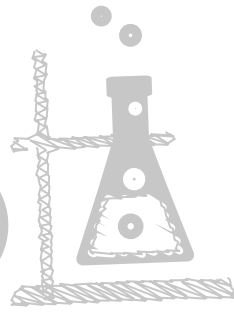
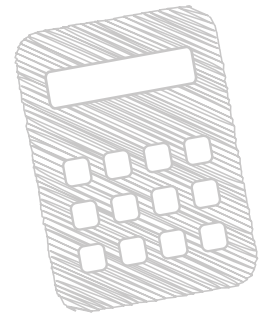




KNOWLEDGE



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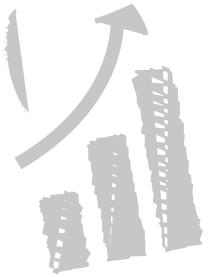


DATA

Mid-Atlantic Regional Conference  
for Undergraduate Scholarship

# MARCUS

AT RANDOLPH COLLEGE



DEVELOPMENT



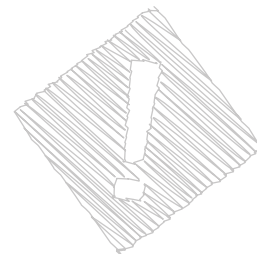
TESTING



FACT



PRACTICE



RANDOLPH  
COLLEGE

**SATURDAY, OCTOBER 24, 2020**

# *Welcome to the 22nd MARCUS!*

We at Randolph College are proud to be hosting you for this fun and rewarding event. Whether you are a presenter, a faculty sponsor, guest or auditor, we are pleased that you are participating in our online conference!

The Mid-Atlantic Regional Conference of Undergraduate Scholarship (MARCUS) was founded and hosted by Sweet Briar College from 1999-2018. Since its inception, MARCUS has attracted students from colleges throughout Virginia and surrounding states, who present their research in sessions streamed online. "Going virtual" allowed participants from California, District of Columbia, Louisiana, Maryland, North Carolina, Pennsylvania, and West Virginia to join us this year.

The conference atmosphere is one of lively inquiry in which the student researchers are the experts, presenting to an audience of their peers. Unlike many conferences, MARCUS is purposely interdisciplinary, with an emphasis on the intersection of disciplines across the liberal arts spectrum. For instance, one presentation session may include students in history, economics, political science and anthropology, all sharing a research interest in globalization. In another session, the common topic may be preserving species habitats and include presentations in biology, environmental studies and philosophy.







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# abstracts

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# schedule

## **9am, Friday, October 23:**

Presentations will be available for viewing by the public

## **10am until 2 pm, Saturday, October 24:**

Presentations will be open for questions and responses with presenters

## **5 pm, Friday, October 30:**

Presentations will no longer be available for viewing

# presentations

## **Camille Alexander '22**

Howard University-Annenberg Honors Program

Advisor: Dr. Leelanee K. Malin

Oral

### ***The Longest Yard: Pygmalion Depictions of Black Athletes***

In this paper, I question and confront the representation of Black athletes in media. The antagonization of this group in both print and digital media is a direct offshoot of racism and white supremacy. From slavery to the present, black men and women have been collectively "othered" and vilified for lacking the pristine image and behavior society ascribes to whiteness. The ideal representation for Black athletes, male and female, is accurate, empathetic, and humanistic representation. The reality is that black athletes are depicted in a way that casts them outside the purview of polite society (Coates, 2018, p.74). The consequences of such inaccurate, un-empathetic, and non-humanistic portrayals, are a negative public opinion of black athletes and increased sanctions on black athletes. Allen Iverson's fashion choices and hairstyles on-trend with early 2000's rappers caused then-NBA commissioner David Stern to implement a league-wide dress code. Mere hours after his death, Kobe Bryant's 2004 rape acquittal was discussed on major new sources as if he were found guilty. To ask "What are the effects of negative press coverage on the way black athletes are publicly perceived?" is to delve into the ongoing practice of othering and exclusion that has affected black athletes from Tommie Smith and John Carlos to Serena Williams. I also pose the question, "What impact does negative press coverage have on the performance of black athletes?"

