African Persecution in World War II Era Germany: The Development of a Racially Intolerant State

When one examines World War II, a predominant theme is the Holocaust and the treatment of the Jewish people. However, the treatment of the Afro-Germans and French colonial soldiers is often overlooked. This paper examines the causal factors that contributed to the cultivation of a racially intolerant climate toward Africans during World War II. The evidence focuses on events and factors that occurred between the beginning of World War I and the 1936 Berlin Olympic Games. Presented in a three-point argument, the paper discusses the experiences of German military personnel with French colonial soldiers in World War I, the use of French colonial soldiers during the occupation of the Rhine, the performance of Jesse Owens at the 1936 Berlin Olympics, and how these factors affected the racial attitudes of Germans and the Nazi Party.

The Supreme Court and the Politics of Language: Some Lessons from Public Debates about Same Sex Marriage and Gun Regulations

The project attempts to address the much-debated question of whether the Supreme Court decisions influence American society and policy discussion. The researchers hypothesized that when the Supreme Court uses absolute language, declaring new rights, the discourse on the particular topic would shift to include the rights argument more often. This hypothesis was tested in two case studies: United States Supreme Court District of Columbia v. Heller (2008) decision regarding gun rights and the various state court's decisions on legalization of same-sex marriage. The results suggested that, in the case of same sex marriage, the rights talk gained in frequency after courts’ decisions and overshadowed other previously popular arguments, such as family values. In the gun regulations case, the frequency of the rights argument increased once the Supreme Court decided to hear the case but settled after the court's decision.

Don’t Ask, Don’t Tell and the Gay Rights Movement in America

“Don’t Ask, Don’t Tell” was a military policy practiced from December 21, 1993 to September 20, 2011. The policy, while it protected closeted bisexuals and homosexuals from discrimination from military personnel, sustained the military’s ban on all gay, lesbian, and bisexual people from serving and prohibited any service member from disclosing their sexual orientation in any way. “Don’t Ask, Don’t Tell” sparked controversy across the country, polarized the public, and ignited a series of protests. Also heated by the implementation of the policy were historians and scholars who analyzed its constitutionality and long-term effects on the social history of the United States. Despite its apparent flaws, the policy’s repeal will ultimately be remembered as a stepping stone in the Gay Rights Movement in America, as proof of how much power the movement has gained in recent years, and as a reflection of the changing views of American society.

Political Theory in Gentleman's Magazine and the Growth of the Public Sphere

The eighteenth century saw a transformation in English politics that encompassed both ideas and the political process. Gentleman's Magazine represented both aspects of this change through its political essays and its relatively broad readership. This paper examines the political content of Gentleman's Magazine in 1732 and the magazine's implications for public participation in government. While Gentleman's Magazine published essays on a variety of topics, its political essays demonstrate the effects of the Enlightenment in general and John Locke in particular on writers, as the essays have a distinct individualist bent towards a more restricted government. However, the increased public participation in political debates represented by the essays is more important than their content. The eighteenth century marked an expansion of political participation, and Gentleman's Magazine, with its relatively low price and wide circulation, allowed more of the English population to access and participate in politics.
John Dewey's Educational Response to Industrialism

The purpose of this research is to identify how and why 20th century American philosopher and educational pioneer, John Dewey, sought to use education as a means by which the hardships and pitfalls of industrialism could be overcome. The research explores how Dewey’s personal experiences in education led him to develop a passion for educational reform that has had far reaching effects, still today. The core of the research revolves around an experimental grade school which Dewey created and oversaw as the chairman of philosophy at the University of Chicago. This experimental school, dubbed The Laboratory School, is a reflection of how Dewey sought to implement and assess curriculum that would develop children into moral and democratic adults. Dewey’s basis for such a curriculum was the social changes of the late 19th century caused by industrialism which, in his opinion, left a deficiency in the production of moral citizens.

Session II  9:30 – 10:30

9:30 | Duc Dinh and Sithu Aung: Randolph College Department of Physics and Astronomy
Mobile Monitoring

The continuing development and refining of mobile technologies has the potential for extending the health care model beyond the current hospital clinic framework. Cellular telephones can be repurposed to collect behavioral data in a continuous, near real time, noninvasive, easily accepted, and inexpensive manner. Using a new generation cell phone (Samsung Galaxy S3), we have written code to acquire high temporal resolution data from multiple sensors in the phone and upload this continuously to cloud-based servers. This data allows us to reconstruct individual activity patterns (using information from phone accelerometer) and life space (using GPS and GSM). We have adapted a cloud computing based model to send information in near real time to server and database for storage, offline analysis and behavioral feedback to the phone. Future directions include development of algorithms and methods that can be used to detect clinically relevant behavioral patterns that trigger text or call based interventions.

9:45 | Sam Gelman: George Mason University Honors College
Tracking Body Segments in RGB-D Videos of Human Gait

Co-authors: Nalini Vishnoi, Zoran Duric, Naomi Lynn Gerber

A depth camera, like the Microsoft Kinect, can capture RGB-D videos of human gait. Algorithmic analysis of these videos allows us to track segmental movement (i.e. the movement of body segments) while a person is walking. However, existing software packages that perform this analysis are inaccurate and do not work for videos captured from the sagittal (side) plane. The objective of this experiment was to accurately track segmental movement in RGB-D videos of human gait captured from the sagittal plane. We developed an approach for analyzing RGB-D videos. This process involves background subtraction, segmentation of the body based on depth information and k-means clustering, and motion computation. We successfully segmented the body and tracked the movements of various body parts in several RGB-D videos of a person walking.

10:00 | Moriah Donaldson: Sweet Briar College Department of Engineering
Phantom Limb Pain: A Different Approach to Treating a Common Problem

Phantom Limb Pain is a disorder that affects approximately 70% of those who have had a brachial plexus avulsion or amputation, and it is characterized by sensations in that specific area. It is unclear what truly causes Phantom Limb Pain, though there are many theories. All studies for this disorder have yielded the conclusion that, while something may or may not be a cause or contributing factor to the severity of the disorder, further research must be done in order to truly understand the nature and cause of Phantom Limb Pain. The treatment that Dr. Pierce and I have been developing for the past year will use a myoelectric device to take data about the user’s intended movements, calculate necessary transformations and smaller, intermediate movements, and then show the movement in real time.

10:15 | Brian A. Ramsey: Lynchburg College Department of Physics
Modeling the 2013 Tour de France with Continuous Power and Drag Area Functions

Co-author: Dr. John Eric Goff

An inclined-plane model predicted each of the twenty-one stage-winning times in the 2013 Tour de France. The model predicted four stage-winning times to better that 1% difference when compared to the actual stage-winning times, eight stages to better than 3% difference, and twelve stages to better than 5% difference. A trend of slow
predicted times is noticeable.

Session III 9:30 – 10:45

9:30 | Raymond Hyser: University of Virginia Department of History
The Role of the Military in Early American History
This paper focuses on the debate about the role the military, namely the army, should play in the United States from the Revolutionary War to the Mexican American War. The paper pays specific attention to America’s idea of the “citizen soldier” and how Americans fixated on this ideal soldier who put down the plow to pick up the musket and defend his country. This view is drawn from America’s fear of a standing army. Throughout America’s early history, the fear of a standing army continually hampers America’s ability to wage effective warfare. The paper follows chronologically the debate of a standing army and its role, starting from the influences of the English Civil War to the professional army that marched on Mexico City.

9:45 | Matthew Hummill: James Madison University Department of History
A Drummer Boys’ Influences
Drummer boys in the Civil War, typically 10-14 years old, played an important role in the war effort. These young boys were at the mercy of several influential factors that persuaded them to enlist in the military. Children’s literature, newspapers and public opinion worked independently and jointly to encourage young boys to volunteer as drummer boys. Children’s literature in the form of magazines and textbooks provided moral standards for children before the war and intense patriotic sentiments during the war. Newspapers were able to bring the war right to its readers and the battlefield tales it told inspired many boys to become drummer boys. The inception of the war created a war fever amongst the public that quickly infected children with the desire to enlist. Boys of the Civil War era followed the advice of these factors and joined the war effort.

