



UNDERGRADUATE RESEARCH  
AND CREATIVITY SYMPOSIUM



## **UNDERGRADUATE RESEARCH AND CREATIVITY MISSION STATEMENT**

The mission of the Methodist University Center for Undergraduate Research and Creativity is to establish educational opportunities that are collaborative and inquiry-based, with the intention that every Methodist University student has access to exploratory learning across the curriculum.



Providing opportunities for students to participate in undergraduate research and creative projects is a cornerstone of a quality university education. Signature programs such as this one help promote a culture of excellence that is so much a part of the Methodist University experience.

**PRESIDENT BEN HANCOCK**

# TABLE OF CONTENTS

## CHORAL ROOM, PAGES 1-3

10:00 a.m.	Brenda Conteh	PSY: "One-Sided Communication and the Perception of Annoyance: Cell Phone Usage in Public Places"
10:30 a.m.	Artur Khalikov	PSY: "Learning and Multimedia: Use of Multimedia in the Classroom Environment"
11:00 a.m.	Nazeema Muro Castillo and Rosalia Ramos	PSY: "Effects of Temperature Variance on Memory"

## BAND ROOM, PAGES 4-7

10:00 a.m.	Jasmina Gobeljic	HIS: "British Influence on Women's Education in India and Hong Kong"
10:30 a.m.	Rebecca King	WRI: "The Role of Women's Magazines in Mid-Twentieth Century America"
11:00 a.m.	Rimoni Peniamina	HIS: "Vietfemmes: Surveying the Roles of North Vietnam's Women During the Vietnam War"
11:30 a.m.	Elicia Kieser	JUS: "Smart Phones and Dumb Drivers: The Dangers of Texting While Driving"

## HENDRICKS SCIENCE COMPLEX (H122), PAGES 8-11

10:00 a.m.	Reginald Mayberry	CSC: "Mobile Radiology Radiation Protection Database (MRRPD)"
10:30 a.m.	Isuru Wijesundara	CSC: "The 'Payroll Solution' Application"
11:00 a.m.	Edward Zielonka and Isuru Wijesundara	CSC: "The MU Cares Ministry Support System"
11:30 a.m.	Chris Banks	CSC: "Tutor Database Support Program"

### **ALUMNI DINING ROOM, PAGES 12-15**

10:00 a.m.	Maida Elezovic	CSC: "Karate Club Website and Database Solution"
10:30 a.m.	Robert Gamble	BIO: "Viability of Insects as New Sources of Antibiotics"
11:00 a.m.	Ashley Johnson	ENG: "Untainted"
11:30 a.m.	Paul Stroebel	ENG: "Boon"

### **HERITAGE DINING ROOM, PAGES 16-19**

10:00 a.m.	Andrea Candlish	PSC: "Contributing Factors of Population Growth in the Modern World"
10:30 a.m.	Marissa Kuzbyzt	PSC: "Factors That Contribute to People's Opinion on Euthanasia: A Study of Survey Research"
11:00 a.m.	Dzenana Dzanic	BHC: "Eugenics and Compulsory Sterilization"
11:30 a.m.	David Burns, Aleksandra Fetisova, Chris Harper	MKT: "The Role of Clubs and Organizations in Student Retention and Its Applications to Methodist University"

### **CHAPEL, PAGES 20-23**

10:00 a.m.	Taira Lobban	MUS: "Fanny Mendelssohn: An Examination of Gender and Compositional Pursuits"
10:30 a.m.	Maria Frisone-Barrera	SOC: "'Don't Ask; Don't Tell': The Private and Professional Life of Homosexual Soldiers"
11:00 a.m.	Marianty Mavroz Gonzalez	SOC: "Atheism in the US Army: A Quiet Bug"
11:30 a.m.	Miguel Tevez	SOC: "Allen Ginsberg's 'Howl' and the Beat Generation: From Manifesto to Social Movement"

**POSTER PRESENTATION IN BERNS STUDENT CENTER, PAGES 24-29**

10:00 a.m.	Erin Fegley	BIO: "Statistical Analysis of the Effects of the Cape Fear River on Plant Growth in Surrounding Areas"
10:00 a.m.	Alexis Lanza and Matea Peric	BIO: "Detailed Analysis of the Pollen Flora of North Carolina and Assembly of the Identification Key of the Pollen"
10:00 a.m.	Kayci Miller	CHE: "Spectroscopic Determination of Hemoglobin in Tooth and Bone Using Leuco Crystal Violet"
10:00 a.m.	Leigh Ann Philbee	ENM: "Eminent Domain: A Threat or a Necessity to Growth?"
10:00 a.m.	Lauryn Elizabeth Steel	ENM: "Mercury in the Environment: An Increasing Threat to Health"
10:00 a.m.	Tyler Younger	PXS: "Comparison of Equivalency of Results Between the One-Mile Walk-Run and PACER Tests for Determining the Aerobic Capacity of University Students"

