

19th Annual
**Mid-Atlantic Regional Conference
of Undergraduate Scholarship**

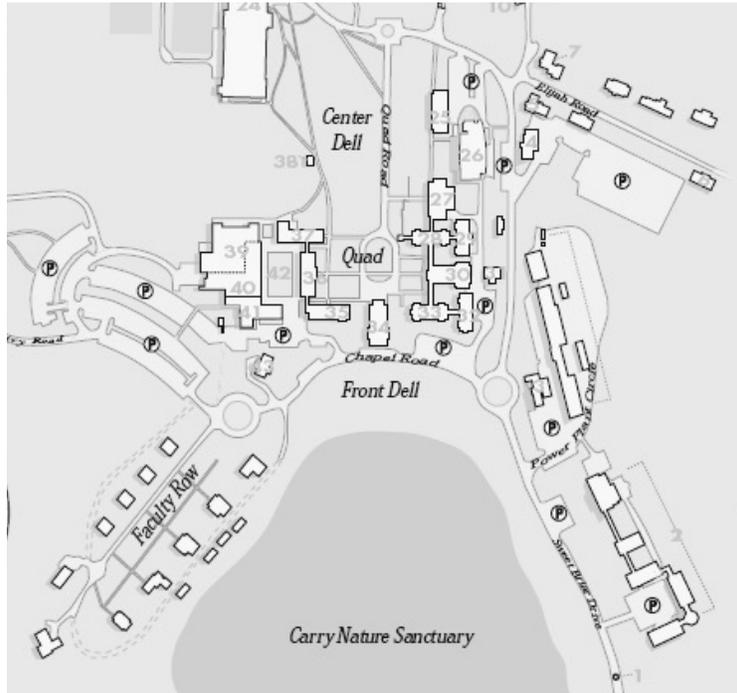


**MARCUS
XIX**

**Saturday, October 14, 2017
Sweet Briar College**

A message from the director

Welcome to MARCUS! Whether you are presenting, advising, or auditing today, we are delighted that you are joining us on the campus of Sweet Briar College. We hope you will take the opportunity to venture out beyond the conference center and explore the rest of our beautiful campus!



(you enter here)

You may see more families wandering around campus than you'd expect because this year MARCUS overlaps with Families Weekend. So there are many events on campus, including a performance of "Avenue Q" at 7:30pm. Please join in for any of these events that catch your interest -- all the event details are at your fingertips online at <http://sbc.edu/families-weekend/> -- and consider making it a full weekend and staying overnight at the Elston Inn.

Schedule At a Glance (*all events are on lower level unless otherwise noted*)

9:00 AM - 9:50 AM	Registration & refreshments
9:50 AM - 10:50 AM	Symposia A, B, and C
11:00 AM - 12:00 PM	Symposia D, E, and F
12:00 PM - 1:00 PM	Lunch upstairs (Wailes Room)
1:00 PM - 2:00 PM	Symposia G, H, and I
2:10 PM - 3:10 PM	Symposia J, K, and L
3:10 PM - 4:00 PM	Poster session & refreshments upstairs (Boxwood Room)

SYMPOSIUM A

A Learned Woman is Thought to be a Comet that Bodes Mischief: Proto-Feminist Writings in 17th Century Stuart England

Rachel Barton (James Madison University)

The early 17th century in England was a transitioning period to the early modern era, which included an increase in the authorship of women. I examine works from Rachel Speght, Bathsua Makin, and Damaris Cudworth Masham on philosophy and religion. Through these writings, they argued for an increase in women's education and defended their worth. This models a kind of "proto-feminism." Each of their most prominent works are examined in combination with scholarship on the concept of feminism. It is argued in the paper that these women created a literary climate that would be more receptive to future female authors.

The Constitutional Convention: The Issue of Congressional Representation

Ty Reed (James Madison University)

The issue of congressional representation at the Constitutional Convention of 1787 was the most contentious of the entire convention and pitted representatives from small states against large states. The issues over representation led to weeks of debate until an agreement, known as the Connecticut Compromise, was reached in July 1787. Research for this paper centers around the notes James Madison authored while in attendance at the Convention. Madison was disappointed in the results of the compromise since he believed the small states wielded too much power in the newly created government. The Connecticut Compromise created a balance of power between the large and small states in the new government by securing equal representation in the upper house of the legislature.

708-382-266-599: Your Most Humble Servant

Logan Olszewski (James Madison University)

This project works to show the significance of Benjamin Tallmadge and his Culper Spy Ring in the Revolutionary War. The goal is to show that Tallmadge's Ring was a key asset in taking back the important port city, New York, and winning the war. The purpose of this research is to also show how the confidence that the Ring felt in its actions determined its success. The intent of this project is carried out through an in-depth study of letters between the Spy Ring members that contain pertinent intelligence on British troop and cargo positions.

The "Colossal Bellows": Zillah's Role in Wuthering Heights

Rachel Moore (Virginia Tech)

While critics of Emily Bronte's Wuthering Heights have widely analyzed Nelly's roles in the novel, little attention has been given to the other female servant, Zillah. In this paper, I argue that despite appearing infrequently in dialogue and throughout the novel, Zillah's character is more important than she first appears. Zillah certainly acts as a medium to convey Catherine and Heathcliff's love story, but she also takes on more crucial roles in the novel such as narrating short passages and intervening directly in plot. Although she occupies a seemingly marginal status as an uneducated domestic servant, Zillah emerges, from time to time, as the "colossal bellows" that fans the flames of the major conflicts in the novel.