10:00 | Jane Lightfoot: James Madison University Department of History
The Bunion Derby: A Transcontinental Footrace
On May 26, 1928 fifty-five men stumbled into Madison Square Garden. It was the end of a 3,400 mile footrace from Los Angeles to New York and Andy Payne, an unlikely half Cherokee, “man in the shadows,” had just won this ultra marathon event. The 1920s was the “golden age of sport.” Dance marathons and Babe Ruth were the main topics of interest. The National Football League was in its infancy, and one man, C.C. Pyle, had just become “America’s first sports agent.” It was Pyle’s idea to hold this race and he had imagined an extravaganza, a caravan of vehicles filled with press, carnivals and side shows in every town, and a huge paycheck following it all. In actuality, the race failed because Pyle had not planned ahead for the realities of a cross-country expedition. Examining this race provides insight into the sport culture of the 1920s as well as a look into the development of ultrarunning, as opposed to pedestrianism, as a sport.

10:15 | Nicholas Lea: James Madison University Department of History
Mobility and American Art
America, in a most fundamental way, is a collection of travelers. The initial inhabitation of European colonists looking for political, religious, and economic freedom, and the African slaves they brought with them represented a unique and significant framework by which to found a country. And so, by virtue of America’s inherent quality of newness, and the subsequent archetypal American lifestyles this newness created whether based in freedom or enslavement, America began to forge artistic originality. One underlying facet of America’s aesthetic identity is the multifaceted idea of mobility and the associated technological artifacts that allowed for such mobility. This research focuses on the influence transportation technologies have had on American artistic expression, with specific attention paid to the “railroad blues” folk-music of the 19th century and the Beat and counterculture literary movements of the mid-20th century.

10:30 | Christopher C. Brewer: James Madison University Department of History
The Homestead Strike of 1892: The Inevitable Fall of Organized Labor in the Steel Industry
This paper examines one of the most violent labor disputes in American history, the Homestead Strike of 1892, in which the Carnegie Steel Company locked out the workers of the Homestead steel mill following an impasse of contract negotiation, resulting in a battle between the workers and 300 hired Pinkerton detectives on the shores of the Monongahela River. Analyzing the motivations of each side, the paper focuses on the factors that drove the dispute, specifically the workers and townsfolk, to such violent levels. Factors examined include uniting community values, conflicting ideologies on labor between workers and management, and the changing landscape of organized
labor's role in the steel industry.

Session IV  9:30 – 10:15
9:30 | Katlyn Fleming: Sweet Briar College Department of Chemistry
Synthesis of Phenanthroline Derivatives for Anticancer Studies
Platinum containing compounds have been found to be effective against cancer cells. However, not all compounds are equally effective. Some cancer cells can develop resistance to currently known drugs, and many drugs cause adverse side effects due to a lack in selectivity. This necessitates the continual research and development of new potential drug compounds. The results of an on-going study involving the synthesis and bioactivity testing of a novel phenanthroline platinum compound will be presented.

9:45 | Meron Demekel and Elizabeth Deley: Randolph College Department of Biology
Evaluation of Compost Conditions on Listeria innocua Survival and Growth
Listeria monocytogenes is a bacterial foodborne pathogen that is commonly associated with plant and dairy products. Humans infected with L. monocytogenes develop listeriosis, which poses a significant threat to pregnant women and the immunocompromised. Compost, which is often used to improve soil fertility and structure, may harbor Listeria. If Listeria-contaminated compost is applied to agricultural fields, low-growing fruit and vegetables may become adulterated. We seek to answer the following questions: 1) How do the intrinsic chemical and physical properties of compost affect Listeria survival and growth? 2) If lactic acid bacteria are inoculated into Listeria-contaminated compost, will they acidify the microenvironment sufficiently to inhibit Listeria? 3) If compost is inoculated with a bacterial species that secretes nisin, an anti-listerial protein, will it accumulate to concentrations that inhibit Listeria? This work can help agriculturalists reduce Listeria loads in compost and, theoretically, alleviate the threat of crop contamination.

10:00 | Kaitlyn Cartwright: Sweet Briar College Department of Chemistry
Synthesis of Novel Phenanthroline and 3(2H)-Furanone Ligands
Coloorectal Cancer is the third leading cause of cancer-related deaths in the U.S. The purpose of this research was to design and synthesize novel phenanthroline and 3(2H)-furanone ligands that will be able to form platinum complexes and ultimately be effective treatments for colorectal cancer. 5-(2-(p-carboxybenzylidene)-4-carbethoxy-5-methyl-3(2H)-furayl)-1,10-phenanthroline was successfully synthesized. In the future, the compound will be synthesized with platinum and its bioactivity will be explored.

Session V  11:00 – 12:00
11:00 | Megan Gerald: Ferrum College Department of Natural Sciences and Mathematics
The Benthic Macroinvertebrates that Play a Role in Leaf Decomposition
Co-author: Dr. Carolyn Thomas
Many factors determine the roles that organisms can play in decomposition of leaves. Benthic macroinvertebrates play an important role in the breakdown of leaves that fall or rift into the stream. By taking different quantities of and invasive plant Ailanthus altissima (tree of heaven) and a native plant Rhus glabra (smooth sumac), and placing them in litter bags in the stream in the fall of 2012, we determined the groups of macroinvertebrates that play a more dominant roles than others. By leaving the bags in the stream at an interval of three or six months, we allowed for the invertebrates to enter the bags and begin to participate in the breakdown of the leaves. After three or six months the bags were taken out of the stream and the bags were counted and identified. The populations of the different macroinvertebrates will be presented.

11:15 | Colleen Garrison: Christopher Newport University Department of Environmental Biology
Wetland Trees Survivorship and their Importance
Co-authors: Dr. Robert Atkinson and Mellony Seidel
The replacement of forested wetlands presents challenges related to tree establishment and created wetlands often exhibit low survival and growth rates. The purpose of this study is to determine which trees, and planting types are most successful. Seven tree species and three stocktypes were planted in Loudoun County, Virginia in 2009. Trees included Betula nigra, Liquidambar styraciflua, Platanus occidentalis, Quercus bicolor, Q. palustris, Q. phellos, and Salix nigra and planting types were tubelings, bare roots, and trees grown in 1-gallon pots (gallon). Survival and growth were recorded annually and, as of 2012, highest survival was exhibited by Q. bicolor gallon (92.1%), Q. palustris gallon (84.2%), and Q. phellos gallon (77.9%). Quercus species in gallon containers may be a good choice for projects in which stem count and tree height in early establishment years are priorities. Trees with low
survivorship in our study should be avoided in planting plans for similar sites.

**11:30 | Rebecca Dalley: Sweet Briar College Department of Biology**

**Evidence for Low Genetic Variation in Interrupted Fern and Implications for Clonal Growth**

We investigated the possibility of ancient genets in interrupted fern, through use of molecular techniques and measurements. RAPD-PCR was used with 39 different primers, in order to try and find variation in this species at three separate locations at Wintergreen Ski Resort in Virginia. Almost no variation was found, only one primer produced variation, and only in four of the one hundred and thirty samples run. This result allows us to hypothesis that this particular species of fern must have a very low rate of genetic variation. It also allows for the possibility that many of these samples could be genetically identical and very old.

**11:45 | Eric Cawi: George Mason University Honors College**

**Uncertainty Quantification for the Soil Carbon System using Monte Carlo and Generalized Polynomial Chaos Approaches**

In a peat deposit, the soil temperature and carbon content form an environmentally important system. As soil absorbs carbon the temperature increases, but, as the soil heats up, it releases carbon, leading to a stable equilibrium for a fixed atmospheric temperature. However, when soil is too warm or there is too much carbon, a catastrophic release in carbon is accompanied by a sharp fall in soil temperature. This research performs uncertainty quantification (UQ) on physical parameters in the above system to find thresholds for the above “compost bomb” instability. Two UQ methods, Monte Carlo and Generalized Polynomial Chaos (GPC), are used in the analysis, and GPC is found to be significantly faster while producing the same result. Determining the uncertainty is important because it allows scientists to identify and mitigate potentially unstable peat deposits.

**Session VI 11:00 – 12:00**

**11:00 | Nam Hoang: Randolph College Department of Mathematics**

**Sending Order Through Chaos**

We consider the Rule 30 cellular automaton which Wolfram classifies as chaotic. Highly ordered initial states quickly evolve into states with no apparent order in a classic display of increasing entropy. We hope to discover local configurations which are relatively stable when propagated through time regardless of the surrounding noise.