**ONE-SIDED COMMUNICATION AND  
THE PRECEPTION OF ANNOYANCE:  
CELL PHONE USAGE IN PUBLIC PLACES**

By

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**FACULTY MENTOR**

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Professor of Psychology

DEPARTMENT OF PSYCHOLOGY

**ABSTRACT**

The present study will attempt to add to a growing body of literature on the perception of annoyance by studying what makes one-sided conversations so irritating. There are two main purposes of the present study. The first is to expand on prior research on the idea of “halfalogue,” which suggests that annoyance from cell phone usage is measured higher because a bystander overhearing the cell phone conversation can hear only one side.

Roughly 48 participants from Methodist University psychology classes will be randomly assigned to one of the following groups: Cell phone conversation in English, cell phone conversation in Russian, face-to-face conversation in English, or a face-to-face conversation in Russian. Subjects will complete a packet of Methodist University campus surveys while the conversations occur just outside of the door. Annoyance will be measured using the Annoyance Rating Scale.

If the “halfalogue” theory is correct, it is hypothesized that there will be a main effect of language, with more annoyance for the Russian speaker (no comprehension) than the English speaker (one-sided communication). A main effect of conversation type is also anticipated, with a difference in perceived annoyance for the cell phone conversation (one-sided communication) than for the face-to-face communication (two-sided communication). Finally, an interaction is anticipated with more reported annoyance for the Russian cell phone conversation than for the English cell phone conversation. Applications to social settings will be discussed.

**LEARNING AND MULTIMEDIA:  
USE OF MULTIMEDIA IN THE  
CLASSROOM ENVIRONMENT**

By

**ARTUR KHALIKOV**

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**FACULTY MENTOR**

**DR. KATHARINE SNYDER**

Professor of Psychology

DEPARTMENT OF PSYCHOLOGY

**ABSTRACT**

Technological progress of the late twentieth century has provided new resources and instruments to educators in every field of knowledge. The purpose of this experiment is to assess how the use of multimedia in the classroom affects learning. Participants will be exposed to a twenty-minute lecture on identifying ten structures in the brain. The same material will be presented in one of three formats, either with or without accompanying notes. The first format will be the chalk board, while the second format is a Keynote slide presentation. Lastly, the 3D brain application for the Ipad2 will be utilized. Since the Ipad2 application enables the presenter to rotate, enlarge, and slice the brain, it resembles the use of Smart Board technology. Participants will be recruited from courses outside of the Psychology Department, and a pretest will be administered to assess knowledge about structures of the brain. A 3 (Chalk Board, Keynote, Ipad2) X 2 (Notes, No Notes) X 2 (Pretest, Post-test) Mixed Factorial ANOVA will be used, with repeated measures on pretest and post-test scores. Results will be discussed in terms of application to the college classroom.

**EFFECTS OF TEMPERATURE  
VARIANCE ON MEMORY**

By

**NAZEEMA MURO CASTILLO  
& ROSALIA RAMOS**

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**FACULTY MENTOR**

**DR. KATHARINE SNYDER**  
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DEPARTMENT OF PSYCHOLOGY

**ABSTRACT**

The present study assessed factors on how the temperature in classrooms affects memory. The study had two different levels of air temperature, 85 and 72. In a small testing room participants were paired associate verbal memory task involving high and low imagery word pairs. Thirty undergraduate students at Methodist University took part in the study. It was hypothesized that greater variance in air temperature from the standard 72 degrees Fahrenheit will lead to lower performance on tests involving paired associate verbal memory.

This study was an important one because it purported to verify that classroom temperatures play a critical role in the learning environment. This study assessed applications in human factors in the environment. It was anticipated that there will be an interaction in room temperature and the high and low imagery word pairs. It was also anticipated that there would be a significant interaction between the moderate temperature and high imagery word pairs.

## **BRITISH INFLUENCE ON WOMEN'S EDUCATION IN INDIA AND HONG KONG**

By

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**DR. CARL DYKE**

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DEPARTMENT OF HISTORY

### **ABSTRACT**

This research compares the position of women in the British colonies of India and Hong Kong from the end of the 19th through the 20th centuries. Factors such as tradition, culture, language, economy and religion influenced India toward stagnation of female education, while Hong Kong progressed.