SYMPOSIUM B

Shower Buddy: An Innovative Product to Clean Your Back

Sean Stimpson (Hampden-Sydney College)

The purpose of this research is to provide an effective solution to clean a person's back in the shower. There are products in the market that attempt to resolve this issue (loofah), but do not focus on the back. Current products are ineffective to some people, such as kids or people with poor range of motion. The design of the Shower Buddy allows people to easily apply soap to the mounted sponge and rub their back against the sponge until they feel clean. Through this presentation, our aim is to test-market the product and get feedback from general public. The goal of the corporation is to provide the product internationally by beginning production in the US and then expanding internationally.

An Anytime Algorithm for Fair Congressional Districting

Jeffrey Amate (Lynchburg College)

Drawing Congressional districts is subject to human bias -- "gerrymandering," intentionally drawing districts to benefit one party over the other. Our "anytime" (interruptible) algorithm draws Congressional districts based on geographic boundaries and population data from the US Census Bureau, using a heuristic approach to maximize district compactness, generally considered the best criterion for fair and acceptable districting. Recent contributions to the software include upgraded visualization tools and refinement of the heuristic applied to state-by-state 2010 census data.

The Effects of NAFTA on Mexico's Corn Producers: A Political Economic Analysis

Chanel Friedrich (Sweet Briar College)

The North American Free Trade Agreement (NAFTA) has been controversial from the time of its implementation due to the comparative advantages a wealthy country like the U.S. can have over a developing country such as Mexico. While the U.S. has experienced losses in employment in some industries such as auto manufacturing, these losses are incomparable to the economic losses that Mexico has experienced since NAFTA was enacted. This presentation analyzes the comparative advantages and disadvantages of each country in corn production and investigates how these advantages/disadvantages in each country affect one another's corn production. Research was conducted through two vehicles, a literature review and a data analysis on economic indicators over the 45-year time period from 1971 to 2016.

Interventions for Healthy Eating through Farm-to-School Programs: A Behavioral Economics Approach to Identifying Effective Strategies

April Boyd (Sweet Briar College)

Interventions that promote healthy behaviors can combat the problem of childhood obesity in the United States. Farm-to-school (F2S) programs may be successful at addressing this public health problem while improving local economies. This research will apply behavioral economic theory to identify the most effective F2S strategies on the consumer side (i.e., schools and students). Insights from behavioral economics can help us design interventions that include tools such as "nudging" and "changing the choice environment" versus informational approaches that do not address inherent behavioral biases relevant to healthy choices. The research will advance applications of behavioral economics to F2S programs and will result in a recommendation for behavioral economic techniques that can further increase the effectiveness of F2S programs.

SYMPOSIUM C

Optimizing A Multi-Step Synthesis

Erica Orr (Sweet Briar College)

This project aimed to develop a novel, multi-step synthesis experiment to serve as a capstone experience for undergraduate students who take second-semester organic chemistry at Sweet Briar College. The synthesis involved a reaction called an aldol condensation, which is a well-known and foundational reaction covered in most organic chemistry curricula. The presentation will focus on the first of three steps in the synthesis of a halogenation reaction of ethyl diacetoacetate. The experiment exposes students to the concept of green chemistry, which stresses the use of biologically benign reagents and the minimization of hazardous waste products. The compounds that the students will be synthesizing are called 3(2H)-furanones, which are structurally unique and resemble some natural products with known medicinal properties.

The Effect of Soil Water Levels on Soil Carbon Dioxide Emissions in Peatlands in Southeastern Virginia

Katrina Napora & Alyssa Robinson (Christopher Newport University)

Peatlands are characterized by deep accumulations of plant matter, which forms as a result of soil saturation and anoxia. The VA Department of Game and Inland Fisheries is raising water levels in the Cavalier Wildlife Management Area (CWMA) in southeastern Virginia. The purpose of this experiment is to determine the effect of four water level treatments on soil carbon emissions. We obtained 24 soil cores from 4 sites, 6 cores per site, at CWMA and CO₂ emission rates of the soil cores were measured every day for 22 days with a LICOR. The moist treatments exhibited higher carbon emissions than the saturated treatment, which suggests that a partial restoration of peatland hydrology at CWMA may inadvertently increase soil carbon emissions.

Analyzing Litterfall for an Estimate of Carbon Capture in Restored Peatlands

James M. Doyle & Christina Mirda (Christopher Newport University)

Peatlands capture carbon through both live biomass and contributions to soil organic matter, but have been ditched and drained. Hydrology at Cavalier Wildlife Management Area in Chesapeake Virginia is being restored. Our purpose was to determine the amount of carbon captured in two sites of similar vegetation makeup with differing hydrology. Litterfall samples were obtained from eight 0.5-m² elevated collection trays per site. Litter was dried for 24 hours at 100°C before sorting and weighing. Litterfall was higher at the wetter site; suggesting wetter sites are more likely to meet carbon capture goals.

Titanium with Sustained Release of Oxidized Dextran and BMP-2 for Inhibition of Bacterial Adhesion and Enhanced Bone Osseointegration

Andres Garcia & Guilherme Guimaraes (Hampden-Sydney College)

Bacterial infections and poor bone osseointegration of implants are the two main reasons for the failure of orthopedic implants. Previous investigations have focused on functionalizing the surface of implant with antibiotics to prevent bacterial infections and immobilizing bone proteins on the surface for enhancing osteoblast activities. However, very little attention has been paid for their control release. To address this issue, we investigated the use of heparin-delivery system immobilized on the implant surface for the sustain release of oxidized dextran that will prevent the bacterial adhesion and for bone morphogenic protein 2 (BMP-2) to increase bone cells activity to promote better integration of implant with bone.