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## **Bijou Barry '23**

Sweet Briar College

Advisor: Dr. August Hardy

Oral

### ***Diversity in the Wine World***

We will interrogate the role of government control, frameworks, and ideologies utilized to shape consumer tenets, and preferences, in the wine industry. Hierarchical and patriarchal systems of structure, power, and governance, influence market opportunities and trends that negatively affect diversity in winemaking. We will analyze the impact of a free-market economic approach relative to a robust, regulatory framework on the sectors of agriculture, manufacturing, and trade, in the wine world. We intend to focus on the adaptability of diversity within the wine industry from the viewpoints of race, gender, age, and class, to varietals, with a special interest in the Norton wine grape varietal, a Virginian indigenous wine grape that won the international exhibition at the Vienna World's Fair of 1873. We will apply philosophical theories to examine the dichotomies that exist between the identities of a consumer, and a citizen, and the implications on wine consumption and regulation.

## **Ingrid Kalwitz Blanco '23**

Sweet Briar College

Advisor: Dr. Dwana Waugh

Oral

### ***Minimum Effort: The process of School Desegregation in Asheville, North Carolina***

The process of school desegregation in Asheville, North Carolina, failed to implement policies and practices that supported African American students, resulting in ramifications to the current public school system. The school board made hurtful decisions for the African American community. Those in leadership positions did not respond to the demands made by student leaders. Priorities were on surface-level solutions that did not fix fundamental integration issues, in order to maintain amity. In Asheville City Schools, the effects of a failed integration plan are ongoing and destructive.

**Kathleen Brett '22**

James Madison University

Advisor: Dr. Raymond Hyser

Oral

***Burr: An American Conspiracy***

Former vice president and political figure Aaron Burr was one of the most ambitious and controversial Americans of the early 18th century. After killing Alexander Hamilton in a duel, he plotted against the United States in order to create his own country. This plot became known as the Burr Conspiracy. Within this conspiracy, Burr consulted not only the Spanish for support, but America's rival, England. Burr's detailed schemes against his own country served as enough to arrest him under the charge of high treason. The trial proved to be crucial in American history, as the definition of high treason was greatly debated. Yet, the evidence within the case of United States v. Burr, was not enough to convict him. Burr's legacy remained one of deception and ambition to make his mark. Many sources were consulted for this paper, including letters from Jonathan Dayton and Documents Concerning the Burr Conspiracy, 1806-1808.

**Joshua Bulavko '22**

Randolph College

Advisor: Dr. Gerry Sherayko

Oral

***Historic Preservation of Rivermont Avenue and Beyond***

Rivermont Avenue of Lynchburg, Virginia, is filled with cultural, architectural, and social histories. In this presentation, I will review the work of my 2020 Summer Research Project that I completed with Dr. Gerry Sherayko. I will cover the process of revising the ownership histories of each property on Rivermont Avenue, as well as the composition of various narratives from people who worked and lived on the avenue. It is important to share their stories, as well as spread the importance of historic preservation, so that we may get a better sense of how things once were. This will be crucial in addressing the various social and cultural changes that may be on the horizon.

**Alexandra Buswell '22**

James Madison University

Oral

***Frances E. Willard: A Temperance Crusader***

From the mid 1820's to the year of 1920, temperance societies emerged, as an organized effort by middle and upper-class women, who wanted to limit the consumption and production of alcohol in the United States. Through the development of temperance organizations, women were able to advance abstinence legalization that shifted women's roles within society. Previous research in this topic rely on sources of information from the revival in evangelism during the Second Great Awakening, which increased church membership through mass revival meetings. These gatherings were also known as camp meetings that were held in small towns, as well as large cities, and that led to an increase in the number of converts for the Baptists and Methodist churches. Frances E. Willard, the leader of the Women's Christian Temperance Union, linked numerous social reforms to the temperance movement such as women's suffrage, home protection, and labor legislation, successfully thrusting America toward Prohibition.