There were differing educational trajectories of the female populations in the immediate postcolonial period. Implementing change in female education in India would have required rationales consistent with tradition. In contrast, colonial and postcolonial Hong Kong educated females for practical reasons. These differing realities on the ground encountered a mixed reception from early British feminists. Hong Kong was ignored as a comparative example by the early British feminist movement, while India was taken as an exemplar of women's oppressed condition, supporting domestic feminist politics.

Through manipulation of their own cultural perspective on India, feminists generalized the violation of women's rights in the colonies; but the case of Hong Kong shows a hidden colonialist agenda in feminists' arguments.

## **THE ROLE OF WOMEN'S MAGAZINES IN MID-TWENTIETH CENTURY AMERICA**

By

**REBECCA KING**

Senior, English Major

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**FACULTY MENTOR**

**DR. CARL DYKE**

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DEPARTMENT OF HISTORY

### **ABSTRACT**

Popular women's magazines during the post-World War II era in the U.S. reflect a culture and economy adjusting from a war-time to a consumer-driven economy. Articles with titles like "You Can't Have a Career and Be a Good Wife" and "Why I Quit Working," along with advice columns on proper etiquette between men and women, flooded the magazines. Such articles reinforced more traditional gender roles where masculine and feminine qualities are depicted as not only being the foundation of the family but a stable, healthy society. At the same time, however, articles like "The Married Woman Goes Back to Work" and magazine advertising campaigns that targeted women as a vital part of the post-war capitalist success, showed the complex, dual roles women were playing. Popular women's magazines were the voice for social attitudes and biases, and the question of where women belonged was being asked over and over. This research will examine how magazine articles reinforced traditional gender roles yet simultaneously fueled the women's feminist movement.

**VIETFEMMES: SURVEYING THE ROLES  
OF NORTH VIETNAM'S WOMEN  
DURING THE VIETNAM WAR**

By

**RIMONI PENIAMINA**

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**FACULTY MENTOR**

**DR. PETER C. MURRAY**

Professor of History

DEPARTMENT OF HISTORY

**ABSTRACT**

There is no effort to escape the fact that this research has a saturated feminist undertone. Frankly, this research will attempt to bring to light feminist thoughts on the implication of women's presence in a historic event that is usually smeared with masculine rhetoric. This research deals with a dimension of feminism that differs from past popular Western feminist rhetoric such as advocating for women's suffrage or admissions into universities or essentially rallying for equal treatment in every aspect of society.

The feminist tone of this research transcends social class, educational background, and most importantly, race. What feminism meant for North Vietnamese women was to share the responsibilities and sacrifices of war in order to protect their land, families, and way of life. Their involvement was not merely an act of patriotism but rather a reaction to the local crises at hand. But this research is not an account of celebration of North Vietnamese women; instead it is a patchwork of their experiences during this tumultuous time.

## **SMART PHONES AND DUMB DRIVERS: THE DANGERS OF TEXTING WHILE DRIVING**

By

**ELICIA KIESER**

Senior, Justice Studies Major  
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**FACULTY MENTOR**

**DR. ERIC SEE**

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Department of Justice Studies,  
Applied Forensic Science & Cyber Crime

DEPARTMENT OF JUSTICE STUDIES,  
APPLIED FORENSIC SCIENCE & CYBER CRIME

### **ABSTRACT**

Across the country, automobile tragedies have occurred due to texting while driving. Studies have shown that texting while driving may in fact be more dangerous than drinking and driving. In response, 35 states and the District of Columbia ban the practice, and an additional 9 states require a hands-free option to use a cell phone while driving. This project uses survey data in an attempt to understand the level of student participation, in high school and in college, in texting while driving, and how student's parents may have influenced this dangerous process. While more empirical data is needed, this project represents an early attempt to examine the practices and influences of a vulnerable and at-risk population.

## **MOBILE RADIOLOGY RADIATION PROTECTION DATABASE (MRRPD)**

By

**REGINALD MAYBERRY**

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**FACULTY MENTOR**

**DR. TERRY HOUSE**

Associate Professor of Computer Science & Department Chair,  
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DEPARTMENT OF COMPUTER SCIENCE

### **ABSTRACT**

The initial problems expressed by my client within its current operations are writing, tracking, and sorting a rapidly expanding amount of patient information to a stand-alone desktop system. In addition, the office has a medical requirement to monitor and report patient exposure rates. This will include, but is not limited to, irregular radiation dosage caused by non-calibrated machines. Another aspect of this problem is overexposure of patients due to repeat exposures during x-rays. X-ray Technicians are also at risk by overexposure to radiation. The mission for this project will be to enhance accuracy, speed, and reliability in a fractured system. The implementation of this new infrastructure will support a network and bridge the communication between the primary caregiver and the patient. Our ultimate goal is to fulfill the needs and requirements of the customer, medical providers, and employees. This means adhering to hospital administration codes and staying in compliance with all the regulations, to include patient confidentiality. The purpose of having a new program is to increase the efficiency of the process, add ease of access to customer information and provide customers with the convenience of having professional medical care service their existing health concerns.

