Proceedings of the 2006 MARCUS Conference
Saturday October 7, 2006

Session I

9:30
Ashley Figueiredo: Sweet Briar College

Plasma Surface Modification of Pmma-Poss on Ta-Coated Si Wafers
PMMA-POSS [poly (methacryl isobutyl polyhedral oligomeric silsesquioxane –co-methyl methacrylate] is a nanocomposite polymer which exhibits properties between glass and organic thin films. In order to characterize thin films of PMMA-POSS, Ta was magnetron sputter-coated onto 4" (100) Si wafers to create a smooth surface for PMMA-POSS deposition. A 2.0 mg/mL solution of 45% PMMA-POSS in CHCl3 was spun-cast onto the Si, and the samples were then plasma-treated at 25 W under various conditions. The thickness of the PMMA-POSS layer was measured via ellipsometry and contact angles of deionized H2O on the surface were calculated. XPS results as well as a model to explain changes in plasma-treated surface chemistry of PMMA-POSS based films will be discussed.

9:45
David Hanna: Virginia Commonwealth University
Co-authors: A. Yacoub, M.A. Park, Y. Hong, C. Mitchell, A.P. Pandya, H. Harada, G. Powis, C.S. Chen, C. Koumenis, S. Grant, P. Dent

Osu-03012 Regulates Cell Growth In Vitro of Human Glioma Cells
Glioblastoma multiforme is a form of cancer difficult to treat. In the best occurrence an extra year can be obtained with rigorous radiation therapy. Therefore, new studies focused on the use of the drug Wortmannin and its ability to inhibit certain pathways such as the PI3 Kinase. The purpose of the project was to determine whether new drugs (OSU-03012) coupled with current treatments could effectively limit the growth of GBM cells. Cell viability was evaluated under light microscopy with trypan blue reagent. It was determined that the combination of OSU-03012 with Wortmannin was statistically the most effective in limiting cell growth. Therefore in the future it would be crucial to determine the precise process in which this and other pathways alike are affected.

10:00
Rebecca L. Chapman: Randolph-Macon Woman's College
Coauthors: Amanda Leto And Dr. William Bare

Translocation of Lead in English Ivy, with Applications in Phytoremediation
Our investigation was focused on the translocation of lead ions through the "runners" of English Ivy. Ivy was harvested from the Randolph-Macon Women's College campus, cut into sections (each containing two root systems) and planted with one root system in each of two containers. One container was treated with a 200 ppm lead solution while the other was watered with deionized water. Ivy was harvested at regular intervals, cut into sections, and digested using the EPA wet ash method. The lead content of each sample was determined using atomic absorption spectroscopy. Lead was observed to move through the runners. The rate of translocation increased in the presence of chelating agents.

10:15
Jessica Leonardi and Alison Carr: Sweet Briar College

The Effects of Perceived Math Performance on Explicit Math Attitude
This study examined the effect of mathematics performance on mathematics attitude. Forty college-aged females were used as participants. A preliminary mathematics attitude survey was administered to each participant to measure explicit mathematics attitude 1-week prior to taking a math task. Participants were split into high and low math attitude groups based on this original attitude survey. Half of each of these groups were given positive feedback on the math task and the other half received negative feedback; this created a total of 4 participant groups. After receiving feedback, each participant completed a post-test attitude survey. It was found that the groups who received feedback different from their original attitudes had significant changes in attitude based on the feedback they were given.

10:30
Whitney Gaber: Radford University

Women Can Be Scientists Too: A Review of Role Models' Effects on the Academic Decisions and Possibilities of Women in Male-Dominated Fields
In this paper we discuss current research and theories on the relationship of role models, possible selves, and gender in order to discover whether the use of role models increases attraction to and/or success in academic fields stereotypical of the opposite gender. Academic areas such as math and science are typically male-dominated; however, does the awareness of role models, specifically female role models, increase a woman's possible self-views and decisions to participate in an atypical feminine academic field? Current research suggests this to be an accurate assumption; further research is required in order to determine what causes women to avoid male-dominated fields, and to have imagining themselves as being successful or proficient in these areas.

Session II

9:30
Stephen English: Hampden-Sydney College

When Equal Isn't: Exploring Wasserstein's Feminist Voice in "The Heidi Chronicles"
A critical argument has emerged in the years following Wendy Wasserstein's 1989 play, The Heidi Chronicles. This argument revolves around Wasserstein's choice to have her main character, Heidi Holland, adopt a baby on her own. Many critics feel the ending of Wasserstein's play presents an antiquated view of womanhood; some go as far as to say The Heidi Chronicles is anti-feminist. However, I argue through a use of close reading that Wasserstein's ending is in no way anti-feminist. In fact, Wasserstein's views on critical issues such as success, sexuality, and family support a reading that the main character's decision to adopt a baby is a brave and ahead-of-her-time one.

9:45
Jenna Stephenson: James Madison University

The Lavender Menace
In response to growing discrimination and hostility, a group of forty lesbians wore lavender T-shirts inscribed with "Lavender Menace" to the Second Congress to Unite Women held in New York City in May of 1970. Feminists and historians alike recognize this event as the single most important action organized by lesbians who wanted the women's movement to acknowledge their presence and their needs. Filling the aisles and the stage, they spoke of their negative experiences with the heterosexual members. This was one of the pivotal moments in the feminist movement because it completely reshaped the relationship of lesbians to feminism for years to come.

10:00
Jacquelyn Wilkins: Sweet Briar College

The Tribe of Tiresias: Androgyny in Ancient Athens
Codes of gender informed the ways in which ancient Athenians defined citizenship, specifically as it functions in civic and religious ritual. I will focus on the normative trajectory of gender roles and the formation of what I perceive as a third gender category for those who could not attain masculinity or femininity according to those norms. This category presents forcefully during the time of the ephebia for young men, during which they retained the physicality of males and the political status of females. Drawing from the worlds of Greek tragedy and comedy, I will attempt to excavate cultural attitudes towards those who fall outside the traditional male/female dichotomy. By doing so, we can better understand how the Athenians constructed identity at an ideological level.

10:15
Benjamin Boone: The College of William and Mary

Gender, Garb and Guatemala: Traditional Traje's Transformations through Genocide
Throughout Maya history, traditional traje dress created representations of self, community and nation. As Guatemala plunged into civil war, traje began to act as a catalyst for shifts in the nation's imaginary concerning the groupings of gender and ethnicity. Beginning with pre-violence traditions in Maya society, this paper will examine the shifts in the concepts of political, ethnic and gender constructions as they relate to traditional traje, Maya women and military violence. In the post-war context, traje became a means of remembrance, tying Maya to the past and uniting them in

the future. Ultimately, this paper argues that through the conduit of traditional traje, Maya women attained power and representation in a drastically changing social setting while still maintaining centuries old cultural practices.

10:30
Joyce F. Presley: James Madison University

Virginia's Reaction to the Brown Decision
The United States Supreme Court has handed down several monumental decisions. The decision of Brown v. Board of Education of Topeka in 1954 proves to be one such decision. In May of 1954, when the Supreme Court read the decision of the Brown case public school systems across America began to change dramatically. In many of the southern states, there was a move for massive resistance toward the new policy. In Virginia, the traditional leader of the south variously fought the decision for four years. “Virginia reacted to the Brown decision in stages; the first in 1954 with a reaction of calmness quickly followed by defiance, the second in 1955 with a push for massive resistance, and a third in 1958 of moderate compliance.”