**11:15 | Alexander Lin, Ben Travers and Junru Chen: Virginia Military Institute Dept of Applied Mathematics**

**Data Mining and Analysis of Undergraduate Mathematics Curricula**

The Applied Mathematics department at the Virginia Military Institute offers a range of 100 level to 400 level math courses to the cadets. Regardless of declared major, all cadets must complete at least 6 credits of mathematical courses. Currently, the number of sections offered for each of the most common courses taken by cadets is determined by the relationship between: the number of sections offered the previous semester and the total number of cadets that are enrolled for the upcoming semester. Incorrect estimation for the number of sections is a common occurrence every year due to poor student performance in pre-requisite courses or other academic and disciplinary factors. In an attempt to improve the course scheduling process, this paper uses data mining techniques to assess available student course grades (and other cadet information) and proposes mathematical analyses of such data; analyses which consist of statistical and predictive modeling techniques.

**11:30 | Sydney Henson and Katherine Lesnak: Randolph College Department of Education**

**Science and Math Links: Research-Based Teaching Institute**

This research examined the influence of a science and mathematics professional development program, which targeted sixty-five local kindergarten-8th grade teachers. The teachers participated in a weeklong Institute which integrated content knowledge, pedagogical skills, and hands-on and inquiry based instructional methods. Self-reflection surveys were administered pre and post training. MANOVA results reported a significant increase in confidence for teachers who have participated multiple years (F(1,40) = 6.80, p < .013, η2 = .14. ). Participants were observed teaching a science or math lesson using the Reformed Teaching Observation Protocol (RTOP). RTOP scores calculated from five subscales were significantly higher by 20 points than the published national average of 48.5 for middle school teachers when they participated multiple years. These results directly show an increase of success within science and math classrooms through hands-on and inquiry-based learning techniques from our professional development program.
11:45 | Amy Kvien: Sweet Briar College Department of Economics  
Explaining Bank Branching Trends Around the Great Recession  
My research focuses on bank branching trends before, during, and after the Great Recession of 2007 to 2009. I use regression analysis to explain two different bank branching trends: the number of bank branches and the size of bank branches, as measured by the number of employees. All of my data is separated by year and Metropolitan Statistical Area, or a city and surrounding areas that make up a market. I include five explanatory variables in my regressions, including common variables as well as less common variables.

Session VII  11:00 – 12:15
11:00 | Jennifer Gray: Sweet Briar College Department of History  
Sparring with Stereotypes: Demystifying Women and Power in Antiquity  
Ridiculed and demonized their intelligence and political acumen ignored or misrepresented, female political figures have been disparaged throughout the ages. This paper explores accusations made against women who were perceived by their contemporaries to have occupied positions of political power in the ancient Mediterranean. Four women “Aspasia of Miletus,” “Olympias of Molossia,” “Cleopatra VII of Egypt” and “Livia of Rome” who lived over a roughly five hundred year period were examined, and the accusations against them analyzed and compared. A trend of stereotypical accusations was uncovered. Influenced by contemporary cultural prejudices, the ancient sources, criticized powerful women for actions, which would not have aroused condemnation had they been committed by men. Commentators nearly always ascribed personal, rather than political, motivations for these women’s actions. This is in stark contrast to actions of a similar nature undertaken by male rulers which were universally viewed as purely political.

11:15 | Alexandra Kolleda: James Madison University Department of History  
The Weaker Sex?: Women in Tudor and Stuart England  
Women in history are often ignored in favor of great men who played a more public role. This paper, on the other hand, chooses to look at women's power in society, both behind the scenes and publicly, by analyzing journals, wills, and letters. It appears as if all women exercised some degree of influence and power in Tudor and Stuart England, but they did so at different levels. Lower class women, while largely illiterate, had a much more public role in society out of necessity. These women, however, did not pose as much embarrassment to their husbands. On the other hand, upper class women published significant works and exercised influence over their husbands; however, they often had to couch their intellectualism in household affairs. If they choose to be too obvious in their influence, their deviance would reflect badly upon their husbands.

11:30 | Chelsea Henderson: James Madison University Department of History  
Elizabeth Tudor and Mary Stuart: Queens of Difference  
Mary Queen of Scots and Elizabeth I had a complicated relationship. Their childhoods, religions and personalities differed. Elizabeth was older than Mary and was born and raised in England as a Protestant. Mary was younger, born in Scotland and raised as a Catholic in the French court. She too was destined to rule a Protestant country. Although they were cousins, the three forces that shaped their lives resulted in constant tensions once they began their rules. The paper will examine these differences and show how each influenced them, their adult relationship, and their countries.

11:45 | Danielle Brookover: James Madison University Department of History  
Gibson Girl: The First Popular Culture Representation of the American Woman in Mainstream Society  
The Gibson Girl pen-and-ink images embodied the spirit and image of the American Women in the Progressive Era from 1895-1920. For the first time in American history, a fully marketed female image based on fashion and womanhood emerged in popular culture. The image of the Gibson Girl rose in popularity, because she represented the physical image and personality of the ideal American girl. She emerged in a period of shifting ideologies for both womanhood and the American youth. The Gibson Girl blended the two social movements of her era; she simultaneously allowed for increased individuality and freedom from Victorian standards in her youth while conforming to a typically patriarchal, marriage-based society in her adulthood. The phenomenon only consumed public interest for roughly fifteen years, but the impact of the Gibson Girl during her time period was unparalleled by any other social or cultural figure.

12:00 | Dolores Gallagher: Sweet Briar College Department of Classics, Philosophy, and Religion  
The Stages of Womanhood in Ancient Greece and their Effect on Healing
The Hippocratic Corpus is one of the definitive works in the history of medicine, most of which was written in the fifth and fourth century BC. I chose to focus on women in the Corpus, as the gynecological works make up one-third of it. Women were “valued above all for their reproductive capacities,” so physicians obviously needed to know how to treat them as women and also as girls, so they could develop their reproductive qualities. I selected the treatises The Nature of Women, Diseases of Young Girls, and Diseases of Women, and selected books from the Epidemics to examine how physicians would treat women with a wide variety of diseases. The authors would use different terms to refer to women, parthenoi, gyne, and kune, that reflected how they approached the case and treated the patient.

Session VIII  11:00 – 12:15
11:00 | Joe Wilson: James Madison University Department of History
The Battle of Poitiers 732 CE: Interpretations and Remembrance
The Battle of Poitiers in 732 CE has been widely remembered as a decisive engagement in the history of Western Civilization. Why is this so? Is this view still relevant? The primary sources, historiography, and art spawned by this event are examined in seeking answers.

11:30 | Dominic Rutan: James Madison University Department of History
French Capitulation and British Involvement in the Mediterranean
This paper analyzes the capitulation of France during the Second World War, British perceptions of the ensuing Franco-Axis armistices, and British motives for being militarily active in the Mediterranean theater. The premises of the armistices included two particular stipulations that sparked British interest: French colonial possessions and the French fleet, which were to be untouched by the Axis powers. In analyzing primary sources that reflected the contemporary opinions and views of members of the British parliament and general population, this paper theorizes that the collaboration of French officials with the German and Italian governments led to a British realization that the Vichy regime was merely an extension of the Axis powers and under its direct control. As a result, British military participation in the Mediterranean theater was required to ensure that their former ally wouldn’t assist the Axis powers in defeating the British Empire.

11:45 | Taren Vail: James Madison University Department of History
Perceptions of the Western World on the Bulgarian "April Uprising" of 1876
This paper discusses the treatment of the Bulgarians by the Ottomans in the middle to late 19th century. This treatment led the Bulgarians to unify in the Bulgarian Revolutionary Central Committee to plan and fight in a revolution that began with the April Uprising of 1876. The paper attempts to argue that the perceptions of the Uprising by the Western World, mostly Britain and America, were strongly influenced by where their sources were coming from and the fact that the Western World has always been strongly rooted in their Christian beliefs. These perceptions led to the sympathy of the Bulgarians felt by the west and the anger felt towards the Ottoman Turks for treating the Bulgarians as they believed they were being treated. The overall response from the West of the Uprising was skewed partly by their Christian background and partly from the sources they were receiving.