## **THE 'PAYROLL SOLUTION' APPLICATION**

By

**ISURU WIJESUNDARA**

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Hometown: Sri Lanka

**FACULTY MENTOR**

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Associate Professor of Computer Science & Department Chair,

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DEPARTMENT OF COMPUTER SCIENCE

### **ABSTRACT**

The “Payroll Solution” application has been a desire of many small businesses, which manage several satellite branches. The Payroll Solution system will boast the following functions to support small businesses like the one where I am currently employed. When using the Payroll Solution program, employees will have the ability to: mark their time cards electronically by logging-in to the payroll web site which will connect with the database in the main branch. In addition to marking time-in and time-out through the website, the application will also allow employees to submit days off, and schedule vacation time. This system will allow employees to view, edit and manage their employee status in conjunction with the corporate office’s master employee accountability application server. This application can be implemented in a real-world business to support the scheduling and payroll administration for small-business owners.

## **THE MU CARES MINISTRY SUPPORT SYSTEM**

By

**EDWARD ZIELONKA  
& ISURU WIJESUNDARA**

Senior, Computer Information Systems Major & Senior, Computer Information Systems  
Major

Hometowns: Hillsborough, NJ & Sri Lanka

**FACULTY MENTOR**

**DR. TERRY HOUSE**

Associate Professor of Computer Science & Department Chair,  
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DEPARTMENT OF COMPUTER SCIENCE

### **ABSTRACT**

The religious community, specifically churches in the Fayetteville area, does not have a one-stop location to coordinate all the good deeds it performs for the community. Therefore, many of the volunteer work and services provided to the community are redundant among many of the religious institutions. The research team decided to create a website named: "MU Cares" that will register all the churches in the area, and allow them to submit their community engagement and volunteerism activities that they support every year. This site will allow those participating institutions to coordinate their efforts in an efficient manner so that there is not an over-duplication of efforts to meet a specific need in the community. This will also serve as a portal for all interested parties to discuss great ideas and suggestions for future outreach ministries in the community. This project has the potential to be a significant point of collaboration for the religious community, with MU leading the way to support the less fortunate of our city. This project will be a live website, and the MU Computer Science Department will act as webmaster for the community.

## **TUTOR DATABASE SUPPORT PROGRAM**

By

**CHRIS BANKS**

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**FACULTY MENTOR**

**DR. TERRY HOUSE**

Associate Professor of Computer Science & Department Chair,  
Department of Computer Science

DEPARTMENT OF COMPUTER SCIENCE

### **ABSTRACT**

This program will benefit the Tutoring Department by optimizing the time sheet for Peer Tutors, to having a better management of the information, and providing a paperless environment. The Tutor Database Support Program will be created in a web-based approach that will be installed in a computer reserved specifically for this purpose. The location of the computer will be in the Library, downstairs. The program will be installed and maintained by the CSC Department, and managed by the supervisor of the Tutoring Department. This proposal has a real-world application at the MU Tutoring Center, where the staff member in charge of the tutors will have a electronic support mechanism to manage the hours and activities of his student workers.

## **KARATE CLUB WEBSITE AND DATABASE SOLUTION**

By

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**FACULTY MENTOR**

**DR. TAT W. CHAN**

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School of Science and Human Development

DEPARTMENT OF COMPUTER SCIENCE

### **ABSTRACT**

Karate club “Student” is a club based in Mostar, Bosnia and Herzegovina, with an office and a secretary that, upon request from the coach, registers competitors for each competition. The problem is the following: there is no electronic database of the competitors, or of any members of the club. In addition, the club does not have a website to publish results from competitions and announce upcoming events. A dynamic website that has the capability to be connected to a database is needed to facilitate the club’s activities. In a practical application, there would be an option for authorized login in order to see the database of competitors, add new competitors, and print reports needed, e.g. list of competitors, their achievements, categories, and ranking. The website will target young people who have the wish to join a karate club, parents of prospect members, current members who wish to see upcoming and past events, alumni of the club who live in different countries around the world, coaches and members of other karate clubs, and the general public. It would be developed in both English and Bosnian.