SYMPOSIUM D

Teddy Roosevelt's Rough Riders or Leonard Wood's Weary Walkers: The First United States Volunteer Cavalry

David Sybers (James Madison University)

Theodore Roosevelt led the First Volunteer United States Cavalry in the Cuban War for Independence during the Spanish-American War of 1898. Roosevelt's Rough Riders were not as impactful on the war effort as popular history suggests. The regiment was well liked by the American public, but there was a sharp distinction between the popularity of the regiment and its overall impact. Roosevelt's imperialistic ideology and political motivations to go to war, the composition of the regiment, the political favoritism that the Rough Riders enjoyed compared to other regiments, the battle tactics of the regiment and conditions in Cuba, and the misconceptions surrounding the famed charge up San Juan Hill all are contributing factors to how the regiment was portrayed.

Charles Loring Brace and his Orphan Trains

Erin Carpenter (James Madison University)

After the War of 1812, immigration and the uneasy transition to industrial capitalism created an enormous wealth disparity between the wealthy and the poor. This gap was especially prominent in New York City. By 1849, there were approximately thirty thousand children living on the streets in poverty. At first authorities placed these children in prison, but as a result of Charles Loring Brace these children were relocated to other parts of the country becoming workers for farmers. Through the Orphan Trains, Charles Loring Brace set a platform for the success for the Children's Aid Society and the foster and orphan care system, which was embraced well into the twentieth century by every program seeking to help homeless and needy children.

The Story of the Lynchburg Mill

Ayla Hagen (Randolph College)

In 1888, a group of influential local businessmen opened a mill in Lynchburg, Virginia, which would be known simply as Lynchburg Cotton Mill (LCM). It was Lynchburg's third venture into the cotton textile industry, and the first to successfully capitalize on the cheap labor and transportation hub of the area. The mill remained operational until 1957 when it closed, divorcing five hundred fifty people from their jobs and in some cases from their homes. Very little is recorded about LCM, and most of the business records are sealed for seventy-two years from the mill's closing date. In my research of the mill, I compiled the available sources of information, and created a foundational history of LCM for future research.

Japonisme and Its Role in Indiana Williams' Life

Jessie Meager (Sweet Briar College)

With a study of a selection of Indiana Williams's artifacts, I have produced a more detailed understanding of her life, and put Sweet Briar's founder in the broader context of Japonisme among American families of the time. I studied three components: the Centennial Exhibition of 1876, where I hypothesize that Indiana bought a number of Japanese-related items; the art historical study of Japonisme among wealthy American families of the 1870s; and I have separated the artifacts in the Sweet Briar collection into four categories in order to connect our local history with that of a wider societal trend. Indiana Williams's artifacts can provide us with a case study of the influence of Japanese decorative arts in 19th century America.

SYMPOSIUM E

The Role of Character and Historical Recognition: A Visual Exposition of Charles B. Gatewood

Rachel Crowe (James Madison University)

Lieutenant Charles B. Gatewood, known for his role in the surrender of Geronimo, is a historical figure long forgotten by those who walk the streets of Harrisonburg today. The origin of this study is an examination of the relationship between current Harrisonburg residents and the history of historical figure Gatewood, whose local residence still stands today. Through examination of imagery, maps, and letters I have compiled research from which to select content for this screenprint series detailing Gatewood's historical role as well as the context surrounding him as it existed in the late 1800s and now. Gatewood diminished his own historical role when he chose to exhibit sympathetic character in a time when intolerance dominated relations with Native Americans.

Like a Stream from Mighty Water: The Fight for Civil Rights in Danville, Virginia

Lauren Oakes (James Madison University)

The story of the Civil Rights Movement in Danville, Virginia, is one that is vastly unknown, yet a spectacular piece of the Civil Rights Movement that shook the nation during the 1960s. Danville's identity as the last capital of the Confederacy severely heightened the tensions between white and black citizens of the city for the duration of the Danville movement, which lasted from 1960-1963. The movement came to a violent culmination in the heat of summer on June 11, 1963, when peaceful protestors were dispersed with fire hoses and subsequently beaten by police while trying to escape. Though they faced constant obstacles during the movement, the African American citizens of Danville were resilient in their fight for equal rights.

Unspoken Love at Sweet Briar College

Tristin Burke (Sweet Briar College)

Through the examination of evidence available in the Sweet Briar Archives, and interviews from alumnae, this study focuses on the previously unspoken intimacies shared between Sweet Briar women in the post-World War II era. This evidence, when contrasted with previous historical research, uncovers another dynamic of the southern "pedestal" in which women resided. The evidence also confirms there are but a few degrees of separation between the romantic friendships developed during the turn of the century and that of modern-day same sex relationships. Though the love shared between early Sweet Briar women was previously unspoken, the evidence available supports the argument that Sweet Briar College was and continues to be a safe haven for all who enter through her gates.

SYMPOSIUM F

The Chief Jewel of the Realm: Mary Tudor's Spanish Marriage and the Fall of Calais

Griffin Watson (James Madison University)

In 1558, the city of Calais fell to the French. The loss of Calais was catastrophic; with the fall of Calais, England lost an essential port of access to continental markets. Contemporary accounts described it as the worst blunder of foreign policy to ever befall England. They also overwhelmingly blamed the Queen, Mary Tudor, and her decision to marry Philip of Spain. The blame was not entirely unwarranted, as Mary Tudor's Spanish marriage marked the beginning of a new era of English foreign policy. It was an era where issues of national interest to Spain always took precedence over those of England. The research analyzes a variety of sources including personal correspondence, states papers, and published accounts.