**Abigail Cahill '21**

Sweetbriar College

Groundwork: Forest Farming and Mushroom Intercropping

Advisor: Dr. Lisa Powell

Oral

***Groundwork: Forest Farming and Mushroom Intercropping***

Research investigating the inter-planting of mushroom species with commonly cultivated vegetable crops has suggested that mushrooms may have an effect on increasing yield on their vegetable counterparts (Hart et. al, 2002; Stamens, 2000, 2008; Taschen et al, 2020). Potential crops included corn, peas, kohlrabi, peppers, heat-tolerant lettuces, and heat-tolerant brassicas. We selected at least two companion crops for this study. Wine Cap, Elm Oyster, and potentially Morel mushrooms are most ideally suited for our applications. We selected from these mushroom for use in this project (Strassberg, 2017; Adamant, 2019; Stamens, 2000.) My research was an investigation of potential symbiotic agricultural relationships between inter-planted mushrooms and vegetable crops. My central research question: how does mushroom inter-planting affect vegetable cropping systems, including not only direct impacts on plant growth and yield, but also soil quality and composition? Using the outdoor garden space at my home, I conducted small-scale trials, and sent soil samples to the Virginia Tech Soil Lab for analysis. Dr. Powell mirrored my experimental design on the Sweet Briar Campus, with a small-scale trial there as well. Additionally, I conducted a literature review and site analysis as part of a preliminary assessment of the potential for mushroom cultivation and other types of forest farming on the Sweet Briar Campus.

**Griffyn Caires '22**

Longwood University

Advisor: Dr. Brian Bates

Oral

***Archaeology at Eyreville (44NH0507): Analyzing Tobacco Pipes to Estimate Site Occupation Dates***

We examined a collection of tobacco pipe fragments acquired from the Eyreville archaeological site in Northampton County, Virginia. The Eyreville site was a 17th-century English colonial site and one of the oldest known on the Eastern Shore. The researcher utilizes a variety of different pipe stem-bore dating methods on both clay pipes imported from Europe and clay pipes made locally in Virginia. Informed by the age of each class of pipe, the data will help researchers understand how people at Eyreville interacted with the greater Chesapeake Bay region over the course of the site's occupation.

**Natalie Carroll '21**

Sweet Briar College

Advisor: Dr. Dwana Waugh

Oral

***Red Scare and Black Freedom Struggle: How Cold War Communism Positively Influenced the Civil Rights Movement***

"There is no system more corrupt than a system that represents itself as the example of freedom, the example of democracy...when you have citizens of this country who have to use bullets if they want to cast ballots." Malcolm X argued on April 8th, 1964, that the United States was hypocritical for calling itself the leader of the Free World, and advocating democracy, when African Americans at home were living under Jim Crow. In the midst of the Cold War, he brought to attention the international landscape of minorities being oppressed by American imperialism. By doing this, he made a connection between the domestic Civil Rights Movement and the fight for independence overseas. The international context of the Cold War brought light to racial inequality in America, as well. Cold War Communism positively influenced the Civil Rights Movement by bringing light to the hypocrisy of American democracy through pro-Communist propaganda. By doing this, the Soviet Union was able to influence the politics of newly independent nations in Africa and Asia. Throughout the Cold War, the tension between the American democratic ideology and systemic racism became evident and as a result, the rest of the world, not just pro-Communist nations, began to put the United States under pressure by reporting closely on its racial climate. While the United States advocated for freedom under democracy, its government did nothing to achieve racial equality until Soviet propaganda pointed out that African Americans were living under a white supremacist regime.

This is a political history examining the motivations of state/national leaders and how Cold War policies impacted people on the ground. It also engages with diplomatic history by studying the connections between nations. For example, the negative images of anti-Civil Rights Movement protests by Southern states pushed pro-Communist nations to point to the United States' hypocrisy. These images did not appear to be democratic. These nations used cartoons and other images to illustrate the United States' anti-democratic position toward civil rights activists. This helped to influence countries in the process of decolonizing to support Communism.

**Samantha Chambers '22**

Shenandoah University

Advisor: Dr. Scott King

Oral

***What's your Snapscore? Correlations to Narcissism, Anxiety, and Personality***

Snapchat is a popular social media network, but is considerably less researched than other more established platforms. The purpose of this study was to examine how the amount of Snapchat use correlates to personality, narcissism, and anxiety. We hypothesized there would be positive correlations between Snapchat usage and narcissism, extraversion, and anxiety. Using data from a convenience sample of participants recruited from Amazon Mechanical Turk (a crowdsourcing site), Pearson's correlations and t-test analysis provided insight on these connections. Pearson's correlations showed significant positive correlations between Snapchat usage and narcissism, anxiety, and extraversion, but t-test analyses revealed that the users with low Snapscores had higher narcissism, anxiety, and extraversion. These conflicting results are discussed.