## **VIABILITY OF INSECTS AS NEW SOURCES OF ANTIBIOTICS**

By

**ROBERT GAMBLE**

Senior, Biology Major  
Hometown: Fayetteville, NC

**FACULTY MENTOR**

**DR. LORI BROOKMAN**

Professor of Biology & Dean, School of Graduate Studies

DEPARTMENT OF BIOLOGY

### **ABSTRACT**

Considering that 80 percents of the animals that inhabit this planet are insects and that recent experimentation with insects has yielded promising results, I believe that further research and testing of insects is warranted, and this project attempts to identify potential antimicrobial activity from lysates and centrifugal separation of the brain and sub-esophageal ganglia of the Giant Madagascar Hissing Cockroach (*Gromphadorhina portentosa*).

Microscopic excision of the brain and sub-esophageal ganglia will be performed to gather the biomass for testing. Screening will then be accomplished by utilizing the Kirby-Bauer disk-diffusion method to test for bacterial inhibition under standard conditions and an attempt will be made to identify any agents isolated by using traditional biochemical and microbiological techniques available. It is my belief that through basic antibiotic susceptibility testing, initial inhibition of bacterial growth can be identified in this diverse class, warranting further research into their viability as sources of much-needed new antibiotics.

## **UNTAINTED**

By

**ASHLEY JOHNSON**

Junior, Elementary Education Major  
Hometown: New Bern, NC

**FACULTY MENTOR**

**DR. EMILY WRIGHT**

Professor of English & Writing

DEPARTMENT OF ENGLISH & WRITING

### **ABSTRACT**

My paper will examine a key decision made by Ike McCaslin, the main character in three William Faulkner stories: “The Old People,” “The Bear” and “Delta Autumn.” Ike McCaslin comes from a powerful family, and with this well-known name comes power, land, money and slaves. However, toward the end of “The Bear” Ike announces his decision to renounce his considerable inheritance. In doing so, he loses not only power and wealth but also his wife and his position as a social insider.

My paper analyzes the reason why Ike makes this decision. It shows that Ike’s decision to renounce his inheritance is a result of two major influences on his life: the Native American understanding of nature that Ike gains from Sam Fathers and the corruption that comes from the ownership Ike learns from his ancestor, Lucas Quintas Carothers McCaslin. My paper will describe these important influences on Ike’s momentous decision.

## **BOON**

By

**PAUL STROEBEL**

Junior, Writing Major  
Hometown: Milford, IN

**FACULTY MENTOR**

**DR. EMILY WRIGHT**

Professor of English & Writing

DEPARTMENT OF ENGLISH & WRITING

### **ABSTRACT**

My paper addresses the character of Boon Hogganbeck in William Faulkner's novella "The Bear." At first glance, Boon appears to be foolhardy, lackadaisical member of the hunting party that is the focus of "The Bear." Considered a minor and unimportant character, he has been virtually ignored by the critics. However, close analysis of Boon suggests that he plays a much more significant role than most readers realize, being a key factor in Ike's coming-of-age drama and in the death of Sam Fathers. My paper will analyze Boon's role in these rites of passage, showing Boon Hogganbeck to be a much more important character in "The Bear" than the critics have recognized.

## **CONTRIBUTING FACTORS OF POPULATION GROWTH IN THE MODERN WORLD**

By

**ANDREA CANDLISH**

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**FACULTY MENTOR**

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Professor of Political Science,  
Department Chair of Government Studies & the Director,  
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DEPARTMENT OF GOVERNMENT STUDIES

### **ABSTRACT**

This study employs a quantitative analysis to determine which factors contribute toward population growth. The United Nations PEDA model (Population, Environment, D–Socio-economic, and Agriculture), that is used to study African nations, provided the framework for this study. This model provided a good multi-disciplined approach to determine the factors that contribute to population growth. The major findings were that the most influential factors were the level of economic development, the male-to-female ratio, globalization, abortion (legal or not), and contraceptive use. The factors that had little to no impact were the percentage of woman in the work force, source of a nation’s wealth, the number of aids deaths and the number of people employed. This study demonstrated that resolving population issues requires national policy makers to consider a multi-disciplined approach to achieve the desired end state for their citizens. Policies that do not use this approach have proved detrimental to the country’s social, economic, and military strength.

**FACTORS THAT CONTRIBUTE TO  
PEOPLE'S OPINION ON EUTHANASIA:  
A STUDY OF SURVEY RESEARCH**

By

**MARISSA KUZBYT**

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Professor of Political Science,

Department Chair of Government Studies & the Director,  
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DEPARTMENT OF GOVERNMENT STUDIES

**ABSTRACT**

This study was a quantitative and empirical analysis of survey data to determine the most influential factors that influence opinion on euthanasia. A secondary analysis was done of the 2006 General Social Survey. The study identified the following factors that play the largest role in a person's opinion on euthanasia. Education level, race, income, political view, religion, belief in an afterlife, and opinion on abortion. The study revealed that people who are college graduates, white, have a high income, are liberal, Jewish, and do not believe in an afterlife or support abortion will be in favor of euthanasia. People who did not graduate high school, are black, have a low income, are conservative, conservative protestant, believe in an afterlife or are against abortion, were likely to be against euthanasia. Policy makers and political parties will find much use in this kind of study because it gives insight into the kinds of people who support euthanasia and who oppose euthanasia. Furthermore, candidates running for any sort of office will also be intrigued by this study and gain some insight into potential voters.