The Oaklands Plantation: An Exploration of one Family's Significance to the Roanoke Area

Kerri Taylor (Roanoke College)

My work focuses on the influence of the Watt's family both in the growth of the city of Roanoke, and in the emergence of Northwest Roanoke, a previously segregated, now predominately black community. This particular family owned the largest plantation in the Roanoke Valley, known as Oaklands. My project explores the local history and public memory, or lack thereof, of the slave holding plantation, including oral histories which have exposed a lack of local knowledge of the plantation.

A Double Edged Sword: The Effect of Brine after a Slave Whipping

Andrew Liverman (James Madison University)

In her book Closer to Freedom: Enslaved Women & Everyday Resistance in the Plantation South, Stephanie M.H. Camp illustrates the dynamic relation between enslaved persons and slaveholders in regards to how slaveholders attempted to control where enslaved persons went and how enslaved persons used their bodies. Focusing on the latter claim, Camp suggests enslaved persons possess three bodies and each body is in perpetual conflict between each party. In this presentation, the presenter will give insight found in slave narratives on how brine applied after an enslaved person was whipped asserted control over an enslaved person's first physical body and also over the enslaved person's second mental body.

SYMPOSIUM G

Dorothea Lange: Capturing the Reality of the Great Depression and New Deal Era

Laura VanDemark (James Madison University)

Dorothea Lange's training in traditional pictorialist photography combined with her growing passion for documentary photography allowed her work for the Farm Security Administration (FSA) during the Great Depression and New Deal era to tell the stories of suffering Americans. While most well-known for her image entitled *Migrant Mother*, Lange's work focused on representing her subject(s) with dignity no matter the conditions surrounding them. Lange's attention to creating authentic images and detailed field notes recorded conditions of migrant farmers in the west and sharecroppers in the southwest. Her unique approach to the open ended FSA assignments allowed the FSA to use Lange's photographs as evidence for the need to remedy the effects of the Great Depression through New Deal programs.

The SA Generation and Its Relation to Fascism

Brick Ingle (Hampden-Sydney College)

The Sturmabteilung's growth must be accounted for to accurately assess why a person might strain relationships and lose work by joining a paramilitary, but also so the historian can capture how those most active in the fight to advance Nazism embodied the ideals for which they were fighting. To this end, there are two major factors which can help explain the rise of the SA: a pre-existing paramilitary culture, and the destabilization brought on by the Great Depression. As a direct consequence of these factors, and the ways in which the SA reacted to them, the regular rank and file of the SA was a poor reflection of fascism and Nazi ideology, even while projecting a key fascist image.

The Triangle Shirtwaist Factory Fire: A Shift in the Public and Industry

Lauren Obaugh (James Madison University)

Following the horrors of the Triangle fire, there was a massive shift in how the public began to not only view immigrants, but in how they viewed safety in factories. In fact several reports were created in order to try and set forth revolutionary factory safety laws to the New York legislature. Upon looking at both these Factory Investigation Commission reports and the rhetoric used in newspapers not only in New York but around the country, there was a clear shift from hostility to concern and a new wave of voices calling for worker safety.

Vos Parents Sont-Ils Chez Eux?: How American GIs Erased the Autonomy of French Women

Kayla Buckles (James Madison University)

During World War II, pre-existing misconceptions about the ideology of the French, the United States military's sexual propagandism of the European Theater of Operations, rationing of material goods and food, and a spoils to the victor mindset all contributed to the erasure of the humanity of French women. The printing of menus presenting French prostitutes and their most flattering attributes, the pejorative slang used to refer to French women, and the United States military's blatant refusal to curb GI sexual appetites, all contributed to erasing the autonomy of French women. Primary sources consulted include the battalion newspaper *Panther Tracks*, *Yank Magazine*, the *Army Issued Pocket Guide to France*, GI letters home and numerous memoirs.

SYMPOSIUM H

Institutionalized Subordination: Women's Roles in the Byzantine Church and the Suppression of Their Leadership

Maria Matlock (James Madison University)

This paper examines the evolution of women's roles within the Byzantine church, and the role of the institutionalization of Christianity on the evolution of these roles. In the early period of Christianity, when the religion was private and only practiced in the home, women were recognized as patrons and spiritual leaders. However, once Christianity was adopted by the empire and moved into the public sphere where men dominated, women's leadership came into direct conflict with the prevailing social order and gender roles of the empire. The resulting backlash eventually led to the exclusion of women from church leadership, and limited them to positions that subordinated them to men.

Dead of a Death Other than Their Rightful Death: The Roles and Rolls of Medieval English Coroners

Anna Davis (Sweet Briar College)

In medieval England, the duty of recording an unnatural death fell to the local coroner. With the help of a jury of twelve local men, he would inquire into the cause of death and take legal action if necessary. In addition to providing background on the roles of the coroner, this paper also presents findings concerning the nature of 'unrightful' deaths in 14th-century Oxford, based on an examination of surviving coroner's records for the city and surrounding county. For the project I analyzed over 150 cases, working with both printed and translated documents, and with some unprinted manuscript facsimiles, which I transcribed from the original medieval handwriting and translated from the Latin.

Coca Cola: A Case Study in the Industrialization of Kosher

Christian Ford (James Madison University)

For most of Jewish history, individuals prepared their meals in the home and thus could self-regulate the making of kosher food. But with the industrialization of food, this regulation was taken out of the home and into the factories. Rabbis had the tedious task of determining whether these new foods abided by the kosher laws one by one. Soon popular foods were either certified as kosher or kosher alternatives were made. But issues persisted as companies would accidentally use practices that broke the rules of Kashrut. Through the examination of advertisements and Teshuvahs, Coca Cola works as an example of the difficult transition of making secular foods kosher.