Session III

9:30
Rachel Spory: Eastern Mennonite University

Voices from the Margins: Discursive Nonviolence
Violence generally monopolizes the discourse of social change. An alternative voice is that of marginalized people, who confront nonviolently the danger of forfeited basic rights and need to secure rights. This essay applies sociological theories on the cause of violence to several case studies. It suggests marginalized voices may be heard as peacebuilding literature and nonviolent rights recognition help us transcend the human rights dichotomy.

9:45
Fatima Lbida: Sweet Briar College

Western Sahara Stalemate: Thirty Years of Intractable Conflict
The UN peacekeeping mission to Western Sahara, MINURSO, has stalled many times.
The conceptual and technical problems facing the mission stem from the lack of fundamental consensus between the belligerent parties, Morocco and the Polisario Front. Historical and geographical factors contribute to the creation and development of the conflict. They complicate the implementation of the settlement plan, which purpose is a self-determination referendum for the people of Western Sahara.

10:00
Michael Jabbara: The College Of William and Mary

American Orientalism and Al Maghreb: Casablanca in the Western Imagination
Before the oil embargo and the Arab-Israeli conflicts of the late 1960s and early 70s shifted focus to the Middle East, Americans constructed their idea of Arab culture and identity from their views of the Maghreb, or the North African region consisting of Morocco, Algeria, Tunisia, Libya and the Sahara. This critical process began with the Allied invasion of French North Africa in 1942 during World War II, and continued on till the early 1970s. During this period, American representations of the region through cinematic, literary, journalistic and historical accounts created an “exotic” vision of North Africa. Due to American cultural and political dominance, the circulation of these texts defined the “Arab” for the West and transformed the imagined into a reality.

10:15
Mark A. Hillinger: The College of William And Mary

Strengthening Global Environmental Governance: The Case for a United Nations Environmental Organization with an International Environmental Dispute Resolution Mechanism
This paper addresses the institutional limitations of global environmental governance and offers an addition to a widely-proposed solution for the global environmental governance deficit: a new institution, an 'United Nations Environmental Organization', built upon the foundation of the United Nations Environmental Programme, with a powerful International Environmental-specific Dispute Resolution Mechanism.

10:30
Ferrell E. Lyles: Sweet Briar College

Behind Closed Doors: Deception vs. Growth
The notion of “transparency” has become a large topic of interest on the International stage. Many large organizations such as the International Monetary Fund, The World Bank, etc., have invested a great deal of time and resources researching the benefits of transparency in developing and developed countries alike. These international organizations and others have published many papers and articles regarding the need for more “open” economic and political systems so that a country might be successful. Transparency International and The World Bank provide transparency and corruption information for the countries studied. This project explores the possibility of a positive significant correlation between economic/political/institutional transparency and economic growth across 158 countries. The results might surprise you.

Session IV

9:30
Joshua D. White: James Madison University

Black Swan Records: An Experiment in "New Negro" Ideology
“The Negro has come to himself. The war shook loose from their Ancient moorings the old ties of love and devotion to the South” said Harry Pace in a speech in 1921. Pace alluded to the “New Negro,” a term coined in the 1890s that the black intelligentsia adopted to describe a new sense of identity after World War I of African Americans. The Harlem Renaissance also developed out a deeper sense of “Negro” identity in the arts. In the midst of these movements, Harry Pace began Black Swan Records in New York City, “the first major black-owned record company.” Black Swan fit into “New Negro” ideology and the Harlem Renaissance by acting as a catalyst musically, ideologically, and through an experimental display of African American business.

9:45
Olivia Lucas: College of William and Mary

White Night Fantasies: Finnish Heavy Metal Music as Cultural Identity
Heavy metal has become an artistic voice and a rebirth of national romanticism for Finland; through intimate integration with the nation’s past and present, it vociferously expresses the thoughts, feelings and cultural identity of a people who have long been silent. Through the application of Piercian semiotics as interpreted by Thomas Turino, five signs were identified which worked together within the music to signify Finnish-ness. These were designated as Nature, the Past, the Epic, Folk and the classical/Romantic. Interviews with musicians and fans, general research on Finland as a nation and careful listening to Finnish heavy metal, folk and classical music reveal how the makers of Finnish heavy metal carefully employ these signs to create a music that can only be understood as Finnish.

10:00
Kristen Schoenberger: James Madison University

Family and Culture in Internment Camps: Changes and Consequences
The Japanese American experience in the internment camps during World War II altered family and economic lifestyle, impeded cultural traditions, and left a lasting effect on the Japanese long after their eventual release. Personal accounts of the struggles of daily life in the camps provided the main focus of research. The nature of the internment camps as well as certain living conditions brought changes in family relationships, particularly a growing rift between the Issei and Nisei generations. Japanese internees further experienced economic loss of income, property, and educational opportunities. Certain cultural restrictions, such as censorship of the Japanese language, undermined Japanese community ties and unity as an ethnicity. Each of these issues continued to affect the Japanese communities long after resettlement.

10:15
Lisa A. Pannucci: James Madison University

The Overland Trail: Where Her Life was Changed
During America’s nineteenth century trend of westward expansion, there was a continuous swell of emigrants who traveled on several trails across the country for various reasons. The female experience in this westward migration has often been overlooked due to their minority on the trail, though it significantly helped to redefine the female

gender. In order to survive, women drastically changed their lives by breaking away from the standard east coast ideology. Making use of personal diaries kept by several women who followed these westward trails, this paper examines the new feminine identity that was established along the way. These pioneering women were able to shatter all boundaries and stereotypes with strength, courage, adaptation, and perseverance, which they unrelentingly continued to pursue once in the West.

Session V

11:00
Jake Bennett: Roanoke College

Growth of Single-Wall Carbon Nanotubes from Nanocrystaline Maghemite
Growth of single-walled carbon nanotubes (SWNT) in specific configurations is very important for applications in nanoelectronics. This project focused on growth of SWNTs from novel catalysts, specifically nanocrystals of maghemite (γ-Fe2O3), for fabrication of sensor devices. The maghemite nanocatalyst for SWNT growth was obtained by dehydroxylating lepidocrocite (γ-FeOOH). Lepidocrocite was synthesized by neutralizing ferrous chloride solution with NaOH. Infrared and Mössbauer spectroscopy results confirmed the growth of maghemite nanocrystals from lepidocrocite. SWNTs were then grown using maghemite nanocatalysts deposited on a (100) Si wafer by CVD. The growth of SWNTs was confirmed from AFM and SEM imaging. The average diameter of the nanotubes was measured to be about 2 nm. Detailed analysis of the morphology of the maghemite nanocatalyst and SWNT growth will be presented.

11:15
Reza Montazami: Virginia Polytechnic Institute and State University
Co-author: Vaibhav Jain

Electrochromic Properties of Thin Conductive Films, Formed by Ionically Self-Assembled Monolayers (ISAM) Technique
New electrochromic devices (ECD), designed and constructed base on electrochromic polymers, were proposed and studied in this work. Cyclic voltammetry (CV) technique was employed to study redox properties of the devices and to help to determine the operating voltage of each device. Spectroscopy was then used to study the absorbance and transmittance properties of each device at its operating voltage(s). Each and every device demonstrates high contrast and change in absorbance and transmittance in visible part of spectrum. The response time of devices were also measured as function of frequency.