## **EUGENICS AND COMPULSORY STERILIZATION**

By

**DZENANA DZANIC**

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**FACULTY MENTOR**

**DR. WARREN McDONALD**

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The Professional MBA Program

THE CHARLES M. REEVES SCHOOL OF BUSINESS AND ECONOMICS

### **ABSTRACT**

Eugenics is a process long abandoned, but continues to have lingering negative effects on many in society. Some in the North Carolina legislature are attempting to provide reparations to those citizens of the state who were affected by this process. This is a controversial move, but one that deserves our review. While it seems to be clearly unconscionable by those in contemporary society, it is not new, and this research will allow for our reflection on how eugenics has affected contemporary society. We will concentrate our efforts on North Carolina due to its recent actions related to compensating victims of eugenics, but will include relevant material from other states in our research. Using secondary data related to eugenics and the treatment of populations exposed to this practice, this study will evaluate the overall effect of eugenics on contemporary society in North Carolina, which is the first state in the union seeking compensation for the damage done to the families that were exposed to the practice. What is the source for funding these reparations, and is it a sufficient recoupment for people who were sterilized against their will?

**THE ROLE OF CLUBS AND ORGANIZATIONS IN  
STUDENT RETENTION AND ITS APPLICATIONS  
TO METHODIST UNIVERSITY**

By

**DAVID BURNS, ALEKSANDRA FETISOVA,  
AND CHRIS HARPER**

Junior, Business Administration Major; Junior, Business  
Administration Major & Junior, Marketing Major  
Hometowns: Warrenpoint, Ireland,  
Moscow, Russia & Yadkinville, NC

**FACULTY MENTOR**

**DR. MARK KENDRICK**  
Assistant Professor of Marketing

THE CHARLES M. REEVES SCHOOL OF BUSINESS AND ECONOMICS

**ABSTRACT**

Methodist University today serves approximately 2,200 students—1,600 in the day program and 600 in Methodist University at Night. The student body includes persons of diverse ages and nationalities, representing 48 states and 42 foreign countries. Approximately 40 percent of our students come from out of state. Clubs and organizations are open to all students, and participation is encouraged. Student organizations are each governed by a constitution, supervised by a faculty advisor, and have a purpose compatible with that of the mission of the University. The campus organizations focus on academics as well as student engagement.

Our research has shown that student engagement in clubs and organizations improves retention and graduation rates (Fischer, 2007; Lotkowski, Robbins & Noeth, 2004). For this reason, we are interested in learning what makes a student club successful in regard to student involvement and overall club retention. As part of a joint class project, we surveyed students campus-wide with a goal of learning more about what students viewed as important regarding what role clubs and organizations play when it comes to furthering a university student's collegiate experience. We intend to use the information gathered for the purpose of developing and presenting a pilot "marketing tool kit" for the Student Government Association to use in a club leadership seminar for the purpose of enriching student leadership opportunities.

**FANNY MENDELSSOHN: AN EXAMINATION OF  
GENDER AND COMPOSITIONAL PURSUITS**

By

**TAIRA LOBBAN**

Senior, Music Education Major  
Hometown: Fayetteville, NC

**FACULTY MENTOR**

**DR. SCOTT MAROSEK**

Assistant Professor of Music

DEPARTMENT OF MUSIC

**ABSTRACT**

Much of the previous research on Fanny Mendelssohn has focused on the relationship between Fanny and her more famous younger brother Felix Mendelssohn. However, previous research reduces the legitimacy of Fanny Mendelssohn as a true composer. This study provides examples of how Fanny Mendelssohn engaged in compositional pursuits despite social bias and had a musical style equally notable to that of her contemporaries. Of particular interest to this study are the three songs from Felix's op.8 that were actually composed by Fanny. Primary and secondary sources for this study include books, scholarly music journals, internet sources, scores and recordings.

