National Financial Capability Study. Inceptia is a nonprofit organization that supports schools that aim to provide their students with financial knowledge to move swiftly into the future without accruing the burden of debt and default. Inceptia gave over 950 first-year students 50 financial questions to test

their knowledge based on five core competencies: earning, spending, saving, borrowing and protecting. Based on the survey, they found that: 37% said that finances are a significant source of stress, 60% did not create a budget for the current school year, 31% do not regularly track expenses, and 70% either currently have student loans or plan to borrow before they finish school.

I discovered the reason the statistics were so high was because we college students all too often fall for six common money management mistakes. These common mistakes are: not knowing where the money is going, not having a money plan, peer pressure, not distinguishing needs from wants, and abusing both credit cards and student loans. For this research, my goal was to assist students in finding better ways and resources to help in bettering their money choices.

To decrease the level of financial stress most college students go through, I wanted to showcase various online resources I personally use to manage my finances. My top two choices are Mint, an online personal management service, and Financial Entertainment, a source with free online and mobile games aiming to improve personal financial capability, self-assurance and knowledge. With this ongoing research, I would like to accumulate more solutions to assist college students in making wiser decisions. I am also going to expand my audience to not only college students, but people between the ages of 25-50 as well. My career goal of being a financial planner will give me the push needed to make this ongoing research successful.



The Masculinization of Medicine

**Natalia Manhertz, Biology;
Women and Gender Studies**

Mentor: Barbara LeSavoy, PhD

Throughout history, society has pushed women out of the public sphere of work and into the private sphere of home. The medical field is one example of this gender segregation of work. Even though the medical field today is not as male-dominated as it once was, different sub-specializations in medicine are still gender segregated. My goal for this research project is to show how the field of medicine has been masculinized with a particular focus on the subspecialty area of surgery. This project will therefore explore how surgery is gendered and examine what factors, if any, are shifting to allow more women to enter surgery as a profession.

This research topic interests me because it is not an issue that is given much attention. We know that the number of women in the medical field is increasing, but the purpose of my research is to find out what is keeping them away from the area of surgery. As part of my summer research project, I shadowed Dr. John A. Bookvar, a male neurosurgeon at Lenox Hill Hospital in New York City. I wanted to research how male surgeons handle surgery. Adding

to this shadowing experience, I plan to generate questions based on my shadowing experience that relate to how society might perceive female surgeons conducting surgery in comparison to male surgeons. In addition to shadowing and observing Dr. Bookvar, I conducted a literature review of the background of men and women in medicine in general, and why surgery, in particular, appears to be a male-dominated medical specialty. I also looked at the wage gap between male and female surgeons and plan to use this to examine the future outlook for women in surgery.

I hope to leave this research with new knowledge about gender segregation of women in surgical medicine. I also hope that whoever views this research will gain a new understanding of my research topic, especially women interested in entering surgery as a medical profession. Continuing with my research, there are some questions I would like to research further so as to gain a better understanding of the women who pursue medicine as a career.



Rural Health Care of Peru: My Experience with Sacred Valley Health

Mariel Rivera, Anthropology

Mentor: Neal Keating, PhD

Living in rural, isolated villages of the Andes creates a complicated life for the poverty-stricken communities of Peru. Unfortunately, because of geographic isolation, poor roadways and poverty, rural communities lack access to vital resources. These communities are comprised of mostly indigenous individuals who still feel the inequalities created by colonization. Currently, these communities lack access to health care and health education. A non-profit, Sacred Valley Health (SVH), has stepped in to try and address this need while remaining aware of the cultural norms of the region. I worked with SVH during a Study Abroad and Service Learning trip. SVH's mission is to bring education, access and empowerment to these rural villages through health care and education. Through their mission and programs, SVH has begun to positively impact the lives of these villagers, especially the lives of the indigenous women.