11:30
Hakan Seyalioglu: The College of William and Mary
Co-authors: Crump, Goldenberg, Liskov

Tweakable Blockciphers Under Exponential Attacks
The concept of the tweakable block cipher was first introduced by Liskov, Rivest and Wagner in 2002. Tweakable block ciphers use an additional input, the tweak, in order to be able to call an essentially different instance of a block cipher. In the constructions given in the paper, the authors construct tweakable blockciphers secure under polynomial attacks from given secure blockciphers. In our research, we look at constructing tweakable blockciphers that are secure against exponentially many attacks, first proposed by Liskov by modifying a Luby-Rackoff blockcipher. We give an exponentially secure tweakable blockcipher construction and prove that the construction can not be improved upon in running time by using the exclusive-or operator on the tweak and any collection of points of the data stream.

11:45
Brandon Cook: Lynchburg College
Co-author: John Eric Goff

Parameter Space for Successful Soccer Kicks
A computational model of two important types of soccer kicks, the free kick and the corner kick, is developed with the goal of determining the success rate for each type of kick. What is meant by ‘success rate’ is the probability of getting an unassisted goal via a free kick and the probability of having a corner kick reach an optimum location so that a teammate’s chance of scoring a goal is increased. Success rates are determined through the use of four-dimensional parameter space volumes. A one-in-ten success rate is found for the free kick while the corner-kick success rate is found to be one in four.

Session VI

11:00
Shaheen Moosa: Sweet Briar College

Nietzsche's Critique of Christian Morality
Friedrich Nietzsche developed a devastating and influential critique of Christian morality in philosophical discourse. His argument analyzes Christian morality from its origins, and follows it to morality's end, nihilism and atheism. Nietzsche's primary purpose in his critique is to conduct a revaluation of modern day moral values, in order to make possible a more healthy and life-affirming morality. The aim of this paper is to give an overview of Nietzsche's critique of Christian morality, and develop a better understanding of Nietzsche's philosophical work.

11:15
Evin Stovall: Virginia Wesleyan College

Thomas More: A Prosecutor of Heretics, or a Heretic Himself?
My interest in Thomas More deals with his role as a Protestant polemic and his reversal in life to a conservative heretic after Henry's break with the Catholic Church. He fought ardently against Reformation thinkers including Luther, William Tyndale, and Thomas Bilney. I used his Responsio ad Lutherum, Dialogue Concerning Heresies, and Confutation of William Tyndale's Answer to examine More's actions in attacking those he deemed heretical. After that I went to the writing More published after his fall from power to look for a softening of his beliefs. I used his Apology of Thomas More and Dialogue of Comfort. At his end More remained steadfast in his faith. Only through examining More in both realms can his life and actions be understood.

11:30
Angela Grove: Randolph-Macon Woman's College

A 'Natural' Inquiry into God
"A 'Natural' Inquiry into God" is an epistemological look at the traditional Judea-Christian God: one who is omniscient, benevolent, omnipotent, eternal, unique, just, active, and the creator of all. This is important to look at because so much of our culture and way of life stems from the belief in God, his rules, right and wrong, and how we should act. A disproof of him could have serious repercussions on society, in both good and bad ways. This is an open-minded inquiry just searching for the truth by looking closely at the terms used today to define God.

11:45
Rachel Reynolds: Sweet Briar College

Thomas Hardy's Philosophy of Change in *Tess of the D'urbervilles* and *Jude the Obscure*
In my paper, I explore Thomas Hardy's last two major novels, Tess of the D'Urbervilles, and Jude the Obscure, in the context of Charles Darwin's theories. Darwin's discoveries and observations, and the ensuing challenges they posed to Victorian understandings of man and his place in nature, play an integral role in the imagery and ideas that Hardy gravitated towards in his late fiction. This paper links the randomness of natural selection, as well as Darwin's later theories about man's animal nature, with Hardy's nihilism, which was deeply pervasive in his final works.

12:00
Summer Henderson: Randolph-Macon Woman's College

Anxiety as the Path to Authenticity
Approximately a hundred years before German philosopher Martin Heidegger's major work on existentialism, Being and Time, Danish philosopher, Søren Kierkegaard thoroughly explored the ability of anxiety to lead the individual to authenticity and a true knowledge of freedom. This paper seeks to fully explore and compare these two philosophers' proposal of anxiety's capacity to educate one towards reflection and the knowledge of "being-in-a-world" as well as the ways in which their idea of the role of anxiety differs. I will also investigate the prescriptive connotations of the language that both Kierkegaard and Heidegger use to describe the public world, such as "levelling" and "idle talk", and in describing the path to authenticity, including "throwness" and "freedom's possibility".

Session VII

11:00
Patrick Elliott: Elon University

North Carolina's Incorporation of the Public as a Means of Preventing Terrorist Attacks
As the United States government continues the complex task of protecting the homeland from terrorist attack, it must continually examine available resources, methods of operation, and means of prevention. This study examines the conditions under which the government of North Carolina attempts to incorporate the public into preventing terrorist attacks within its three largest metropolitan areas: Raleigh/Durham, Charlotte, and Greensboro. By investigating the current measures taken by the different levels of the government, interviewing the officials responsible for matters of homeland security, and comprehending the intricate nature of awareness campaigns, this study will assess the practice and possible alternatives for North Carolina's involvement of the public in terrorism prevention.

11:15
Sabrina Carlson: Christopher Newport University

Negative Campaigning in Presidential Elections: An Examination of Television Commercials, 1952-2004
While negative campaigning has been a part of American politics since the beginning of the country, solicitous scholars and pundits alike have argued recently that negative campaigning is in the rise. This study looks in particular at negative campaigning in presidential elections and examines whether or not it has increased over time. Political commercials of the Republican and Democratic candidates from 1952-2004 are analyzed and classified into one of three categories: positive, negative, or contrasting (Jamieson 2000). A data set is included with information relating to whether or not the election included an incumbent, happened during a time of war or other international crisis, whether one of the candidates was embroiled in a scandal or not, and a measure of the strength of the economy.

11:30
J. Sloan Kuykendall: James Madison University

The 1919 Chicago "Black Sox": A Scandal Revealed
The game of baseball has always been viewed as America's pastime; a pure, clean, and honest game in which many players have become heroes and legends for their efforts and actions on the diamond. It is a game that, throughout its history, is generally not known for large scandals. However, baseball was the backdrop of one of the most infamous sport scandals of all time, the 1919 Chicago "Black Sox" scandal. This study will take an in-depth look at the scandal, the players and gamblers involved, the setting in which the scandal took place, and the motivations of the players who agreed to throw the 1919 World Series.