**'DON'T ASK; DON'T TELL':  
THE PRIVATE AND PROFESSIONAL LIFE  
OF HOMOSEXUAL SOLDIERS**

By

**MARIA FRISONE-BARRERA**

Senior, Sociology and Communications Major

Hometown: Quito, Ecuador

**FACULTY MENTOR**

**DR. REGINA SMARDON & DR. VIDA BAJC**

Assistant Professor & Department Chair, Department of Sociology and

Assistant Professor of Sociology

DEPARTMENT OF SOCIOLOGY

**ABSTRACT**

When President Bill Clinton intended to eliminate the ban on homosexual soldiers in the military in 1993, the opposition insisted that the presence of openly homosexual soldiers in a unit would negatively affect the morale of the soldiers. The compromise led to the "Don't Ask Don't Tell" policy which established that: (1) applicants for military service would not be asked to reveal their sexual orientation, (2) inquiries or investigations solely to determine a service member's sexual orientation would not be initiated, but inquiries or investigations could be initiated when credible information indicated a basis for discharge or disciplinary action (e.g., homosexual conduct), and (3) a statement by a service member admitting a homosexual or bisexual identity would create a reputable presumption that the service member is engaging in homosexual acts or has the propensity or intent to do so. This paper investigates: (1) actions taken by the military against soldiers who were under suspicion of homosexual conduct; (2) actions taken by soldiers to protect their identity and positions in the military; and (3) how the recent overturn of this policy has been changing the private and professional lives of soldiers.

## **ATHEISM IN THE U.S. ARMY: A QUIET BUG**

By

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### **ABSTRACT**

In recent years, larger numbers of American soldiers have identified themselves as atheist. Using data from eight qualitative interviews, this research looks into the experience of active-duty soldiers in the U.S. Army in relationship to their religious views and/or affiliation, taking a particular interest in those soldiers who are self-identified as atheist. This paper analyzes their perceptions of discrimination, alienation and experiences of social and professional barriers throughout their career.

Data collected so far evidences that there are many factors that affect religious freedom in the U.S. Army, including issues of rank and race. There is also evidence that this phenomenon affects only a small portion of the population and that it is still an underlying issue that is not discussed openly in the organization.

**ALLEN GINSBERG'S 'HOWL' AND  
THE BEAT GENERATION:  
FROM MANIFESTO TO SOCIAL MOVEMENT**

By

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**ABSTRACT**

When counter-cultural movements gain sufficient public support, they can provide impetus to social and cultural changes. The Beat Generation movement is a good case study of how a group of poets was able to use media exposure to gain public support for their ideals of a liberal, open society which would sanction sexual freedom and drug experimentation. Their criticism of the post-war government in the United States through their poetry further helped them gain support of a public already highly dissatisfied by the government.

After the obscenity trials against Allan Ginsberg's "Howl" were dismissed, Americans became more accepting of drugs, homosexuality and protest. Through exposition of their ideals and objections to the government at the time, the Beats achieved enough fame to transform themselves into leaders of a social movement. This study reviews the literary and sociological sources of this counter-cultural movement to draw parallels and look for disjunctions with the Occupy Movement, particularly its ability to gain support from the public for its causes and to potentially generate social change.

**STATISTICAL ANALYSIS OF THE EFFECTS OF  
THE CAPE FEAR RIVER ON PLANT GROWTH  
IN SURROUNDING AREAS**

By

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**ABSTRACT**

The topic of the research project and poster will be the effect of the nutrients in the Cape Fear River on plants in the surrounding area. My hypothesis will be that the Cape Fear River includes nutrients that help the growth of plants closer to the river more than the same species of plants in more urban areas. My controls for the experiment will be to have the same type of soil, plant, and pot size. The independent variable of this experiment will be what I water the plants with: some with water from the Cape Fear River, some with tap water, and some with nothing at all.

**DETAILED ANALYSIS OF THE POLLEN FLORA  
OF NORTH CAROLINA AND ASSEMBLY OF  
THE IDENTIFICATION KEY OF THE POLLEN**

By

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**ABSTRACT**

Using pollen collected from flowering plants native to North Carolina, the researchers in this experiment will compile a detailed pollen identification key. This key may then be used in forensic science applications to identify pollen collected during criminal cases. Pollen is microscopic, and as a result, difficult to detect and remove from a crime scene. Equipped with this identification key, investigators may gather more evidence for a conviction.

## **SPECTROSCOPIC DETERMINATION OF HEMOGLOBIN IN TOOTH AND BONE USING LEUCO CRYSTAL VIOLET**

By

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### **ABSTRACT**

Determination of hemoglobin (Hb) in skeletal or dried remains could have many useful forensic applications such as determination of a post mortem interval or certain pathologies. This research focuses on the use of leuco crystal violet (LCV) for UV/V in spectroscopic determination and quantification of Hb in a tooth and femur sample. Using LCV, possible interferences were investigated, and it was determined that ferrous iron samples appeared to actually mask the overall reaction, while glycine had no obvious effect.