Becoming culturally competent as a non-profit can be difficult; however, SVH makes it a top priority. The most significant cultural norm they identify is the collective nature of the Andean communities. Specifically, SVH relies on the voice of the collective government system to make any decision within the community. This ability allows SVH to remain successful in reaching and connecting with the rural communities. Without connecting with their community, they would not receive the trust necessary to successfully run various programs.

SVH utilizes three types of programs, the *Promatora* and *Docentes* programs and the Health

Campaigns. The *Promatora* and *Docentes* programs place women at the frontline of their community's health care. This aids in bringing the women education, access and empowerment. *Promotoras* are able to gain importance in their communities because they are viewed as knowledgeable. This allows the women to gain respect from the entire community. The health campaigns were completed with volunteers. During my research I completed four different health campaigns with SVH. This gave me an understanding of the relationship formed between the SVH employees and the community members.

For my initial research questions I wanted to understand the impact of a culturally mindful non-profit organization and the type of empowerment that is created by this impact. I believe these questions will provide an understanding of the current state of the health care and education in rural Andean communities as well as demonstrate the difference a non-profit can achieve. In order to answer my research questions I utilized participant-observation during my time with SVH.

It is evident that the work being done by SVH is truly life changing for the indigenous communities of the Andes. Firstly, it is evident that this organization's use of cultural mindfulness enables a positive impact. Secondly, it is apparent that this organization's programs empower indigenous women. Therefore, it is clear that this organization is so far successful in accomplishing their mission of giving education, access and empowerment to the rural communities of the Andes.



Perception of HIV/AIDS in The United States of America: Stigmas/Attitudes and Progression

Taevan Javere Steele, Health Science
Trezmalay Olu-Williams, Social Work

Mentor: Barbara J. Thompson, MA

Introduction:

Since its arrival to North America, HIV/ AIDS has become an epidemic. As a Social Work major and a Health Science major, we decided to focus on the perception of this specific disease while also taking a look at the stigmas and attitudes surrounding HIV/AIDS and its progression since the first five cases. Our main goal is to continue to bring awareness to HIV/AIDS.

In the early 1980s, various reports were circulating in California and New York about a small number of men who had been diagnosed with rare forms of cancer and/or pneumonia. This cancer, which was identified as Kaposi's sarcoma, normally affected elderly men of Mediterranean, Jewish and African descent. Pneumocystis Carinii Pneumonia (PCP) is a form of pneumonia that commonly affects individuals with seriously compromised immune systems, such as persons with HIV. This disease agent is an organism whose biological classification is still uncertain. PCP would not have been an escalating issue if the men were not young and in relatively good health prior to contracting the infection. The only other commonality between these young men was their homosexuality. On June 5, 1981, the Center for Disease Control and Prevention (CDC) published a report on PCP. The article was entitled "Pneumocystis Pneumonia--Los Angeles," which detailed an account of five young males hospitalized due to PCP, cytomegalovirus, and disseminated candida infections. The author of the article established that all five men were homosexuals. Almost a month after the CDC's announcement,

The New York Times reported a total of 41 homosexual men had since been diagnosed with Kaposi's sarcoma, eight of whom had died less than 24 months after the diagnosis was made.

Methods:

A qualitative literature review was chosen to collect the information for the study. A six-question survey was created and distributed among our fellow peers to assess their perception of the ways in which HIV/AIDS is transmitted. Due to time constraints, we were not able to get Institutional Review Board (IRB) approval prior to the beginning of our project. Therefore, we decided to proceed with a literature review. We began by gathering several scholarly articles that were published between 1981 and 2014. Since we were only permitted to do our literature review, we pulled all of our facts from the articles and CDC website to create our HIV/AIDS timeline.

Conclusion:

Since the introduction of antiretroviral treatment, people infected with HIV/AIDS are taking control of their disease and defying the odds by extending their lives. With that being said, the spreading of HIV/AIDS still plagues the minority community, more African Americans than any other minority group. The stigmas still remain and people are still ignorant about the transmission of HIV/AIDS. So they still pass prejudice against people with AIDS. Much knowledge was gained from the information that we have explored on the topic of HIV/AIDS.



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