11:45
Matthew Small: James Madison University

Alexander Hamilton and the Deterioration of Franco-American Relations, 1792-1800
While Alexander Hamilton is primarily remembered for his economic contributions to the early United States, his politics also played a key role in the development of the early republic. Hamilton's influence on foreign policy during the 1790s on matters such as the Neutrality Proclamation, Jay's Treaty, and Washington's Farewell Address indirectly led to a worsening of American diplomatic relations with France. Hamilton's pro-British policy during this era led the United States and France to an undeclared naval conflict in 1798 known as the Quasi-War. This paper analyzes Hamilton's role in American foreign policy during the 1790s and the effects his policy had concerning Franco-American relations.

Session VIII

11:00
Lena Betts and Melissa Morris: Christopher Newport University
Co-authors: Jennifer Christman, Cecilia Mallory, Nicole Guajardo

Parents' and Children's Mental State References as Predictors of Children's Social-Cognitive Development
Around 4 years of age, children come to understand that they and others have mental states and that those mental states relate to behavior. Such understanding is referred to as theory of mind. Previous research has demonstrated

the importance of family discourse for early social-cognitive development. The purpose of the present study was to explore the relationship between children's usage of mental terms during a play interaction with their parent and their theory of mind and emotion understanding. Forty-two 3- to 5-year-old children and one of their parents participated in the present study. Findings indicated specific types of mental term usage were related to childrens' theory of mind and emotion understanding. Implications of these findings will be discussed.

11:15
Adlyn Perez: Sweet Briar College
Co-author: Laura Gandy

Reinforcing Value of the Nest in the Ring Neck Dove
The ring neck dove (Streptopelia risoria) is an avian species which forms a semi-permanent bond with its mate. This bond lasts the duration of a breeding cycle, during which both male and female incubate the eggs and care for the chicks once they hatch. Previous experiments examined the mechanisms which may regulate the formation and maintenance of this bond. Evidence found suggests that the nest is inherently reinforcing for the female. However, these results were not replicated in the males. The purpose of this study is to determine which stimuli are reinforcing to the male in incubation. This experiment will use conditioning procedures to examine the reinforcement value of the nest versus the reinforcing qualities of the female.

11:30
Laura Hale: Radford University

After-Death Communications
My paper examines the religious experience of After-Death Communication (ADC). First I explain exactly what an ADC is and what makes it different from other religious responses to death. I address the topics of what triggers an ADC and whether or not they provide for a soothing relief to grief and enable people to deal positively with the death of a loved one. I look at the popularity and frequency of ADC in recent years and the notion that therapists are starting to endorse ADC as a means to healing after the death of a family member or friend. Throughout the paper I give a variety of different examples from various cultures, historical periods, and religions.

11:45
Jennifer Christman: Christopher Newport University

Factors Affecting the Probability of Smoking Cessation
The proposed presentation is based on a literature review of cigarette smoking cessation. The purpose of the literature review is to investigate the possible links between certain biological, demographic, health, environmental, personality, mental, and smoking history factors and an individual's ability to quit smoking. The review also covers topics such as models of change, motives for smoking initiation and continuance, and relapse prevention. The presentation will identify factors that increase one's ability to quit smoking and to remain nicotine-free as well as which decrease one's ability to quit. Risks for relapse also will be discussed.

Session IX

2:00
Kevin S. Elliker: James Madison University

A Decision Deferred: Unionists in the Virginia State Convention of 1861
In the winter of 1860-1861, slavery, sectionalism and states' rights weighed heavily on American minds from Maine to Mississippi. In the South, debates took place in the secession conventions and each state decided their fate as they joined the fledgling Confederacy. Among the last to join, Virginia featured a charged debate with advocates on every side of the issue. Constitutional Unionists, an overlooked party of this peculiar debate, held considerable influence in the Virginia Convention as late as April 1861. However, the federal government's refusal to find a compromise sought by the Unionists and the prospect of raising arms against Virginia's southern brethren drove the Virginia Convention's decision to secede on April 17, 1861.

2:15
Thomas Casey: Virginia Polytechnic Institute and State University

Vital Interests: Slavery and Ratification In Virginia
Virginia's ratification convention provided a forum for several of the nation's prominent political figures to debate issues of both national and local importance. While not the sole topic of debate, the issue of slavery weighed heavily on the minds of the delegates in Richmond. Many leading Virginia statesmen realized slavery's inherent evils, yet all understood Virginia's economic dependence on agriculture. To them it necessitated the perpetuation of slave labor. This paper explores the voting behavior of delegates to the Virginia ratification convention of 1788 relative to the geographic distribution of slaves throughout the state and advances the thesis that the division among the delegates lay between those who feared abolition under the proposed Constitution and those who believed slavery would be protected.

2:30
Lara Fitzgerald: James Madison University

Remember the Titans, but Don't Forget the Big Picture: School Desegregation in Alexandria, Virginia, 1950-1980
T.C. Williams High School in Alexandria, Virginia is legendary for its football team and the conflicts of desegregation in the community in the 1960's. The story follows the racial integration of T.C. Williams' football team and the students' struggle to deal with racial conflict on, as well as off, the football field. However, while it provides an entertaining story of overcoming racism, the T.C. Williams story is a simplified version of a much more complicated issue even within a specified community. Segregation in Alexandria is multi-dimensional. Rather than a simple fight of racism versus tolerance, segregation also involved conflicts between federal and state government, school advocates and politicians, silence and direct action, and underlying prejudice hidden by a superficial open-mindedness.

2:45
William Michael Yarborough: James Madison University

The Army Behind the Army - U.S. Logistics and the Services of Supply in the First World War
During the First World War, The American Expeditionary Forces (AEF) had to provide logistical support for the two million soldiers and equipment in Europe by November 11, 1918. Every loaf of bread consumed, every uniform worn, and every bullet fired was shipped across 3000 miles of submarine infested ocean or purchased or manufactured locally. To relieve himself of these problems, General of the Armies, John J. Pershing, established a formal staff of logisticians, who on March 13, 1918 were organized into the Services of Supply (SOS). The SOS was comprised mostly of men who in civilian life had been businessmen, rail road men, and mechanics. They brought a set of skills learned through their experiences on the factory floors and in the corporate headquarters of America essential to the proper functioning of the SOS.

3:00
John A. Terminato: Virginia Military Institute

Marshall, MaArthur, and Truman: The Conflicts of Korea
Developed using primary documents at the George C. Marshall Foundation, this paper investigated the role and extent of General George Marshall's influence, as Secretary of Defense, on the relief of General Douglas MacArthur of all commands, a decision ultimately made by President Harry S. Truman. As is well-known, this political-military decision was most controversial. However, would President Truman have received the same amount of criticism if he had had the public support of his Secretary of Defense? By looking into the MacArthur dismissal from General Marshall's point of view, there are unseen details that Americans never knew about the decision, due to the fact that General Marshall's time as secretary—September 1950 until September 1951—is rarely researched. I propose to present my findings into this very question.

Session X

2:00
Nicole Elizabeth Justice: Christopher Newport University

The Malleus Maleficarum's Dissemination of Misogyny throughout European Society
"What else is a woman but a foe to friendship, an inescapable punishment, a necessary evil, a natural temptation, a desirable calamity, a domestic danger…an evil of nature, painted with fair colors!" This quote from Jacob Sprenger and Heinrich Kramer's, The Malleus Maleficarum, demonstrates the level of misogyny women faced during early modern Europe. Armed with a papal bull from Pope Innocent VIII, The Malleus Maleficarum not only demonstrates

the societal obsession with witchcraft during the late Middle Ages but also how it was a very influential vehicle for the solidification of misogyny in European society, which ultimately shaped views that Europeans had about women in their society from then on.