12:00 | Ben Denton: James Madison University Department of History
The Lily and the Crescent: Reshaping Mediterranean Power
Entering an expansionary era, the Ottoman Empire has situated itself to become one of the world’s next great powers. Ultimately the influence and capability of Sultan Suleiman the Magnificent within the Mediterranean Sea is directly indebted to the French Kingdom and King Francis I. This so called “union of the lily and the crescent” may have been sacrilegious, but it allowed the Suleiman to dominate the Mediterranean World and bridge the East and the West.

Session IX  11:00 – 12:00
11:00 | Jamie Caknipe and Courtenay Buckley: Lynchburg College Department of Psychology
Perceptions of the Criminal Justice System
In this study, the hypothesis was that using the label of ‘psychopath’ and photographs of an individual with psychopathic facial traits would lead to that person being found guilty. There were two levels of the label of psychopath (no label and a label) and three levels of the photograph (no photograph, low-psychopathic features photograph, and high-psychopathic features photograph). Photographs were used from a Holtzman (2011) study about dark trait facial structures. The study lacked many participants and many of the results of the experiment were found to not be significant, except for one.
11:15 | Maggie Westwater: George Mason University Honors College
Social Anxiety Disorder and Romantic Relationships: A Linguistic Approach
Although deficits in positive affect and interpersonal dysfunction are associated with social anxiety disorder (SAD), research of these constructs in the context of romantic relationships is lacking. Socially anxious individuals report greater conflict avoidance, reduced emotional expression, and fewer self-disclosures in romantic relationships, and prior research has linked social anxiety to reduced relationship satisfaction. In this study, 180 couples completed social anxiety and relationship satisfaction measures, followed by a discussion of their first date. The interactions were recorded in a laboratory setting, and subsequent behavioral coding has used linguistics as a novel measure of positive affect and interpersonal dysfunction. Current clinical interventions target social anxiety via training to re-allocate attention to positive stimuli, pursue approach- versus avoidance-oriented social goals, and restructure fears of positive evaluation. Greater understanding of language styles of socially anxious individuals could increase the efficacy of current clinical treatments.

11:30 | Yong Jun Kwon: Randolph College Department of Physics and Astronomy
Behavioral Analysis Techniques for Mobile Phone Collected Data
Bipolar disorder (BPD) is a severe and chronic mental illness that increases mortality nearly three-fold. Despite the use of mood stabilizers for many decades, BPD still disables many, and is listed as the ninth leading cause of disability world-wide. The ongoing suffering produced by this disease drives a clear need for improved treatment. This project aims to develop a smartphone intervention that will capture and feedback behavioral data to improve patient self-management and increase the effectiveness of psychological interventions to reduce symptoms and prevent relapse in BPD patients. The study is currently testing various techniques to capture the behavioral data in a useful form. Among them are, Eigenbehavior - identifying principle components of the daily behavior, Non-Parametric measure – discovering intradaily and inter-daily activity pattern, and Detrended Fluctuation Analysis – determining scale-invarianceness of the activity. We will discuss the effectiveness of above techniques for capturing the behavioral data.

11:45 | Morgan Epstein, Taylor Thomas and Sarah Davis: Christopher Newport University Dept of Psychology
The Effect of Political Affiliation on Believability and Emotional Effect of Political Headlines Before and After the Election
Co-authors: Lauren Shriver; Christopher Boyer; Lauren Gooden; Dr. Jeffrey Gibbons; Dr. John Finn
We examined the effects of political affiliation on the believability and emotional affect of positive and negative news headlines that were believable and unbelievable before and after the 2012 presidential election. We expected headlines to become more pleasant over time and unbelievable headlines to become more believable over time. The results partially supported these hypotheses, and implications are discussed.

Session X  2:00 – 3:00

2:00 | Anna Kobylski: James Madison University Department of Modern Foreign Languages
La Laïcité: Cultural Misunderstandings Between French and American Secularisms
Laïcité, loosely translated as French political secularism, was the French Republic’s way of suppressing the influence of the Catholic Church on public institutions in the 19th century. Although the separation of church and state is involved in both the French and American governments, cultural perspectives widely differ on the subject. In the United States, Americans have the freedom to live their daily lives according to their religious beliefs which includes the display of signs of religious affiliation in the public sphere. In 1989, three Muslim girls were suspended from French public school for refusing to remove their head scarves. In 2003, the French government adopted a law that prohibits the display of visible signs of religious affiliation at public institutions. This paper examines the history of laïcité in France from the 19th century to present day with particular attention to its implications for Muslim women and girls in France today.

2:15 | Anna Donko: Sweet Briar College Department of Modern Languages and Literatures (Spanish)
The Absurd Manifested through Humor in Virgilio Piñera's Avant-Garde Theatre
In Theatre of the Absurd, dramatists capture the essence of human struggle in a senseless and ridiculous world. The Cuban playwright, Virgilio Piñera, employs humor to communicate this condition—by laughing at man's situation, one does not allow the absurdness of society to break them. In this research, I analyze two of Piñera's lesser-known pieces; Jesús and Falsa Alarma and argue their Absurd characteristics.
Chairman Mao Zedong utilized Chinese music as propaganda to mobilize the Chinese people to carry out his revolutionary agenda for a new China. From the Yan’an Rectification Movement (1942-1944) to the Great Proletarian Cultural Revolution (1966-1976), Chairman Mao consistently pushed for a new China based on his personal interpretation of Marxism. By applying a historical approach, one can see how Mao’s reign over the Chinese Communist Party (CCP) before and during the Great Proletarian Cultural Revolution changed Chinese music, and how Chinese music was affected by the changing of leadership over the course of Mao’s career.

Filial Piety is an ancient Confucius practice still found in many Asian countries. This virtue promotes respect for the elderly and heavily influences the society of Taiwan. The influence filial piety has on creating an affordable long-term care system, and the effects filial piety has on home-care services provided by professional caregivers, is the focus of the current research. Similar to home-care in the United States, the professional caregivers in Taiwan are important to long-term care because they enable elders to remain in their homes, while simultaneously lifting the twenty-four hour care burden from the families. The data for this research was obtained by interviewing individuals who are affected by the health-care system in both countries. The presentation will examine how adopting what is learned from Taiwan’s newly developed, long-term care system can potentially lead to a shift away from institutionalized long-term care for the frail elders of our society.

Despite the UN mandate to protect the world from the scourge of war and facilitate international peace, its member states often fail to assert collective security principles. This failure results in a restricted political role for the United Nations. We hypothesize that, in complex conflicts that involve mutually exclusive demands, UN political capacities cannot be harnessed until the leading power has successfully negotiated a political settlement and regional actors commit to supporting it. Relying on primary UN sources and field research in Washington DC and at New York, we examine the Palestinian-Israeli conflict. We argue that, due to the high-stakes nature of the conflict and to its own record of position-taking, the United Nations can play only a minor political role until the United States succeeds in negotiating a settlement on questions related to sovereignty and security and the Arab bloc fully commits to supporting the terms of that settlement.

The purpose of this research is to discern Pakistan’s reaction to Iran’s nuclear program. This is a timely and important issue given the impending US withdrawal from Afghanistan, a move which promises to change the security situation for many of the Central Asian and South Asian states. Given Pakistan’s previously exhibited sensitivity towards regional power changes, by fully understanding how it is reacting to the Iranian program will reveal how the regional stage is set for the future. A it has been concluded that Pakistan supports Iran’s nuclear program. The next step in the process is to discover why Pakistan supports Iran’s nuclear program. Pakistan supports Iran’s nuclear program for several rational reasons like: to increase Pakistani influence in Afghanistan in the post-2014 world, counter a rising India, gain increased leverage over the United States in future negotiations, and to ensure that Pakistan will have continued access to Iranian energy.

In my study, I sought to determine which variables led to ethnic political party development in Turkey and apparent lack of ethnic political party development in Kyrgyzstan. I applied two established structural theories of ethnic political party development to both Kyrgyzstan and Turkey. These theories of ethnic party formation, written by the prominent authors Donna Lee van Cott and John Ishiyama provide several conditions that they consider necessary for an ethnic political party to develop. As a result, I compared these conditions to the conditions in Kyrgyzstan and
Turkey in order to see if their argument held true. After analysis, it appeared to me that Donne Lee Van Cott’s factors of ethnic party formation could be applied to Turkey and explains the emergence of Kurdish political party’s throughout the 1960s and early 1990s. Similarly, these conditions were not present in Kyrgyzstan which may explain a lack of ethnic party development.