The Case of Odysseus and Beyond: Healing through Storytelling

Lauren Estell (Randolph Macon College)

Storytelling works as a method of healing both in the general sense and with combat veterans suffering from post-traumatic stress disorder (PTSD) in particular. The research begins with an analysis of storytelling and its use in a historical as well as modern context. This analysis is then used as a backboard to demonstrate how modern use of storytelling as a healing practice is not so far from the more traditional roles of storytelling. In conclusion, the following presentation will explain how storytelling can improve social and psychological problems within one's community. Existing programs that use storytelling as a treatment for PTSD, are also identified.

SYMPOSIUM I

The Structuration of American Education

Caroline Mason (James Madison University)

The American public education system absorbed and adopted, and then reflexively reinforced, the societal structure of an increasingly industrialized nation. Through the lens of the Structural Adaption Theory of Technology, based of Anthony Giddens theory, and Langdon Winner's "Do Artifacts Have Politics", this paper analyzes the American public school system and the values in which it promotes. From the historical viewpoint of Science and Technology, this paper focuses on the indoctrination of values that aggrandize and/or compliment industrialization and on the genderization of math, science, and technology, arguing that the public school system itself, like a factory, promoted "modern", industrial values and reinforced societal prejudices.

Deconstructing the Distracting Effects of Cellphone Notifications: Relationships Between Sleep, Cellphone Use, Physiology, and Attention

Katherine Richard & Alyssa Bower (Washington & Lee University)

Our study seeks to clarify the interactive relationships among sleep, cellphone use, physiology, and attention in a combined experimental and correlational design. Adolescent and parent pairs completed two assessments involving an online survey, completion of cognitive tasks, recording of heart rate and skin conductance, sleep monitoring, and cellphone usage monitoring. Physiological measurements, along with measurements of accuracy and reaction time, allowed us to assess attentional capture in response to cellphone notifications during a cognitive task. Actigraphy-based sleep monitoring, cellphone use monitoring, and a self-report survey allowed us to investigate relationships among experimental results and correlates such as subjective sleep quality, sleep latency, habitual sleep duration and efficiency, and compulsivity of cellphone use among other factors. Preliminary results will be shared.

Exploring Recent Stereotype Threat Interventions: The Start of a Meta-Analysis

DaZané Cole (Sweet Briar College)

Stereotype threat is an experience that negatively affects the performance of members of negatively stereotyped groups (Steele, 1997). Many researchers have designed and tested interventions to help impede and combat the effects of stereotype threat. The majority of these interventions focus on the individual and often place no importance on staying connected to a valued -- if negatively stereotyped -- ingroup. In this presentation, I will report the beginning phases of a meta-analysis (systematic review) of stereotype threat interventions. I categorized interventions by type (whether or not they required distancing from the ingroup) and prepared to compare the effectiveness of these two types.

SYMPOSIUM J

Atomic Reconstruction: The Atomic Bomb & US-Japanese Relations Post World War II

Ted Crawley (James Madison University)

After the United States dropped atomic bombs on Hiroshima and Nagasaki in 1945, many Americans believed that immediate surrender, democratization, and rebuilding of Japan were all that rose from the ashes. This, however, was not the case. To better understand the effects of nuclear fallout, the US launched what was supposed to be a cooperative endeavor between the US and Japan to study and observe bomb survivors' health. Prior research (Putnam, 1998.) indicates that misdirection, lack of coordination, and questionable observational methods caused the investigation to become mired in controversy. This paper analyzes how a misguided institution would socially and politically marginalize the Japanese people from their American occupiers and the lasting repercussions it would have between the two nations.

“The Struggle”: Examining the Birth and Origins of Hip-Hop

Nicholas Suk (James Madison University)

It is a common saying among hip-hop fans and artists alike that hip-hop was born from "The Struggle". This paper examines what "The Struggle" was. During the 1960s and 1970s, New York City was in a state of economic and social deterioration. Gangs and drugs had claimed the streets and violence was commonplace in the poorest boroughs such as The Bronx. In order to escape the daily dangers of the streets, much of The Bronx's youth turned to a less violent outlet: hip-hop. Out of the crumbled city, the crime-infested streets, and the drug-filled neighborhoods, hip-hop was created in order to help the youth thrive despite their environment. This paper draws upon interviews of hip-hop pioneers and past gang members.

LGBT+ Representation and the AIDS Crisis in American Theatre

Victoria Paige Jemmett (Sweet Briar College)

The AIDS Crisis terrorized Americans and the LGBT community throughout the 1980s. The wave of fear penetrated the people as research and AIDS clinics were set up to attempt to treat the disease. The LGBT+ community faced fear, and in some cases, hate from other citizens and community members. Misconceptions ran wild and lives were fundamentally changed. Throughout this, modern American theatre worked to tackle the issue. In this presentation, we will explore some of America's finest plays tackling the AIDS Crisis in America and the social, political, and cultural effects faced by those affected by the AIDS Crisis using theatre as our lens for understanding.

Nationwide Epidemic: Sexual Assault on College Campuses

Emma Whitten (James Madison University)

Sexual assault is a rampant issue on almost every college campus in America. For years this problem has remained underground, hidden away from the media. The 2015 documentary, the Hunting Ground, helped shed light on this issue by sharing the testimonies of victims and how their universities mistreated them as well as their cases. In this study, I examine how universities attempt to keep their rape statistics low in order to protect their own institution, while silencing so many victims which only perpetuates this issue.

SYMPOSIUM K

Design and Build a Low-Cost Automated System to Fabricate Polymer Thin Films

Rylee Runyon (Sweet Briar College)

Ionic self-assembly is a thin film fabrication technique where a substrate is submerged into charged solutions. In order to streamline the fabrication of these thin films, an inexpensive microcontroller based robot was designed and built. This robot is inexpensive (costs less than \$400) and easy to use. The robot design will be discussed in this presentation.