2:15
Natalie Pye: Sweet Briar College

Defining Delusion: Conceptions of Madness in the Classical World
Of all the misused words in the English language, the word “mad” may top the list. Used for centuries and across cultures as a modifier of actions and people, this word has no consistent definition; is a madman mentally ill or is he a visionary who sees reality from a different perspective? In the varied nature of the term ‘madness’ is the constant factor anger, illness, or ignorant misidentification of something not understood? Few ‘madmen’ stand out more than the early Julio-Claudian emperors and the characters surrounding their spectacular reigns. In examining the context of these emperors and their actions, including the unusually powerful and ambitious women of the time, through primary and secondary sources, the motivations for using the term, if not its exact definition, can be determined.

2:30
Taylor Anderson: Randolph-Macon College

Down the Rabbit Hole: The Two Worlds of Haruki Murakami
Like Alice in Lewis Carroll’s Alice’s Adventures in Wonderland, characters in the works of contemporary Japanese author Haruki Murakami live in a seemingly ordinary world until they fall down a surreal “rabbit hole.” Instead of a white rabbit leading them there, however, Murakami’s protagonists are led by prophetic women, giant frogs, and strange stones. Since his 1981 novel, A Wild Sheep Chase, Murakami’s protagonists have delved progressively deeper into their subconscious to find answers to their true selves, as well as to those around them. Using five works of his works I demonstrate how Murakami has increasingly used the metaphor of the journey to show his importance of human connections in contemporary Japanese society.

2:45
Joseph Beatty: James Madison University

Bilali: African Muslim Patriarch of Sapelo Island, Georgia
Bilali, an enslaved African, arrived on Sapelo Island, Georgia in 1803, where he became the head overseer of Thomas Spalding’s agricultural operations. Bilali led a group of armed slaves to defend against British attack during the War of 1812, and later saved Sapelo from destruction during a major hurricane. Moreover, he produced an Arabic manuscript that describes, in his own words, the foundations of his Islamic faith. He remains an important figure in coastal Georgia; however, much of what is commonly known about him has been based on popular legend — a problem compounded by a paucity of primary sources. This essay begins an analysis of his origin in Africa, his life as a slave, the Islamic text he left behind, and his portrayal in literature.

3:00
Erin Rogers: Sweet Briar College

France's Jehanne: The 15th-Century Heroine in Truth And Fiction
On May 30, 1431, the nineteen year old heroine known as Jeanne la Pucelle was burned at the stake for heresy in France, the country for which she would thereafter become a patron saint. Throughout the nearly six centuries since her death, her life has been the source of continual inspiration, as well as criticism, for countless scholars, artists, and passionate individuals endeavoring to offer their research and perspectives. With an interest to further understand and express another interpretation, this work, begun in 2005 as a journal, has been developed in recent months with greater detail taken in understanding the relationship between author and character in biographical fiction and the harmonization of historical understandings with imaginative and personal direction. The result is a continuing work of fiction.

Poster Session

1.
Kara Segna: Christopher Newport University

Penicillium Marneffei: Fungal Pathogen
The fungal pathogen Penicillium marneffei is a significant opportunistic infection in Southeast Asia among immuno-compromised individuals. Although it is related to other Penicillium species, P. marneffei shows dimorphism unique to its genus. At 25ºC, P. marneffei grows as a monomorphic mould, exhibiting the characteristics of other members of its genus. However at 37ºC, P. marneffei grows in a yeast-like form, known as arthroconidium. The secretome of an organism comprises all proteins secreted into the surrounding environment. The yeast form of P. marneffei secretes different proteins than that of the mould form. We analyzed the secretome by means of 1 and 2 DGE electrophoresis after pre-fraction by liquid isoelectric focusing. An identification and understanding of these form-specific proteins will further our understanding of the pathogenic processes in this and other fungi.

2.
Dustin Carroll: Roanoke College

Kinetic Study of Cathepsin S with Caspase and Granzyme B Inhibitors
In the last 35 years the process of apoptosis has become increasingly important. To date, most of the understanding of this process has come largely from a group of proteases known as the caspases. This study focuses on the lysosomal protease cathepsin S. Studies of the past have used certain caspase 3 and granzyme B specific inhibitors as a means of stopping apoptosis while ignoring the action of the cathepsins. This study has shown that these caspase 3 and granzyme B specific inhibitors do, in fact, seize the enzyme activity of cathepsin S. This strongly supports cathepsin S's role in apoptosis, for the aforementioned inhibitors could have acted on cathepsin S prior to or in conjunction with inhibition of their "specific" enzyme.

3.
David Walker: Longwood University
Co-author: Dr. Gary Lutz

Microarray Analysis of Saccharomyces Cerevisiae Cells under Environmental and Chemical Stress
Microarray analysis of Saccharamyces cerevisiae cells exposed to stresses such as ultraviolet radiation or a common plasticizer like dibutyl phthalate (DBP) have been performed. An illustration of the microarray techniques employed and evidence of changes in gene expression as a result of the stresses will be presented. In both types of experiments, the cells were harvested at the log phase, and mRNA was extracted. The mRNA was converted to cDNA and labeled with Cy3 and Cy5 dyes. Labeled cDNA was then hybridized onto yeast microarray chips. Data analysis was performed using the computer programs Magic Tool and Significance Analysis of Microarray (SAM). Preliminary analysis of this microarray data indicates repression and induction of certain specific genes.

4.
Chevon Dunnings: Christopher Newport University
Co-authors: Linnea Harper, Alicia G. Middleton, Amber L. Richards, Tiffany J. Schuldt, Kara G. Segna, Fallon A. Shippen, Lisa S. Webb, Harold J. Grau

Genetic Analysis of Isolated Stainer Populations: Preliminary Results
We investigated possible genetic polymorphisms among several geographically isolated populations of St. Andrew cotton stainer (Dysdercus andreae) on St. Thomas, U.S. Virgin Islands. Geographic isolation of these populations could lead to some degree of genetic distinction, and an earlier morphological analysis has shown that phenotypical differences exist between these populations. We have successfully extracted DNA from dried specimens of D. andreae and used polymerase chain reaction procedures to amplify segments of genes from both the mitochondrial and nuclear genomes. We utilized restriction endonuclease digestion to confirm the identity of the amplified sequences. We will use these procedures, along with DNA sequencing of the amplified segments, to analyze the remainder of the isolated populations for genetic polymorphisms.

5.
William A. Lancaster: Roanoke College
Co-author: Vernon R. Miller

Diel Variations in Mason Creek, Roanoke County, Va
The variations in concentrations of 15 analytes over a 24 hour period were detemined for a site on Mason Creek in Roanoke County, VA. Many analytes, namely alkalinity, temperature, pH, dissolved oxygen, nitrate, and manganese showed the expected diel variation. Other analytes, namely conductivity, sodium, and potassium showed no variation.

Several analytes, consisting of lead, iron, calcium, and magnesium were inconclusive. Two analytes, nitrate and phosphate were too close to the detection limit for any conclusions to be drawn. The effect of a small rain event in the middle of the afternoon showed up obviously in the readings for conductivity, alkalinity, sodium, potassium, and inconclusively in others.