2:45 | Lilian Tauber: Sweet Briar College Department of History
American Foreign Policy Declassified: Political Rights in Egypt and Morocco
The 2011 Arab Spring moved human rights concerns to the political forefront in several countries that are currently grappling with governmental reform. A comparative, historical investigation into discernible American influence in two case studies will focus on the integration of political rights into government institutions in the 20th and 21st centuries. The cases are Egypt, which experienced a full-fledged revolution and government transition, and Morocco, which retained its monarchy despite significant protests. The comparison of the two countries, which are of varying degrees of interest to the US, should allow considerable insight into the question of whether a connection exists between American foreign policy practices and the development or expansion of political rights in North Africa. This study is based primarily on evidence from declassified US government documents.

3:00 | Connor Diesing: Virginia Military Institute Department of International Studies
The Effects of Ethnic Salience on Post-Conflict Democratization: A Comparative Analysis of Bosnia-Herzegovina and El Salvador
Over the past 25 years the International Community has become involved in an increasing number of post-conflict democratic building efforts. Despite the expenditure of a great deal of resources, many of these efforts have been hindered by a variety of causes, most notably, salient ethnic cleavages. Although previous research has identified a relationship between the persistence of ethnic cleavages and failed post-conflict democratic building efforts, there has not been a study that identifies the mechanisms linking post-conflict democratic reforms and salient ethnicity. This paper attempts to fill the gap in the literature and is a theory-building exercise comparing the post-conflict cases of El Salvador and Bosnia-Herzegovina. The research found that recalcitrant elite networks were able to mobilize the existing ethnic cleavages, making them the most responsible for the failure of democratic reforms. This research is currently being continued and aimed to use the theory built and apply it to Afghanistan.

Poster Presentation Session

1.
Sophia Stone: Mary Baldwin College Department of Psychology
Effects of Estradiol and Body Fluid Status on Endurance Performance and Voluntary Running in Female Rats
Co-author: Kathleen Curtis
Hydration and body fluid regulation are critical to maximal exercise performance, but much of the research in exercise physiology has been limited to studies using male subjects. While estrogen is known to influence fluid balance, substrate utilization, and cardiovascular function via neural and peripheral mechanisms, the regulatory role of estrogen in fluid homeostasis during exercise has not been clearly defined. In this study, the effects of estrogen on endurance performance and responses to body fluid challenges during forced and voluntary running were investigated. Endurance during forced running tests was higher in estradiol (EB)-treated than in oil-treated ovariectomized rats (p = 0.05), and was reduced by water deprivation in EB-treated rats only (p = 0.04). In contrast, body fluid challenges increased voluntary running in EB-treated rats with no effect on running in oil-treated rats. These findings demonstrate differential responses to body fluid challenges mediated by estrogen during forced and voluntary running.

3.
Alexander Trochez: Christopher Newport University Department of Psychology
A Literature Review of Modern Nano Fiber Fabrication Techniques and Applications
Since its inception polymers have become an important field in producing materials for advance technologies. Within polymer science, polymer Nano fibers have become a steadily increasing demand in industry for its promising applications including absorbance, tissue engineering, protective apparel, filtration, sensors and hygiene. To address this demand, researchers have developed various methods such as electro-spinning, melt-blowing, bi-
component spinning, force-spinning and flash-spinning for the fabrication of nanofibers. This literature review will summarize the fundamentals of the techniques listed for nanofiber fabrication, highlight the recent advances for future research, and investigate the current efficiency for each technique.

4. David C. Williams: Hampden-Sydney College Department of Psychology
Bilateral Lesions of the Thalamic Reticular Nucleus Increase Distractability in Rats
Co-authors: Hugh Fraser, Dr. G. Dan Weese
The sensory sectors of the thalamic reticular nucleus (TRN) regulate thalamo-cortical transmission of sensory stimuli and modulate attention within and between modalities through inhibitory circuits originating from thalamo-cortical afferents. Through this system, distractions can be minimized. We trained rats on a novel distraction task, beginning with either a visual or auditory 2-choice discrimination task, and then on half of the trials per session, presented irrelevant stimuli (distractions) from the other modality at the same time as the discriminative stimulus. The intensity of the distraction were adjusted to decrease performance by 5-15% from criterion performance on non-distraction trials. Bilateral ibotenic acid lesions of the visual and/or auditory sectors of the TRN have been performed. The 7 auditory rats and 6 visual rats with successful lesions of the TRN, show a 5% drop in correct response during post-lesion performance of distraction trials.

5. Alissa Feudo: Christopher Newport University Department of Psychology
A Descriptive Study Investigating the Significance of Animals in the Near-Death Experience: An Analysis of NDE Accounts
A near-death experience (NDE) is an exceptionally powerful psychological event that may include interactions with deceased pets or animals (LaGrand, 2005). Such characteristics of NDEs highlight the importance of animals, and support previous research that demonstrates a unique bond between humans and animals (Duvall & Pychyl, 2010). Evidence determining the nature and realism of NDE is not yet solidified, however, the unique biological changes, out-of-body experiences, imagery, and life altering psychological implications of such experiences are highly consistent (Lommel, 2011). This current study examined similarities and differences between animal and non-animal related NDE accounts in order to further investigate the relationship between NDE and animals. Seventy-eight cases gathered from the Near-Death Experience Research Foundation website were coded utilizing a modified Greyson Scale, and analyzed with regard to demographic information, religious/spiritual constructs, feelings, and life attitudes.

6. Emily Darugar and Amy Wixtrom: Christopher Newport University Department of Psychology
The Fading Affect Bias in Death Events with Predictive Religious and Coping Variables
Co-authors: Kalli Wilson, Taryn Lewis, Ashley Fehr
The Fading Affect Bias (FAB) is the tendency for unpleasant emotions associated with unpleasant events to fade more than emotions associated with pleasant events (Walker et al., 1997, 2003b, 2007). Previous research by Lee et al. found negative religious coping (NRC) predicted prolonged grief responses to deaths, which inspired us to examine FAB across death and regular events. We examined the relation of NRC and religious variables to FAB, which was expected to be greater for regular than for significant events. Participants in the current study consisted of 164 female and male undergraduate students between 18 to 25 years old. The FAB phenomenon was replicated, and results suggested that death does not necessitate prolonged unpleasant affect. FAB was not lower for death than for regular unpleasant events. Additionally, NRC most strongly predicted FAB for regular unpleasant events. The current findings suggest an accepting death attitude is a beneficial coping mechanism.

7. Emily Darugar: Christopher Newport University Department of Psychology
The Effect of Image Congruency, Media Consumption, and Media Skepticism on Believability and Recognition of Headlines
Co-author: Ashley Fehr
The current study examined the effect of congruent and incongruent images on the believability and recognition of news headlines. Participants completed online questionnaires. The Time 1 questionnaire contained initially believable and unbelievable headlines, and each headline was paired with either an image or no image. The Time 2
questionnaire contained target headlines from the Time 1 questionnaire, images, and foils. Participants rated the believability of each headline at Time 1 and Time 2 and their recognition of each headline at Time 2. Participants also completed media consumption and media skepticism questionnaires. Unbelievable headlines became more believable over time, and believable headlines became slightly less believable over time. Matching image conditions across time aided recognition of unbelievable headlines, but hindered recognition of believable headlines for incongruent image conditions. Low media skepticism individuals provided higher believability ratings than high media skepticism individuals, but only for participants reporting high media consumption.

8. Gabrielle Martin: Christopher Newport University Department of Psychology
Using the Big Five Characteristics to Sort Voter Attraction to a Candidate: A Case of Trait Similarities Between Self-Ratings
Co-author: Lynn-Ellin Zeigler
The study investigated the congruence of personality traits in voters and the 2012 presidential candidates. Two competing theories of attraction offer complementary yet different explanations about the role of personality variables in determining a voter’s preferred candidate. While the Similar Attraction Paradigm maintains that individuals prefer others who share similar personality characteristics, the Similarity to Ideal Self hypothesis suggests people are more attracted to individuals that exhibit characteristics they desire in themselves. Using a survey of the Big Five Mini-Markers, 36 Republicans, 30 Democrats, and 27 Independents assessed their own personality and both Romney and Obama’s personality. Correlations were conducted for each group’s rating of their self and their subjective view of the candidates’ personality, across four of the five traits: conscientiousness, agreeableness, emotional stability, and openness. Republicans viewed Obama almost equally as favorably across openness and agreeableness, whereas Democrats found no significant similarities between their self and Romney.