Assessing a Low-Cost Automated System to Fabricate Polymer Thin Films

Clara Rogers (Sweet Briar College)

A robot was built to fabricate layer-by-layer thin films. In order to assess the performance of the robot, polymer films of up to 30 bilayers (on 32 substrates) were made with the polymers poly(allylamine hydrochloride) and poly{1-[p-3'-carboxy-4'-hydroxyphenylazo]benzenesulfonamido]-1,2-ethandiyl} on microscope slides. Optical quality of the films were observed through photographs, scanning electron microscopy and UV-vis absorption spectroscopy. Absorbance of films was studied to find the relationship between film thickness and bilayer number. This data was compared to values in the literature to demonstrate successful performance of the robot. Robot dipped slides were compared to hand-dipped slides.

Digital Model of First-Year Pre-Scheduling

Taylor Samuels (Randolph College)

Every summer, the first-year students at Randolph College fill in surveys to show their preference in courses and housing. Pre-scheduling the first-year students' classes has been a time consuming manual task since it takes the complex considerations underlying and advisors' experiences. It is our goal to develop a software helping advisors to optimize the pre-scheduling process. The first phase of this program is to automatically assign First Year Seminar (FYS) sections to students and meet their highest overall satisfaction. The second phase of the project will produce a user interface where pre-scheduling advisors can interact with the software and pick courses for first-year students. The program will help the advisors to check class time-conflicts and verify prerequisite/placement requirements automatically.

Interactive Visualization of Activity and Location Data for Functional Assessment and Caregiver Effectiveness in an Alzheimer's Population

Adam Nguyen (Randolph College)

The student researcher will build an interactive web application that allows clinicians and scientists to visualize and interact with data collected by our Functional Monitoring system. This system uses computing devices (e.g. cellphones and smartwatches) to measure how individuals pattern and localize their moment-to-moment activities in the home and in the community. This kind of data can be classified into time series representations of important behaviors and can provide important prognostic and therapeutic information about the patients and their caregivers. However, making this data easy to understand and manipulate is necessary for this data to be used most efficiently and effectively by clinicians and other medical scientists. Building a user-friendly and interactive data viewer is the goal of this project.

SYMPOSIUM L

“They Say that Freedom is a Long, Long Struggle”: The Mississippi Freedom Summer Project

Emma Appleton (James Madison University)

This paper investigates the Mississippi Freedom Summer Project of 1964 and argues that the project drew national attention to the lives and suffering of African Americans in Mississippi. The project made national headlines after a cooperative effort by organizations like the Student Nonviolent Coordinating Committee and the Congress of Racial Equality bussed one thousand northern, white, college-student volunteers to run summer schools and voter registration drives for disenfranchised African American communities in Mississippi. The paper explores how retaliation and violence from the southern, white community towards the summer project brought extra press coverage to Mississippi. The publicity of the project helped the rest of America to see and support change for their suffering African American brothers and sisters in Mississippi.

Brain Drain: The Iranian Revolution and its Connection to Human Capital Flight

Evan Slupe (James Madison University)

This paper examines how the Iranian Revolution of 1979 and the formation of an Islamic Republic influenced a diaspora of educated persons from Iran. While many educated persons in Iran originally supported the revolution, they did not anticipate the social and political environment that the new regime under Khomeini would create. Religious persecution and social tensions between these educated persons and their Iranian peers led to a brain drain out of Iran.

To March or Not To March?

Lisa White (Randolph College)

Millions of people marched in the United States on January 21, 2017. Why? What allowed people to attend? What is activism? Are there generational differences in activism?

The Meaning of Political Mobilization: Media Construction of Public Opposition to the Trump Administration

Alexandra Wieczorek & Lauren Moore (Randolph College)

This project intends to answer the question, “How does a mass social movement organized in opposition to a political agenda take on meaning in public consciousness?” Specifically, we intend to use organization against the Trump administration to identify the relationship between what a “negative” social movement means to participants and how it takes on public meaning. We will focus on how the identity and aims of that movement are constructed in the public consciousness through representation in broadcast and print news media. This projects seek to draw out how a movement of radically different activists and aims takes on a public identity and the democratic implications of the process by which the news media tell the story of that movement.

1. Exploring Personality Types as Predictors for Narcotics Anonymous Outcomes

Kelsie Allison (Christopher Newport University)

There has been a rise in drug use and overdoses in the United States, which has led to a powerful epidemic. This paper configures a prediction model to understand the current disease of addictions observed in the USA. This model provides many factors that affect addicts' ability to stay sober through Narcotics Anonymous, such as: neuroticism, extraversion, and agreeableness. Several hypotheses were generated: (a) higher neuroticism would lead to no significant decrease in relapse rates, (b) greater extraversion would lead to a significant decrease in relapse rates, (c) higher agreeableness would lead to a significant decrease in relapse rates. This paper's primary goal is to explore how specific personality characteristics determine addicts' preferred method of rehabilitation, specifically with Narcotics Anonymous.

2. Make or Break It: A Coach's Psychological Effect on Players

Jaime Arbesfeld & Kyle Darmstead (Christopher Newport University)

Coaching styles are vital to the development of athletes throughout their lives. There are numerous approaches coaches use to mentor players through leadership, parenting, and teaching. The purpose of this paper is to examine these approaches from a theoretical perspective. By identifying underlining theories coaches use will allow researchers to better assess athlete performance and psychological health. Alternatively, the psychology of the athletes themselves may play a role in how coaches select a coaching approach. Some athletes respond differently than their teammates to various coach's methods. This paper renders a theoretical model displaying the intricacies of coach-athlete relationships and interactions toward performance effectiveness.