6.
Danielle Strickland: Christopher Newport University
Co-authors: Danielle Strickland, Amanda Ross, Mariyana Tasheva, Tarek Abdel-Fattah

Modification of Low-Cost Adsorbents for Perchlorate Removal from Aqueous Media
Perchlorate is a health concern because when ingested it can block the uptake of iodine in the thyroid gland, affecting the production of thyroid hormones and possibly causing mental retardation in fetuses and infants. The objective of this study is to examine the adsorption capabilities of low-cost adsorbents such as activated carbon (Calgon Filtrasorb 400), two naturally occurring zeolites (clinoptilolite and chabazite) and synthetic zeolites (13X and 5A) for perchlorate removal from aqueous media. The adsorbents improved sorption capacities by treating them with 0.1 M solutions of CaCl2 or FeSO4. Batch adsorption studies were conducted to evaluate the adsorbent ability to remove perchlorate from water. In a batch sorption experiment, approximately 83% of the 50 ppm perchlotate solution was removed by using the modified adsorbents.

7.
Kathleen M. Wilson: Sweet Briar College
Co-author: Dr. Joseph Ortiz

Measuring the Particulate Content in Lake Erie Using a Malvern Mastersizer 2000 and A Labspecpro Fr
To monitor the Great Lakes with Landsat imaging, various analytical approaches can be used to help determine visual interference in the color imaging of the Western basin of Lake Erie. Anticipated causes for this visual flaw are zooplankton, suspended sediments and chlorophyll A. Water samples were collected from a research cruise vessel and analyzed using standard procedures for a Malvern Mastersizer 2000 and a LabSpecPro FR. The Malvern instrumentation determines the particle size distribution and volume concentration, while the LabSpecPro FR analyzes the chlorophyll A content through a GF/F Millipore filtration system. Statistical analyses were performed on the data collected from both techniques and compared to data collected onboard the research vessel. A correlation was determined from the FR data and the research vessel light spectrum data.

8.
Mariyana Tasheva: Christopher Newport University
Co-authors: Danielle Strickland, Amanda Ross, Tarek Abdel-Fattah

Removal of 2,4-Dichlorophenol from Aqueous Solutions Using Organo-Silicate Materials
Dichlorophenols (DCP) are aromatic compounds used as antiseptics, herbicides, wood preservatives, and in the paper and pulp industry. The Environmental Protection Agency (EPA) has placed 2,4-dichlorophenol (2,4-DCP) on the drinking water contaminant candidate list with a proposed safe limit of 3 mg L-1. The objective of this study involves the use of synthesized adsorbents for the removal of 2,4-dichlorophenol (DCP) from an aqueous media. The materials synthesized for this study were organo-silicate materials (OCS). The synthesis of these materials form hexagonal mesoporous lattice structures with organic components on the lattice structure giving them their hydrophobic and organophilic properties. These adsorbents are studied to determine their ability to remove DCP from an aqueous media through batch adsorption studies. All OCS materials remove more than 90-percent of the 2,4-DCP after 72 hours.

9.
Anna L. Kostric: Roanoke College
Co-author: Vernon R. Miller

Borane Exchange Reaction of 1,4-Dimethylpiperazine Bisborane with 1,4-Dimethylpiperazine
Previous researchers at Roanoke College have looked at the borane (BH3) exchange reaction of a diamine bisborane (a diamine with a borane on each of the two amine groups) with the free diamine to give a product in which the diamine has a borane on only one of the amine groups. In these experiments the diamine has been 1,4-diazabicyclo[2.2.2]octane (DABCO) or N,N,N',N'-tetramethylethylenediamine (TMED). This research has completed this series of diamines by examining the reaction of 1,4-dimethylpiperazine (DMP) with its bisborane. The equilibrium

constants and rate constants were examined in deuterated chloroform and acetone. While the interpretation of the data with DABCO or TMED as the diamine was straight forward, the DMP data has presented more challenges.

10.
Erica Kennedy: Sweet Briar College

Co2 Reduction Chemistry
The electrochemical reduction of CO2 by transition metal catalysts has become an area of great interest. The reduction of CO2 would ultimately form carbon- carbon bonds, thus mimicking photosynthesis. In nature, photosynthesis occurs when chlorophyll absorbs a photon and initiates reduction of CO2. Since CO2 is thermodynamically stable and chemically inert, the activation of CO2 is difficult and synthetically utilizing CO2 efficiently has been difficult. Having characterized both the hydrated and anhydrous forms of our catalyst, [Pt (dpk)Cl4], some preliminary CO2 reduction data and electrochemistry data confirms that possible development of a system in which two CO2 molecules are reduced simultaneously ultimately forming carbon-carbon bonds. We want to explore the general applicability of our catalyst to other small molecules such as CO and H2.

11.
Michael Joyce: Longwood University

Synthesis of Diphenylketones as Probes for Directed Metallation Experiments
Enolates are important intermediates used in organic synthesis. Normally, deprotonation reactions in ketones occur only at the alpha positions to form enolates. The synthesis of a series of diphenyl ketones designed to investigate the directing ability of an enolate ion towards the removal of a second proton that is normally not considered to be acidic is being reported. Deuterium isotope exchange reactions were used to clearly distinguish between the benzylic positions and the alpha positions and these results will also be presented.

12.
Jason M. Wolfe: Roanoke College
Co-author: Vernon R. Miller

Equilibrium Constant Of Bromothymol Blue
To develop a Physical Chemistry experiment showing the interaction of ionic strength and activities on an equilibrium constant, the acid dissociation constant of bromothymol blue was studied as a function of ionic strength. Ionic strength was varied from 0.0003 to 1.0003 M, concentrations of hydrogen ions were determined by using a pH electrode, and concentrations of the acid and base forms of bromothymol blue were determined by visible spectroscopy. When concentrations were converted to activities using the Debye-Huckel extended equation, the value of pKa was found to be 7.281. When activities were not used, pKa varied from 7.35 to 6.81. An interesting sidelight is that the actual pH electrode used was very important in getting valid numbers.

13.
Kimberly Berndsen: Roanoke College

Analysis of A Helicase-Dependent Isothermal DNA Replication Process for Use with the Tho1 Short Tandem Repeat
Helicase-dependent DNA amplification is a new technique for DNA replication developed by Vincent et al. which mimics in vivo DNA replication and can be carried out at constant temperature. The process unwinds DNA using an enzyme called a helicase. The helicase works successfully under certain conditions; however, its application to replicating human genomic DNA is limited at this time. This project describes attempts to apply helicase-dependent replication to the THO1 locus found on chromosome 11.