9. Sarah Troxel: Christopher Newport University Department of Psychology
Literature Review of Negative Environmental Factors on Resilience in Adolescence
Certain factors in adolescents’ lives may have negative effects on their development and ability to adapt to the surrounding world. More specifically, stressful events such as divorce, poverty, and parental unemployment can put adolescent’s social and emotional development at risk (Ackerman et al., 2004; Karevold et al., 2009). This literature review will compare the relationship between the levels of resilience adolescent’s display to the severity of the negative environmental influence. Research has found consistent qualities in resilient adolescents, including intelligence, easy temperaments, high self-esteem, and faith (Masten & Coatsworth, 1998). Additionally, research suggests that warm relationships with parents and other adults in their community may result in higher levels of resilience (Rutter, 2006). Recent studies have shown there are biological aspects contributing to mood and response to the negative events (Kim-Cohen & Gold, 2009). Future research should investigate the effect of grief on children depending on their resilience.

10. Marisa Michak: Christopher Newport University Department of Psychology
Is High Life Satisfaction Advantageous for Students’ Academic Success?
Co-author: Katie Kannan
This study investigated whether very high life satisfaction was associated with increased student engagement, higher GPAs, and increased social support for learning in middle school students. A total of 760 7th and 8th grade students completed self-report measures of life satisfaction, student engagement, and perceived social support, and GPAs were obtained from school records. Based on their life satisfaction scores, students were divided into three groups: “low,” “average,” and “high.” Results indicated that students with the highest life satisfaction were consistently more engaged in school, obtained higher GPAs, and had increased social support for learning compared to their average peers. Furthermore, students with the lowest life satisfaction scored the lowest on the indicators of academic success. These findings indicate that low life satisfaction is a risk factor for academic difficulties, while high life satisfaction is essential for adolescents’ success in school.

11. Tsubasa Watanabe: Randolph College Department of Sociology
Assessing Effects of the Randolph College Student Center on Levels of Community Integration
This study addresses how Randolph College students use the new student center and its potential to influence levels of interaction and satisfaction with the college community. The researcher conducted randomized observations of student center interactions, and the results were compared against survey data collected from residential students. Results suggest that there were different tendencies in users' attitudes about the campus community depending on frequencies of users' visits, their gender, and activities they engage in. The survey results support values for diversity, integration, and intercultural exchange. The researcher was able to conclude that the student center is encouraging casual interactions across diverse groups, strengthening community ties. Beyond providing a detailed analysis of interactions in a new space, we aim to produce specific policy recommendations for maximizing beneficial interactions.

12. 
**Amber Lane: Radford University School of Communications**

**Pinterest: Perfection or Problematic**
Pinterest has rapidly become one of the most popular social media platforms next to Facebook and Twitter. Its thousands of users, combined with its user-friendly bookmarking service also make it an extremely powerful channel of promotion for businesses and communicators. However, despite the vast promotional benefits that Pinterest provides, there are also several disturbing trends surfacing regarding the image of women and the damaging messages of perfection that are being communicated through the various pins being advertised daily throughout the site. In regards to the field of Public Relations it is essential to examine trends such as these in order to adapt and more effectively construct messages toward our target audiences that both benefit the clients we serve and further enhance the field as a whole. Using qualitative research methods, this project attempts to identify and analyze these trends and their effects on Pinterest’s target audience.

13. 
**Josie Drury: College of William and Mary Department of Art History**

**Empress Ariadne: Depictions of a Byzantine Empress as a Symbol of Imperial Power**
Within the patriarchal society of Byzantium, a woman was expected to follow a certain role that mirrored the virtues of an ideal woman during this era. This austere role also applied to Byzantine empresses such as Empress Ariadne (c. 515). The empress was seen not as a woman of power, but as the wife of the emperor, who had sole reign of the empire. Through her presentation in Byzantine visual culture, an empress, such as Empress Ariadne, became a symbol that legitimized her husband’s power. Many of the artistic representations of Ariadne are ambiguous, often found with no indication of her name or personal identity. The ambiguity of her depiction suggests that Ariadne’s imperial identity overrides her individual one. By examining imperial Byzantine representations, it can be suggested that the individuality of the Empress Ariadne, along with many other empresses, is lost amongst the normative visual language of the period.

14. 
**Jessica Barry: Sweet Briar College Department of Anthropology**

**Vox Populi: Latin Epigraphy at Ephesus from the 1st Century C.E.**
Stele and tablets from the Roman Empire hold the words of the common people and give insight into the true state of the empire. While the words and deeds of emperors were carefully documented and preserved for all, the writings of the common people were often left at the wayside. I present a comprehensive analysis of Latin epigraphy found at the 1st Century C.E. site of Ephesus, Turkey. My presentation describes the proper methods of documenting the epigraphs without compromising their integrity, as well as their significance in the Classical period Ephesus. My poster contains photographs of the epigraphy along with their respective transcriptions and translations. They contain information about Roman citizens living in Ephesus along with citizens living in Egypt and the trade agreements between the two. The epigraphs provide valuable information about the lifestyles and daily happenings of the average Roman citizen.

15. 
**Katy Dalenberg: George Mason University Honors College**

**The Cross-Cultural Analysis of Pre-Columbian Central American Ceramic Figurines**
My project was a cross-cultural analysis of Pre-Columbian Central American ceramic figurines at the Smithsonian National Museum of the American Indian. The construction of figurines denotes not only artistic trends, but also how people constructed their idea of cultural identity. In order to look at elements of cultural identity, I examined
traits to show the presence of ideas of beauty, gender roles, status, and power. To assess these ideas, I individually analyzed over a hundred complete figurines, noting elements such as sexual traits, clothing, hairstyles, jewelry, body paint, and positioning. Using ethnographic materials as well as the raw data recorded at the Smithsonian, I translated the permeation of these characteristics into ideas of cultural identity across cultures and time.

16. Charles Trumble Brooks: Randolph-Macon College Department of History
"The Mischievous Plan": The British Raids in Virginia from 1780 to 1781
This paper assessed the British raids in Virginia from 1780 to 1781. In the winter of 1780 to the spring of 1781 the British Commander in Chief Sir Henry Clinton sent several detachments to Virginia, under Brigadier General Benedict Arnold and Major General William Phillips, to support Lieutenant General Charles Cornwallis’ movements in the South by conducting raids, and establishing a post at Portsmouth. However, by March 1781 Cornwallis had made little progress in his operational goal of restoring royal government in the South, so he moved his troops to Virginia. When Cornwallis reached Virginia he authorized a series of raids under Lieutenant Colonels Banastre Tarleton and John Simcoe. This paper argues that while the raids during the winter of 1780 and spring of 1781 were effective and furthered the larger British operational strategy, the raids after this time under Cornwallis reflect a break down in British operations in America.

17. Thomas Bailey and Rebecca Tupaj: Christopher Newport University Department of Psychology
Flourishing Creativity Levels Through Art and Music Programs in West Africa
The purpose of this study was to determine the impact of art and music training on children's creativity levels using the Figural version of Torrance Test of Creative Thinking (TTCT). A total of 55 children between the ages of five and eight enrolled in an after school music and art program in Benin, West Africa, and completed the pre-test TTCT-Figural. For the past two years, students have been exposed to the art and music programs and have taken multiple TTCT-Figural tests. These tests were then scored on three domains (fluency, originality, and elaboration). The scores were compared with a control group that was not exposed to the music and art programs. Using repeated measures ANOVA, it was determined that the courses had a significant impact on TTCT scores. These results show that the program has been a positive influence on fostering higher order thinking skills such as creativity.