**Jenna Curia '22**

**Meredith College**

**Advisor: Dr. Cynthia Edwards**

**Oral**

***A Qualitative Analysis of Attachment and Resilience Among the Adult Children of Multi-Substance Dependent Mothers***

A bond with a reliable, emotionally stable individual, typically a parent, formed during infancy and sustained throughout adulthood is important in predicting resilience. The present study examined disrupted attachment patterns among (N = 26) adults, ages 19-35, whose mothers struggled with opioid-addiction, substance abuse, and mental-health challenges that were present during the prenatal period and sustained throughout their children's lives. A series of qualitative writing prompts examined participants' sense of connection to their biological mothers and how it impacted developmental transitions. Findings include a decreased sense of connection, higher levels of responsibility and anxiety, feelings of self-blame, fear of abandonment, and relationships with influential adults outside of the home during childhood and adolescence. One participant said, "I believe the ones who love us like a mother - unconditionally, persistently, freely - those are the relationships that matter the most." Those relationships do not always take place between a mother and her biological child. Qualitative analyses are ongoing.

Cairns, R. B., & Cairns, B. D. (1994). Lifelines and risks: Pathways of youth in our time. Cambridge University Press. Cicchetti, D., & Garmezy, N. (1993). Prospects and promises in the study of resilience. *Development and Psychopathology*, 5, 497-502. Daigle, K.M., Heller, N.A., Sulinski, E.J., et al. (2019). Maternal responsivity and oxytocin in opioid-dependent mothers. *Developmental Psychobiology*. 2020: 62, 2135. Fraley, C.R., & Davis, K.E. (1997). Attachment formation and transfer in young adults close friendships and romantic relationships. *Personal Relationships*, 4, 131-144. Hazan, C., & Shaver, P.R. (1994). Attachment as an organizational framework for research on close relationships. *Psychology Inquiry*, 5, 1-22. Moutsiana, C., & Fearon, P. et al. (2014). Making an effort to feel positive: insecure attachment in infancy predicts the neural underpinnings of emotion regulation in adulthood. *The Journal of Child Psychology and Psychiatry*, 55:9, 999-1008.

**Sabrina Daglish '21**

**Loyola University Maryland**

**Advisor: Dr. Christopher Thompson**

**Poster**

***Acai and Aronia Inhibit Promyelocytic Differentiation into Neutrophils***

Acai and Aronia berries are considered complementary, alternative medicines that are purported to have immune boosting effects. These berries are high in antioxidants, which supposedly give them anti-inflammatory, anti-cancer, and anti-viral effects. More research needs to be done on these berries in order to determine the exact effects they have on the immune system, specifically neutrophils and how they differentiate. The results suggest that both DMSO and DMF can induce differentiation of HL-60 cells into neutrophils, but DMF is a better differentiator than DMSO. This was shown from measuring actin rosettes and phagocytosis as differentiation markers in confocal microscopy, and by bacterial killing ability in the microbicidal assay. The confocal results suggest that DMSO and Acai treatment might slightly decrease HL-60 differentiation into neutrophils, but this might not be a significant difference. Aronia might also decrease HL-60 differentiation into neutrophils. However, Aronia could also be cytotoxic to the cells or induce differentiation so quickly, that the cells have apoptosed by the fifth day of differentiation. Overall, Acai and Aronia might decrease HL-60 differentiation due to the decrease in actin rosettes and phagocytosing abilities with treatments.

**Tara E Darcy '21**

**Shenandoah University**

**Advisor: Dr. Scott King**

**Oral**

***TikTok and Its Impact On Body Image***

TikTok is a social media platform that is widely used. I evaluated the impact of watching different genres of TikTok videos that involved body image and self-esteem. I hypothesized that participants watching TikToks with sexualized content would score lower in both measures than those who watched funny TikToks. The results showed that there was not a significant difference between the two groups in either self-esteem or body image. However, there was a stronger correlation between self-esteem and body image in the group that watched the sexualized TikToks compared to the group that watched funny TikToks. This study could be expanded to other genres of TikToks to examine if their content has an impact on self-esteem and body image.

**Dagim Desta '23**

Randolph College

Co-authors: Jacob Katz, Jackson Powell, Nicholas VaZquez, Dr. Katrin A. Schenk

Advisor: Dr. Katrin A. Schenk

Oral

***An Investigation of the Efficacy of Current Machine Learning Techniques for the Analysis of Mouse Ultrasonic Vocalizations***

We analyzed the efficacy of several machine learning-based codes for the detection and analysis of mouse ultrasonic vocalizations (USVs) using upwards of four terabytes of sound data collected by Dr. Schenk and her collaborators over the last ten years. USVs in these data, called calls, have been identified using detection and analysis code that Dr. Schenk's cohort has written. The detection and analysis of these USVs have been verified using the gold-standard by-eye method in which an expert looks through a frequency versus time plot (called a spectrogram) looking for mistakes in detection. These verified USVs will serve as the testbed for several, machine learning-based call detection codebases, the "Mouse Ultrasonic Profile ExTraction (MUPET)" code, which uses an unsupervised learning algorithm to detect calls, an algorithm based on supervised learning (unnamed), and DeepSqueak, which is a neural network-based method.