14.
Mithilesh Adhikari: Hampden-Sydney College
Co-author: H. J. Sipe, Jr., Department of Chemistry, Hampden-Sydney College

Electron Spin Resonance Study of Phenoxyl Free Radicals of Bisacodyl Analogues
Bisacodyl, the active ingredient used in over-the-counter laxatives resembles phenolphthalein in chemical structure. Use of phenolphthalein in such laxatives was discontinued because of the likelihood that it was carcinogenic, perhaps

from oxidative stress by metabolic activation of phenolphthalein to phenoxyl radicals. We expected the hydrolyzed product of bisacodyl, desacetylbisacodyl [DABC], would be oxidized to unstable phenoxyl radicals as was phenolphthalein. We report the synthesis of four desacetylbisacodyl analogues designed to have more stable phenoxyl radicals by virtue of having bulky substituents ortho- to the phenolic site. We report successful steady-state ESR observation of phenoxyl radicals produced by either chemical or biochemical oxidation of three of the four DABC analogues. The ESR spectral assignments are consistent with previously reported results for phenolphthalein and related phenoxyl radicals.

15.
Ben Lawler: Roanoke College

Diels-Alder Chemistry of A Highly Fluorinated Cyclopentadienone Derivative
The oxidation reaction of 1,2,4-perfluorophenylcyclopentadiene with N,N-dimethyl-4-nitrosoaniline (DMNA) in anhydrous THF and subsequent acid hydrolysis provided a crude mixture of products that contained the cyclopentadienone derivative. This derivative was heated with excess phenylacetylene and an inverse-electron-demand Diels-Alder reaction was attempted. Product mixtures were separated via column chromatography with a 10% dichloromethane/90% hexane solution. Products were analyzed with TLC, 1H NMR, and 19F NMR. Although not conclusive, the results point to production of the desired cycloadducts.

16.
Alissa A. Gadpaille and Beth A. Tucker: Roanoke College

Initial Experiments Using Surface Plasmon Resonance and Raman Spectroscopy
The purpose of these experiments was to use Surface Plasmon Resonance (SPR) to monitor substrate deposition on a gold film. SPR is a phenomenon that occurs when light photons are converted to plasmons at a gold surface, and it can be used to monitor deposition of a substrate on the other side of the gold. In this research, SPR instrumentation was developed in order to monitor the deposition of a self-assembled monolayer of 11-mercaptoundecanoicacid. In future research, this monolayer will serve as a template for calcium carbonate growth, and SPR will be used to monitor the growth and degradation of this calcium carbonate layer. In the future, Raman spectroscopy will be used to identify the polymorph(s) of calcium carbonate grown.

17.
Marcella Torres-Johnson: Virginia Commonwealth University

AFM Studies of Oxygen Etching of Silicon Surfaces
This study uses atomic force microscopy to examine the effects of oxygen etching of silicon surfaces. These interactions can change the surface morphology, affecting device performance. Silicon with various surface orientations at sample temperatures ranging from 700°C to 850°C was exposed to oxygen for 2 to 50 minutes at a pressure of 3.3 x 10^-7 Torr. The morphology resulting from etching is directly affected by surface orientation. The Si(001), Si(111), and Si(113) orientations are stable against etching and form flat terraces with islands resulting from oxygen etching around nucleation sites. Si(5 5 12) and Si(112) are unstable and form sawtooth facets of other nearby orientations. By changing the temperature and exposure time, a variety of surface morphologies can be formed.

18.
Michael L. Antolini: Hampden-Sydney College
Co-author: H. J. Sipe, Jr., Department of Chemistry, Hampden-Sydney College

Fast-Flow Electron Spin Resonance Spectroscopic Studies of Phenolphthalein Phenoxyl Radicals
Phenolphthalein, a bis-phenol, was formerly widely used in over-the-counter laxative products. Biochemical peroxidases readily catalyze formation of unstable phenoxyl radicals of phenolphthalein. These radicals produce oxidative stress by reacting with endogenous reductants, and this stress may possibly contribute to carcinogenicity of phenolphthalein. Phenolphthalein phenoxyl radicals reported previously required expensive amounts of horseradish peroxidase [HRP] for their biochemical generation in a fast-flow system. We report here successful observation of those radicals using an inexpensive biochemical oxidizing system, hemoglobin/H2O2. Using the chemical oxidation system Ce(IV)/H2SO4, we also report generation of higher concentrations of phenolphthalein phenoxyl radicals with correspondingly higher signal-to-noise ratio and better resolved ESR spectra.

19.
Karen A. Chachula: Washington & Lee University
Co-author: Joel P. Kuehner

Advancement of the Small Aperture Beam Technique for Density Measurements
Our project focuses on the use of a laser to measure density variations of a flowfield. In the past, efforts have utilized a variety of laser diagnostic techniques, but as of yet there has been little work that has been able to overcome the noise of the measurement system and precisely asses the flow-induced density oscillations. A most promising method is the small aperture beam technique (SABT). This technique relies on the fact that changes in density in a flowfield cause the laser beam to be steered as it passes through. The goal of this project is to modify SABT to measure beam motion and infer density variation. This will lay the groundwork necessary to simultaneously measure the motion and variation, and explore their relationship.

20.
Kim Wadelton: Sweet Briar College and University of Florida through the National High Magnetic Field Laboratory REU and The NSF
Co-authors: Marianna Worczak, James Davis, Mark W. Meisel

Effects of High Magnetic Fields on Transcription Reactions: The Magnetic Anisotropy of T7 RNA Polymerase
The diamagnetic properties of the T7 RNA polymerase have been investigated to test the hypothesis that strong magnetic fields generate subtle perturbations of the polymerase due to the structural diamagnetic anisotropy of the molecule. These possible effects may be the cause of a biochemical stress response previously detected in plants. The maximum energy arising from the protein's orientation in a strong magnetic field was estimated. At 9 Tesla, thismagnetic energy is approximately 10-100 ppm of the ambient thermal energy. A one-dimensional model was proposed of the deformation of the thumb alpha helix of the polymerase. Distortion forces estimated were ~4 orders of magnitude smaller than those forces required to stop transcription completely.

21.
Christian H. Brown: Virginia Military Institute

Optical Tweezers
Optical tweezers is a relatively new method of using light as a tool to manipulate the position and orientation of small objects ranging in size from 100 micrometers to as small as a single atom. A laser beam is refracted through a series of converging and diverging lenses into a microscope and finally on to a glass slide containing the specimen. This creates gradient force traps on the specimen allowing it to be manipulated. Optical tweezers are used in general to manipulate dielectrics, cells, viruses, and even DNA. The manipulation of these objects has far reaching implications in many applications outside the field of physics. In our setup we use a 632.8 nanometer wavelength He-Ne laser beam to manipulate polystyrene spheres three micrometers in diameter.

22.
Darren Wellner and Chris Petree: Virginia Military Institute

Mechanical Fish Project
This discussion addresses the fabrication and testing of a mechanical fish. This fish is driven by a sinusoidal motion of the tail and is tested at different amplitudes and frequencies. The fish is neutrally buoyant and is driven by a battery powered electrical servo motor. The position of the fish as a function of time is measured in order to compute velocity as a function of time.

23.
Kristina Potter: Christopher Newport University
Co-authors: Christine Hilderbrand, Eric Lynn, Andrew Velkey

The Magic Number 4 Plus or Minus 1: Examining Spatial Memory in Betta Splendens
Previous research in our laboratory has revealed that Siamese fighting fish (Betta splendens) have some capacity for spatial memory, but a large number of foraging errors at the end of a bout suggests that the capacity of their spatial memory is not large. The current study consists of 2 experiments in order to assess the memory capacity of Betta. In experiment 1 and 8-arm radial maze, with 4 arms blocked off, allows the Betta to hunt for their daily food in order to determine the minimum memory capacity of the fish. The number of errors made while foraging for food decreased to

zero as the fish learned the maze. In experiment 2, additional arms of the maze will be unblocked, one at a time, until the fish have an above-chance error level, indicating the limit of the fish's spatial memory capacity.