The LCV reaction was also applied to tooth and bone samples for the extraction of Hb. The extractions of the femur bone with 0.5M hydrochloric acid and the extraction of the tooth with 6.0 M urea yielded the violet product. Using the measured absorbance of each positive extraction, the following amount of hemoglobin in each sample was determined. Thus, Hb levels in bone and tooth samples were detected and quantified using LCV. Gel electrophoresis is not a reliable method for quantifying the Hb concentration in a bone or tooth sample, so using LCV is preferable for this purpose.

**EMINENT DOMAIN:  
A THREAT OR A NECESSITY TO GROWTH?**

By

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DEPARTMENT OF GOVERNMENT STUDIES

**ABSTRACT**

Eminent domain is a legal topic most people do not understand until it affects them. There are many cases in this country, some even in our own backyard. The two that I will be focusing on are the Monroe Connector-Bypass and the Fayetteville Bypass (I-295). These are both cases that are happening right now. The Monroe Connector-Bypass has been caught up in environmental lawsuits for a few years. Now, the court cases are over and the state is continuing to get money so it can break ground sometime this year and put the bypass right through farmland and low income housing. Land for the Fayetteville Bypass has already been cleared, and the state is starting to pave the roads to finish the bypass. There are many other options out there aside from the use of eminent domain. This project will show the impacts of these two bypasses and the other options that the government could take.

## **MERCURY IN THE ENVIRONMENT: AN INCREASING THREAT TO HEALTH**

By

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DEPARTMENT OF GOVERNMENT STUDIES

### **ABSTRACT**

Mercury (Hg) poisoning of humans is becoming a greater issue as we move forward into the future. The subject of Hg poisoning has gone relatively unnoticed by the public, as have the people who are most likely to inhale or ingest Hg. Throughout the world there, are many coal-burning power plants, and even in third world countries are still using coal as a reliable source of energy. When coal is burned, it releases an element called mercury, the airborne emissions of which have the ability to travel tens to hundreds of miles before depositing, primarily as rainfall, into lakes and streams where mercury accumulates in fish that may be eaten by people. With coal being the major source of mercury exposure in the environment, and coal-fired power plants all over the world, it seems almost impossible to keep mercury out of the air and soil. But many scientists have been working hard on trying to figure out a solution to this problem. Labs have been one of the leading sources in studying mercury in the soil and finding a feasible solution for remediation of mercury out of the soil. It's important that our nation takes strong steps to try and end the use of mercury in industry, and prevent it from entering the air and then settling into the water and soil.

**COMPARISON OF EQUIVALENCY OF  
RESULTS BETWEEN THE ONE-MILE  
WALK-RUN AND PACER TESTS FOR DETERMINING  
THE AEROBIC CAPACITY OF UNIVERSITY STUDENTS**

By

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**ABSTRACT**

Two tests within FITNESSGRAM designed to measure aerobic capacity are the one-mile run/walk (MRW) and the Progressive Aerobic Cardiovascular Endurance Run (PACER). The decision regarding which test to use is up to the administrator who may select either test to assess aerobic capacity. Previous studies using college students yielded high equivalency rates for both males and females on these two tests, however studies included volunteer participants who may have been more “cardiovascular fit” than the general population.

This experiment tested the reliability and equivalency of the MRW and PACER for estimating maximal oxygen uptake (VO<sub>2</sub>max) in university students. In this study, university students enrolled in a required general education wellness course were tested. These classes were made up of students of varying genders, ages, ethnicities, majors, and included both athletes as well as non-athletes, being not atypical of any college course. It was hypothesized that these two tests would result in low equivalency rates when used on non-volunteer students. The results upheld the hypothesis and interestingly, test preferences were noted among males (PACER) and females (MRW).

## OPPORTUNITY AT A GLANCE

- ◆ Approximately 2,400 students and over 80 majors and concentrations
- ◆ Student to faculty ratio 15:1
- ◆ Average class size is around 20 students
- ◆ Four graduate programs and 40 minors
- ◆ More than 100 clubs and student organizations, and students representing 41 states and 53 countries
- ◆ 19 NCAA Division III athletic teams
- ◆ An active student activities program, which was recently named the 3rd best in the country by *Campus Activities Magazine*
- ◆ Over 400 students are military servicepersons, veterans, and/or family members
- ◆ Fayetteville was recently voted No. 1 on the list of “Best Cities for Recent Grads” by the *Daily Beast*, *Newsweek’s* online young news outlet
- ◆ Rated a top-tier southern regional college by *U.S. News & World Report*
- ◆ Over 10,000 graduates