19. Prithika Selvavel, Stephanie Hall and Kyle Scott: Christopher Newport University Dept of Psychology
Gender Differences in Schadenfreude
Schadenfreude, exhibiting pleasure from another person’s misfortune (Smith, 2009), was previously disentangled into a three-factor solution resulting in Physical, Emotional, and Justice subcomponents. The purpose of the present research was to examine gender differences in these three factors. Previous literature has shown that that men experience Schadenfreude to a greater degree than women (Piskorz, 2009). Data from this study also suggested the existence of gender differences in Shadenfreude, F(3,233) = 3.774, p = .011; Wilks λ = .954; Partial η² = .046. Men exhibited greater rates of Schadenfreude than women. Subsequent analysis also revealed gender differences on all three subcomponents of Shadenfreude. Implications and future research will be discussed.

20. Emily Schulz: Christopher Newport University Department of Psychology
Sixth Sense: A Comparative Analysis of the Methodologies Investigating Extrasensory Perception
Co-authors: Catherine Barton, Nicholas Sherwood
The purpose of this paper is to illustrate the history of psychology’s interest in extrasensory perception (ESP). Empirical evidence suggests various methodologies hold separate benefits and limitations to their procedures. To build a framework, we analyzed studies incorporating techniques such as neural imaging, physiological reports, surveys, and personal testimonies. In doing so, we critically differentiated methodologies based on the research’s historical contexts and cultural factors. We also discuss the advantages of procedures compared to others regarding possible discovery of ESP’s existence. With this comprehensive narrative of archival reports and anecdotal evidence, we foresee future theoretical discussion and potentially stronger scientific exploration sooner suggesting the actuality or absence of extrasensory perception.
21. Emily Ohriner: Christopher Newport University Department of Psychology
A Literature Review: Influences on Accurate Child Testimony
Child eyewitness testimony, in the courtroom, is a subject that has caused much controversy in recent years. An overbearing issue with this idea is the accuracy of the testimony given, which can range from 25 to 83 percent (Fote, 1986; Lepore, 1991). This literature review will investigate the accuracy of young children’s testimonies, as well as the outside influences that may affect that accuracy. Some studies have shown that factors such as interviewer behavior, past abuse, and child’s physical presence, in the courtroom, can influence how accurately a child responds in the courtroom (Sparling et al., 2011; Nathanson & Saywitz, 2003; Goodman et al., 2001). Similarly, other studies suggest that misinformation from a child’s parent can also result in testimonial inaccuracies (Poole & Lindsay, 2001). Future research could benefit from studying how testifying in violent criminal trials affects children throughout their lifetime.

22. Sabrina Callan: Christopher Newport University Department of Psychology
The Effects of Maternal Depression on Child Development: A Literature Review
Depression often prevents mothers from participating in the correct care, attention, and nurturing of their children, therefore disrupting the environment necessary for a child to develop properly. This literature review will examine how an upbringing without these crucial elements may adversely effect the cognitive, behavioral, and physical development of children. Some studies suggest that the parenting styles of depressed mothers often contradict childcare guidelines set for healthy mental development, such as the feeding of, resting of, and interaction with their children (Paulson, Dauber, & Leiferman, 2006). Other studies show that children of depressed mothers tend to have poorer overall health, more allergies, and a higher risk of asthma (Turney, 2011). Future research studies should look into the effects that sibling depression has on child development.

23. Taylor Jewett: Christopher Newport University Department of Psychology
Therapy Practices for Adults Affected by Traumatic Childhood Experiences
“Complex trauma most often results from exposure to severe stressors that begin in childhood, occur repeatedly and take place within the caregiver system” (Lawson, 2013). This literature review will evaluate the effects of ongoing childhood trauma on adults, as well as appropriate treatment practice to help these individuals. Previous studies have shown that it is often difficult for clients with these backgrounds to present their problems to their therapists; thus the therapists must focus on three clinical interventions in treating these individuals, including alliance repair, developing reflective functioning, and motivational enhancement (Lawson, 2013). Other research suggests evidence-based practice and critical thinking could be helpful to adults who are coping with traumatic childhood experiences (DeRosa, 2013). However, because there are no clear guidelines on how to deal with patients who have experienced childhood trauma, future research should develop lifelong learning approaches that will be able to permanently help effected adults at each stage of their coping period.

24. Lynn-Ellin Zeigler: Christopher Newport University Department of Psychology
The Effect of Environmental and Cultural Factors on Mental Health in Pakistan
The current study explores a theoretical framework that explains the increased prevalence of mental health disorders in Pakistan. An explanation for this phenomenon considers a range of cultural, temporal, and geographical factors, as well as immediate threats to survival. Civil unrest, a history of religiously-driven violence, and a contemporary struggle for political power compose the broader context for this research. Also, gender role expectations, geographical and environmental threats, and cultural stigma against mental health issues contribute specifically to the framework proposed. The conflux of these factors has been correlated with a higher incidence of psychological disorders, such as depression, anxiety, substance abuse, and posttraumatic stress disorder (PTSD). This mental health crisis exacerbates dysfunction within the Pakistani community and destabilization of the society as a whole. This study attempts to explain these dire mental health outcomes, and offers possible directions for future research and remedy.

25. Kavya Pradhan: Randolph College Department of Environmental Science
Assessing Impacts of the Combined Sewer Separation Project on Water Quality in Blackwater Creek
The purpose of this research was to examine the health of the Blackwater Creek against the backdrop of the Combined Sewer Separation (CSS) project, Lynchburg, VA. The project utilized data collected over a span of 10 years (2003 to 2012) and focused on Rapid Bioassessment (RBA) and chemical analysis data. When analyzed in conjunction with the progress of the CSS project, the data did not exhibit a detectable difference between data collected before and after 2006 under the conditions of a student’s t-test. However, a simple linear regression of the data sets showed improvement in stream health for both measures, but showed a greater increase in results pertaining to the Rapid Bioassessment data. Further sampling is necessary to accurately determine the effects of the CSS project on stream health, especially since the project has not been completed in the relevant areas in the lower Blackwater Creek watershed.

26. Maria Cuevas: Sweet Briar College Department of Environmental Science
Measuring Aerosol Nucleation in the Blue Ridge Mountains
Co-authors: Megan A. Link, Heather T. Yepez, and Thomas L. O’Halloran
It is important to study atmospheric aerosols because they impair visibility, negatively affect human health, and influence local and global climate. Aerosols can be added to the atmosphere through new particle formation (i.e. nucleation). The specific chemical and physical mechanisms driving aerosol nucleation in the atmosphere are still poorly understood. The purpose of this study is to quantify the contribution of new particle formation events to regional atmospheric aerosol loading and develop a statistical model for predicting these events. During summer 2014, a field campaign will be conducted at Sweet Briar College, located in the Blue Ridge Mountains of central Virginia, where regional aerosol loadings are significant. Gas and particle phase instruments will be deployed on a 120-foot tower to measure concentrations of SO2, NOx, and O3 as well as aerosol size distributions. Our results should improve our ability to predict the occurrence of aerosol nucleation under various meteorological conditions.

27. Erik Kellogg: Hampden-Sydney College Department of Biology
The Growth Performance of an Aggressive, Invasive Plant Species, Centaurea stoebe (Asteraceae), in Different Substrates
Invasive species are considered one of the greatest current threats to biodiversity today. They can be superior competitors for resources, displacing native species. Centaurea stoebe ssp. micranthos (Asteraceae) is an invasive plant across Northern America, rapidly invading rangeland and disturbed sites, that was accidentally introduced from Europe. C. stoebe is considered to be an “environmental engineer” that may alter soil properties to favor it in competitive interactions with other plants. We conducted experiments to determine what soil types are favored by C. stoebe in the absence of competition, growing it in a greenhouse in three different soil-types: sand, an absorbent peat potting-soil, and a half-and-half mix of sand and soil. Results suggest that root-growth was far greater in sand, but shoot- and leaf-growth was greater in soil. The experimental group in the more moisture-rich soil also showed greatly increased mortality, suggesting C. stoebe may be less healthy in wetter environments.