24.
Herman Diggs: Christopher Newport University
Co-authors: Molly Matthews, Dr. Andrew Velkey

The Relation of Body Size To Dominance-Submission in Siamese Fighting Fish
The current study examines the relation of body size to the dominance-submission choice of Siamese Fighting Fish (Betta splendens). Subjects experience instrumental choice trials in a T-maze. During each trial, subjects choose between an aggressive choice (mirror presentation) and a neutral choice (no mirror presentation). Gill erection duration is also being measured to determine overall aggressive response. Larger fish are expected to show a preference for the aggressive choice while displaying aggressive behavior during mirror exposures, whereas smaller fish are expected show a preference for the neutral choice or display a more submissive posture during mirror presentations. Implications of these findings could suggest that larger animals show a preference for aggressive encounters and are prone to more aggressive responses than smaller animals.

25.
Heather Sutton: Christopher Newport University
Co-authors: Molly Mathews, Jessica Parker, Dr. Andrew Velkey, Dr. Tarek Abdel-Fattah

The Effects of 4-Nonylphenol on Aggression and Bubble-Nesting in Male Bettas
The current experiment examined the effects of 4-nonyphenol (4-NP, an estrogen agonist) on bubble nesting and aggressive behaviors in Siamese fighting fish (Betta splendens). 6 fish served as controls, 6 fish were exposed to 5.9 microliters/liter of 4-NP and 6 fish were exposed to 14 microliters/liter of 4-NP. Each group was observed for behavioral changes in aggression as well as disruptions in the size or quality of their bubble nests. Bubble nesting decreased with each level of 4-NP, and the initial findings indicate that sub-toxic levels of 4-NP could have detrimental effects on reproductively-relevant behaviors in Betta. More study is needed to determine if these findings are an indirect result of physiological stress of 4-NP exposure or the direct result of estrogen agonism by 4-NP.

26.
Carlina Muglia: Sweet Briar College

Does a Single Sex College Environment Reduce the Negative Effects of Stereotype Threat?
Stereotype Threat (ST) is the fear that one might perform according to the negative stereotypes associated with one's group. The present study was designed to determine if a single sex college environment reduces the negative effects of stereotype threat. Each participant's relative affiliation with the math or English domains was determined before they were administered a math test with directions that elicited ST. The results indicated that ST does not occur in a single sex college environment. Contrary to the results obtained in previous ST experiments, the Math-associated ST participants performed significantly better on the math test compared to the English-associated ST participants. These results suggest that women attending single sex colleges are less susceptible to the negative affects of ST.

27.
Elise K. Campbell: Christopher Newport University
Co-author: Ashley Hallheimer, Thomas D. Berry

Parental Influence on Undergraduate Hygiene Habits and Perceptions of Hygienic Risk
Thirty four undergraduate students (17 female and 17 male) filled out a health survey that related family dynamics and students' hygiene habits and perceptions of hygienic risk. Results indicated that parents do have a substantial influence on students' health habits as well as risk perceptions regarding getting sick.

28.
Jennifer Dick, Dawn Martin, and Renee Tanner: Sweet Briar College

Expressions of Anxiety through the Use of Nonverbal Behavior in Introverts and Extraverts
Previous research has demonstrated behavioral differences between the personality types of introversion and extraversion. Other experiments have shown that individuals express their level of anxiety through nonverbal

behavior. The present study was designed to determine whether introverts express more nonverbal behavior than extroverts in an uncomfortable situation. Participants were classified as either introverted or extraverted using Eysenck's Personality Questionnaire and then placed in one of two interview conditions. Some were asked anxiety-producing questions while others were asked non-anxiety-producing questions. Nonverbal behaviors, such as smile control and gaze shift, were measured in all of the participants. Results indicated that introverts in the anxiety-producing situation displayed the most of certain nonverbal behaviors. These findings suggest important differences in how introverts and extraverts respond nonverbally in anxious situations.

29.
Charis Lease-Trevathan: Sweet Briar College

Unusual Names and Their Effect on Personality Generalizations
This experiment investigated how different types of names are rated and how additional information affects name ratings. The types of names studied were common names, unusual spellings of common names and non-American names. Participants rated names on the traits of Success, Morality, Popularity, Warmth, Cheerfulness, and their interest in working with a person with that name. Non-American names were rated more positively on success and morality, but more negatively on popularity, cheerfulness and femininity. Common names were rated similarly to unusually spelled names, suggesting that unusually spelled names are more accepted than previous research suggested. Non-American names were rated differently from Unusually Spelled names, suggesting that different stereotypes are associated with different types of unusual names.

30.
Christina Shaheen Moosa: Sweet Briar College

Unification of "Metamorphoses"
The play "Metamorphoses", by Mary Zimmerman is an adaptation of Ovid's "Metamorphoses". The play uses the themes of love and change to articulate a better understanding of human nature. The play illustrates transformations that take place in ancient myths, by telling stories concerning life, death, and love. The themes, stories, and culture presented in the modern play and ancient text is analyzed in order to prepare for an upcoming student directed production of the play. This project includes careful script analysis, including historical research and the creation of a director's promptbook. Analysis of esthetic criticism is also used in order to better understand the art of theatre, and the director's relationship with the script, play, and audience. All of this preparation leads up to create a director's statement, as well as a body of work that will facilitate the direction and production of the actual play.

31.
Brandy Stinnette: Sweet Briar College

John Powell's Sonate Noble: The Impacts of Nationalism and Evolving Racism
John Powell (1882-1963) was a significant Virginian composer and white supremacist who also contributed to Virginian race relations. He began piano lessons first from his sister Elizabeth, and then studied with Frederick Charles Hahr. After graduating from UVA in 1901, Powell sailed to Europe to study in Vienna with Theodore Leschetizky. Through Powell's career we not only can trace the evolution of race relations in Virginia, but also in the development of American classical music. Ever since Antonin Dvorak's "Symphony from the New World" in 1893, the idea of American national composition struck worldwide. In the Twenties, Powell became outspokenly critical of the use of African American or Indian elements in American music. He turned instead to Appalachian Folk Music, which in his view was a better representation of mainstream America.

32.
Jessica Leigh Taylor: Sweet Briar College

The Effects of Absolute and Programmatic Music on Psychological States in College-Age Females
This study investigated the relationship between Programmatic and Absolute music and emotional elicitation in college-age females. Specifically, physiological measures of heart rate and blood pressure were utilized in combination with a self-reported measure of pleasure, arousal, and dominance to produce an overall measure of emotion. It was hypothesized that Programmatic music would elicit emotions corresponding to feelings of being dominated by the musical narrative of the story—which in turn would elicit stronger emotional states, and Absolute music would be less influential, and alternatively produce a means to interpret the music on an individual basis, with

less emotional impact than Programmatic music. Results indicate that participants, dependent on their experimental grouping, had greater emotional elicitation when listening to a specific variant of music.