**3. Intraoperative Awareness and Risks of General Anesthesia:
A Literature Review**

Summer Bledsoe & Madison Packer (Christopher Newport University)

More than 40 million people receive anesthesia each year in North America alone (Orser, Mazer, & Baker, 2008). Intraoperative awareness is defined as a patient's unexpected recall of events that occurred during anesthesia (Orser, Mazer, & Baker, 2008). Awareness is uncommon and likely is dose related; however, the consequences can be severe (Ghoneim, & Weiskopf, 2000). The goal of this literature review is to assess the methods used to understand and prevent intraoperative awareness and to learn the risks of anesthesia. Research has found that multiple exposures to anesthesia before the age of 4 could potentially have an effect on a child's neural development (Wilder et al., 2009). Future research should study methods to reduce preoperative anxiety in children.

4. The Relationship between Psychopathy and Schadenfreude

Lynley Burton (Christopher Newport University)

Psychopaths are known to be callous and unemotional. Schadenfreude, which is the delight in other's misfortune, may result from diminished empathy. The purpose of this study was to determine the relationship between psychopathy and three sub-components of schadenfreude: physical schadenfreude (enjoying other's pain), emotional schadenfreude (enjoying other's embarrassment), and justice schadenfreude (enjoying retribution). Psychopathy and schadenfreude were measured among students enrolled at a mid-Atlantic liberal arts university. Results indicated that there was no relationship between psychopathy and physical or emotional schadenfreude. However, psychopathy and justice schadenfreude approached significance, indicating a relationship between the two factors. The relationship could be due to the heightened level of competition and envy exhibited by psychopaths and their resulting desire for justice and retribution.

5. The Genetic Diversity of Apple (*Malus pumila*) Varieties

John Christman III (Christopher Newport University)

The ever-increasing demand for food has led to developments of high crop production methodologies without consideration of biodiversity. Genetic diversity is an essential part of a species' aptitude to adapt to the evolving challenges that face them, such as pests, diseases, and climate change. *Malus pumila*, the domestic apple, is produced via grafting, a process of cloning that does not promote genetic variation in apple populations. This research assesses the genetic diversity that exists across different apple cultivars, but also within apple cultivars. Preliminarily, diversity appears across apple varieties and there are even cases of differences between apples of the same cultivars from different orchards which suggest somatic mutation. Conversely, initial data suggests no diversity exists within varieties, but more analysis is needed to explore this.

6. Fading Affect Bias and the Presidential Election

Jodi Cleaver, Thomas Adesso, Rhianan Banks, Briana Bouldin, Hannah Brown, Spencer Dunlap, Kyle Horowitz, Crystal Singleton, & Taylor Tomas (Christopher Newport University)

Negative emotions fade more over time than positive emotions, also known as Fading Affect Bias (Walker, Vogl, & Thompson, 1997). This study examines FAB and the 2016 Presidential Election. The survey examined time spent consuming media and emotions regarding the Election, another political event, and two non-political events. Our hypotheses are that FAB will be greater for negative events than positive events, people whose party won the election will show greater FAB for political events than non-political events, and that people whose party lost the Election will show no FAB. Our results indicate that FAB is greater for non-political events, and that liberal voters only showed FAB for non-political events. Our second and third hypotheses were supported.

7. Using Artificial Seagrass to Study Restoration

Elizabeth Exline (Randolph College)

Seagrass populations are declining worldwide and the loss of this ecosystem engineer has implications for everything from fisheries to climate change. Artificial seagrass beds could be a powerful tool in understanding how these ecosystems function and in developing improved methods for restoration. This summer, we analyzed and constructed artificial seagrass beds for a pilot study. These beds can help us understand conditions for seagrass growth and the physical effects of seagrass on ecosystems.

8. Examining the Effectiveness and Usefulness of CDC's "Public Health Communication Products": A Psychological Analysis

Lydia Hemmerly (Christopher Newport University)

This review investigates the complexity of developing public health communication products (PHCP). One purpose of PHCP is to create easily understood health communications. Specifically, we review the guidelines set by the Center for Disease Control (CDC) examining how public health departments implement the standardized protocols. The CDC published the "CDC Clear Communication Index" to establish guidelines to help make PHCP clear, concise, and effective. The index uses 20 items for examining the communication effectiveness of PHCP. By standardizing a template for PHCP there is a better chance that announcements will reach the communities at which they are directed. Further research will need to be conducted to analyze how effective these guidelines are and whether health agencies are using them.

9. Effects of Being an Only Child or Having Siblings on Children's Social and Emotional Development: A Literature Review

Mary Jobe & Amanda Mathis (Christopher Newport University)

The relationships children have with others impacts their social and emotional development. This raises the question of how growing up with siblings influences a child. This literature review examines five studies' results. Our findings indicate several disadvantages experienced by only children. While children with siblings better coped with negative situations by using their siblings as a buffer against stressors, only children lacked this buffer and were less liked among peers and were usually more aggressive and victimized by the group (Lockwood, Gaylord, Kitzmann, & Cohen, 2002). However, only children have the advantage of having higher personal expectations for themselves in social performance (Meheshwari & Jamal, 2015). Further research should study the longitudinal effects of only-children versus those with siblings throughout adulthood and cross-culturally.