28. Sean Kellogg: Hampden-Sydney College Department of Biology
The Invasive Potential and Competitiveness of the Invasive Plant Centaurea stoebe as Compared to the Native Lespedeza capitata
Centaurea stoebe ssp. micranthos, commonly referred to as spotted knapweed, is an invasive plant species in the Asteraceae family. It is increasing in range and abundance throughout North America and is found in central Virginia. In order to investigate its invasive potential we designed a competition experiment in the greenhouse. Our hypothesis was that C. stoebe would outcompete the native plant Lespedeza capitata and could therefore pose a threat to native plant populations along the High Bridge Trail in central Virginia. Plants were placed in “Thunderdome” style competition arenas, grown for a month and their performance assessed. We found that, out of 150 competition experiments, 13% of the trials resulted in a victorious L. capitata, 26% of the trials resulted in a stalemate where both plants survived, 46% of the trials resulted in a victorious C. stoebe, and 15% of the trials resulted in a stalemate where both plants died.

29. Michelle Pasier: Roanoke College Department of Chemistry
Characterization of a PurA in *Mycobacterium tuberculosis*

The bacterium *Mycobacterium tuberculosis*, cause of tuberculosis, infects one-third of the world's population. Due to a rise in treatment resistant strains of the pathogen, there is a current resurgence of tuberculosis in both developing and industrialized countries. The development of new treatments is needed to combat the disease. The most effective method to treat such a disease is to have the treatment target a specific molecular site, such as the enzyme adenylosuccinate synthetase (ADSS). The protein is most likely encoded by the gene Rv0357c, whose tentative characterization has been inferred to be the purA from mutant phenotypes, electronic annotation, and its primary sequence similarity to other bacterial ADSSs. Using PCR, the gene was amplified from H37Ra *M. tuberculosis* genomic DNA. Attempts to insert the gene of interest, via the vector pMal-c5e, into XL1-Blue Escherichia coli cells for sequencing and later protein characterization and activity testing have failed, yielding empty vector.

30. **Maura Belanger: Roanoke College Department of Chemistry**

Characterization of the PurF Enzyme in *Sulfolobus solfataricus*

Archaea, one of the three domains of life, are closely related to eukaryotes. Purines are important in cells as both DNA bases (adenine and guanine) as well as energy carriers (ATP, GTP). The first step in purine biosynthesis converts 5-phospho-α-D-ribose (PP1-ribose-P, PPRP) and glutamine into β-P-ribosylamine (PRA) and glutamate. The enzyme that catalyzes this reaction is called phosphoribosylpyrophosphate amidotransferase (GPATase or PurF). In *Sulfolobus solfataricus*, the gene that is believed to code for this protein is SSO0632 while the next gene, SSO0633, has an unknown function. These two genes have been successfully cloned into pMAL-c5E vector and shown through complementation experiments to have PurF-like qualities. Work is in progress to create a new vector; pMAL-m1 will be used with the SSO0632 insert for a potentially more active protein. The protein coded for by SSO0633 has been successfully expressed and purified and the spectrometric assay is being optimized.

31. **Noah Reeve Aguayo: Roanoke College Department of Chemistry**

Investigation of Predicted PurP Enzymes from Archaeal Organisms

A PurP enzyme, in the presence of ATP and formate, will convert the aryl amine group on 5-aminoimidazole-4-carboxamide-1-β-D-ribofuranosyl 5’-monophosphate (ZMP) to an amide group forming 5-formaminoimidazole-4-carboxamide-1-β-D-ribofuranosyl 5’-monophosphate (FAICAR) in the ninth step of the purine biosynthetic pathway. We have investigated predicted PurP enzymes from the purP genes of the organisms Methanocaldococcus jannaschii (MJ0136), Thermococcus kodakarensis (TK0196 and TK0203) and *Sulfolobus solfataricus* (SSO0239 and SSO0241). Based on the results of both the activity assays and the complementation experiment the enzymes from TK0196, TK0203, SSO0239, and SSO0241 genes do not produce a functional ZMP formyltransferase and should not be considered a PurP enzyme. In addition, the function of the gene from MJ0136 as a ZMP formyltransferase is supported by the results of this investigation.

32. **Zachary Kemp: Virginia Tech Carilion Research Institute**

The Effect of Amyotrophic Lateral Sclerosis Mutations on Proprioceptive Sensory Neurons

Co-author: Sydney Vaughn

Amyotrophic Lateral Sclerosis (ALS) is a neurodegenerative disease that targets motor neurons in the spinal cord and brain. However, little research has been conducted to see how ALS affects sensory neurons. The experimenter used immunohistochemical-staining procedures and florescence microscopy to evaluate the neuromuscular junctions (NMJs) and muscle spindles. Upon review, control NMJs had an average denervation of 8.58 percent compared to the average ALS denervation percentage of 53.45. This showed that motor neurons were affected by the disease, causing the nerve and muscle to lose connection. Also, there was a statistically significant difference between the Control and ALS muscles spindles with less than ten percent denervation ($p=0.00609263$), between ten and fifty percent denervation ($p=0.048062863$), and over fifty percent denervation ($p=0.047897518$). In conclusion, any treatment focused on curing ALS should involve sensory neuron health due to their susceptibility to ALS and potential use as a model for testing new drug treatments.

33. **Sergio Rodriguez and Kristina Marinak: Randolph College Department of Biology**
The Role of Physical Interaction Between Allergenic Fungi and Human Airway Epithelial Cells

P. pullulans, A. alternata and A. fumigatus are allergenic fungi that are associated with an increased risk of allergy and asthma. Physical interactions between surface of the fungal spores and the epithelial cells lining the airway can cause an inflammatory response and increased mucous production. In this project, we determined the importance of these physical interactions between the spores and the human airway epithelial cells (A549). The cells were cultured and either directly exposed to live conidia from each fungus or allowed to indirectly interact by placement of a 0.2 µm membrane between the cells and conidia. The role of physical interaction was assessed by the presence of pro-inflammatory cytokines, IL-6, IL-8, and Muc5AC (mucin) via Western Blot analysis, semi-quantitative RT-PCR, and cell viability by means of trypan blue cell staining and lactate dehydrogenase (LDH) assay. We determined changes at the cellular level are likely due direct physical contact with the fungal cell wall.

34.
Fumin Li: Sweet Briar College Department of Engineering
3D Visualization of Sweet Briar House Using AutoCAD
The purpose of this research is to generate a 3D model of Sweet Briar House (the house) using AutoCAD, a software application for computer-aided design and drafting. Sweet Briar House has been home to the presidents of the College since 1901 and it is listed on the National Register of Historic Places. The model of the house will be created and visualized based on its blueprint. Ultrasonic tape measurement will be used as a supplementary tool to size the architectural details of the house. After all the measurements are finished, the full 3D reconstruction of the house will be performed in AutoCAD. The ultimate goal for this research is to create a visual reality model for Sweet Briar House so that people can visit this historical building online.

35.
Timothy Slesinger and Alex Tran: Randolph College Department of Physics
Investigating Traditional Methods of Inertial Navigation Versus Using a Smartphone
Inertial navigation has long been used for measurement of position and orientation in commercial travel (boats, planes), but the systems are complicated and expensive. GPS is good for two-dimensional positioning on the surface of the Earth, but not for orientation or altitude, and GPS signals are not always available. Inertial navigation systems are self-contained and do not require communication with an outside agent. Very recent improvements in micro-machined electromechanical systems (MEMS) have made the application of inertial navigation techniques easily available. We became interested in this project through our work in mapping roller coaster rides. In this project, we will finish a comparison of research-grade inertial navigation equipment to the sensors built into a standard smartphone. We will continue to develop techniques of averaging, noise-reduction, and reduction of drift in a navigation signal generated by accelerometers and gyroscopes.

36.
Danielle M. Honings: Virginia Commonwealth University Department of Political Science
A Broken Model: Solving America's Airport Security System
In the wake of the September 11, 2001 terrorist attacks, the need for heightened security arose in all aspects, especially for airports. In response, body scanners promised speedy checking times and processing many people at once, but their use comes with a hefty list of consequences. Although eliminating body scanners entirely is probably not feasible, we should limit their usage in the US because the costs outweigh the benefits, they cause privacy and health concerns, and there are much better alternatives to add and even replace them. I analyzed sources from the Department of Homeland Security to the leading scientific journals, including the Journal of Transportation Security and the Law and Security Review, concentrating on sources offering general information about Israeli and American airport security models, arguing in favor of low-tech solutions, concerning true public opinion and effectiveness of mixing security techniques.