10. Face-Touching as a Potential Self-Infection Mechanism: A Social Mimicry Approach

Elizabeth Kerner (Christopher Newport University)

Face-touching, which involves a person touching or rubbing his face with his own hand, greatly increases the spread of pathogens from an individual's hand to their face through various critical zones (e.g. nose, eyes, mouth). These pathogens may contribute to the development of viruses and infections. An important social factor to be considered is behavioral mimicry, which involves the unconscious matching of physical movements between individuals. Studies have shown that individuals who find each other attractive tend to mimic each other's movements. A major goal of this paper is to determine whether social mimicry impacts the amount of face-touching a person engages in, therefore increasing the likelihood of introducing pathogens into their system.

11. Comparing CDC Hand-Washing Recommendations with Typical Hand-Washing Techniques of Adults

Caitlyn McCormack (Christopher Newport University)

Handwashing is vital in the prevention of illnesses caused by bacteria that people come into contact. While the duration and techniques used during handwashing are important to the disinfecting process, proper practices are widely debated. The Center for Disease Control recommends that a person wash their hands in five steps (Wet, Lather, Scrub, Rinse, Dry) during which the person should scrub for approximately twenty seconds. The aim of this paper is to examine the relationship between a person's hand washing techniques and the schema they follow each time they wash their hands. A major goal of this paper is to determine how to better educate people on the proper handwashing techniques to prevent the spread of disease.

12. Analyzing Virtual Reality as an Education Tool

Dung Nguyen & Avisha Shah (Randolph College)

Recent developments have made virtual reality an accessible and affordable technology for the average consumer, especially students who would want to improve learning with accessible educational applications. The current study examined potential benefits of using immersive learning environments in learning concepts in human anatomy and GRE vocabulary. Study results support that virtual reality improves learning outcomes in human anatomy. Participants reported to feel more in control, more aroused, and more engaged while learning in the immersive environment. Virtual reality did not improve learning abstract materials, such as vocabulary words. Together, these findings suggest that virtual reality may improve efficiency in encoding information, thus benefiting student learning outcomes.

13. Examining How ADHD Is Influenced by Different Learning Styles: A Theoretical Approach

Christian Rothlisberger (Christopher Newport University)

Attention deficit/ hyperactive disorder (ADHD) is a disorder that influences many people throughout the world. This disorder affects the frontal region of the brain that is involved with attention and focus. ADHD is often detected in children that have difficulty staying on task in a classroom setting. In recent research, there is a movement to stop viewing ADHD in a negative light and start using positive psychology to nurture and encourage the strengths of people suffering from this mental disorder. The present paper will illustrate and explore the complex variables important to understanding best practices for educating ADHD children. A theoretical framework is discussed as a means for testing and assessing variety educational ADHD programs.

14. Resilient Randolph: Analyzing Risks and Establishing Measurable Strategies for Campus-Community Climate Resilience

Arnav Upadhyay (Randolph College)

Our communities are incorporating resilience strategies as essential elements of climate action planning to help prepare for the adverse impacts of climate change. In January 2017, President Bateman made Randolph College a signatory to the Resilience Commitment as part of the President's Climate Commitments by institutions of Higher Education. This obligates Randolph to work with our central Virginia community to develop goals and strategies to address resilience as part of climate action planning. In summer 2017, we researched projected regional climate change impacts, and began to develop adaptation and mitigation strategies that identify risks and promote community resilience. In the coming year, we will host a Community Resilience Building Workshop for various community stakeholders.

15. Religion and Pet Loss

Anya Walker & Zachary Wilson (Christopher Newport University)

People can have strong relationships with their pets. The question is raised of how people deal with the loss of their pets. This literature review investigates how an individual copes with pet loss through religion. Our findings demonstrate that when a pet dies people will often turn to religion as a way of coping (Lee & Surething, 2013; Pargament, Smith, Koenig & Perez, 1998). Although some bereaved pet owners use religion in a positive way, others drew upon negative forms of religious coping (Lee & Surething, 2013). Continuing research should focus on what effects lead people to negative forms of religious coping versus positive.

16. Lipid Fingerprinting of Ethnic Hair

Drucilla Williams (Randolph College)

Ethnic hair is divided into three categories – African, Asian and Caucasian. The lipids associated with each hair type are different and can be extracted and identified using soxhlet extraction and Thin Layer Chromatography (TLC) respectively. This research aimed at identifying lipids and optimizing lipid extraction from hair samples of each ethnic group using the methods mentioned above and various staining protocols. Distinct differences were seen between each hair type when these methods were employed.

17. Investigating the Meat Paradox and Cognitive Dissonance in Eating Meat

Haley Wofford (Christopher Newport University)

In this literature review, I will explore recent studies which find people experience discomfort knowing the meat on their plate is associated with the death of animals. Meat eaters often face cognitive dissonance through their inconsistency of eating meat but not liking to hurt animals. Research has named this cognitive dissonance as the “Meat Paradox” which occurs when individuals like to eat meat but do not want to kill animals (Kunst & Hohle, 2016). Recent studies show people are less willing to eat meat after seeing the processes of meat production. Different strategies exist to reduce this dissonance but their effectiveness depends on social and cultural contexts (Bastian & Loughnan, 2017).

18. Analysis of Nitric Oxide’s Neuroprotective Role in a Zebrafish Model of Motor Disorders

Amber Woodard (Virginia Military Institute)

This study intends to suggest a superior method of treatment to aid in the recovery of zebrafish chemically induced with the neurotoxin 6-OHDA to mimic Parkinson-like phenotypes. The experimental design includes our approach in statistically analyzing the phenotypic responses to various treatments through the administration of chemicals known to alter specific nitric oxide pathways which may potentially be involved with the properties found in some neurodegenerative disorders and treatments. Experiments in this study have explored the chemical alteration of various neuronal pathways and have offered promising data thus far through the inhibition of neuronal nitric oxide synthase and S-nitrosylation pathways. These results may have important implications in regards to degenerative motor disorders within the nervous system.