**Taylor Dominique**

James Madison University

Advisor: Dr. Raymond Hyser

Oral

***The Lynching of Italians in New Orleans***

Few could have imagined that the murder of a New Orleans police chief would lead to the brutal murders and lynching of eleven Italians, but that is precisely what happened on March 14, 1891. The murder of Police Chief David Hennessey garnered national newspaper attention, and the subsequent lynching even more. Nineteen Italians were convicted for Hennessey's murder, and were either acquitted, never tried, or a mistrial was called. This infuriated many citizens of New Orleans, who came together the next day by the thousands, to storm the prison where the accused were held. The event led to a rise in anti-Italian sentiment that stretched across the United States.

**Jessica Donahue '22**

Longwood University

Advisors: Steven Hoehner, Longwood University Ben Li, Ningbo University

Oral

***The Maximum Surface Area Polyhedron with Five Vertices Inscribed in the Sphere  $\mathbb{S}^2$*** 

We analytically determine the optimal placement of five points on the unit sphere  $\mathbb{S}^2$  so that the surface area of the convex hull of the points is maximized. We show that the optimal polyhedron is a triangular bipyramid with two points placed at the north and south poles and the other three points forming an equilateral triangle inscribed in the equator. This result confirms a conjecture of Akkiraju, who conducted a numerical search for the maximizer.

**Hannah Edwards**

Randolph College

Co-author: Nicole Heddings

Advisor: Dr. Elizabeth Gross

Oral

***Factors That May Predict Pandemic Related Behavior***

In the current COVID-19 global pandemic, it is imperative to understand factors predicting quarantine, mask-wearing, and social distancing behaviors. Pandemic related behaviors represent a complex array of individual differences, including but not limited to morality, risk-taking, and disgust sensitivity. For example, mask wearing and quarantining is framed as a moral responsibility to protect the health of others, while hand washing and social distancing may represent our own risk-tolerance for our own health outcomes. Previous research demonstrates that individuals low in risk-tolerance and high in disgust-sensitivity are more likely to judge moral scenarios more severely (Schnall, 2016). Furthermore, age increases the risk of negative health outcomes with COVID-19 infections, and previous research suggests that differences in political party affiliation are related to ascribing to different moral values (Graham et al., 2012). As such, the current study investigating whether age, political party, and self-reported risk-tolerance, disgust-sensitivity, and moral foundations predict pandemic related behavior. First, results suggest that men and those who identify as conservative were less likely to engage in restrictive pandemic behaviors ( $F(4,51) = 5.16, p = .001, \eta^2 = .29$ ). Second, individuals high in disgust-sensitivity, and low in risk-tolerance were more likely to engage in restrictive pandemic behaviors ( $r = -.21, p = .046$  and  $r = .24, p = .037$ , respectively). Furthermore, those that value the moral fairness subscale were less likely to engage in risky pandemic-related behaviors ( $r = .24, p = .025$ ). These results suggest that both trait and individual differences may be useful in predicting which individuals are more likely to engage in risky pandemic-related behavior.

**JT Eissenberg '22**

James Madison University

Advisor: Dr. Raymond Hyser

Oral

***Adlai Stevenson during the Cuban Missile Crisis***

The world was seconds away from nuclear destruction. Two world powers were playing chicken with each other in the waters off the coast of Cuba in 1962, until negotiation and compromise led to a peaceful settlement. The Soviet Union had placed nuclear-armed missiles in Cuba, threatening the safety of most of the United States. The United States Ambassador to the United Nations, Adlai E Stevenson, was a lead proponent for a peaceful or soft solution, to the escalating situation. Analyzing Stevenson's motives and his execution of a settlement, and comparing his solutions to President John Kennedy's and the members of the Executive Committee of the National Security Council (ExComm), will offer insight into the unique role Stevenson played in this crisis.

**Luke Fernandez**

Christopher Newport University

Co-authors: Emma Friedmann, Catherine Pechie, John Tucker, Chessie Pandolfe, Ben Galbreath, Elizabeth Mazzello, and Emily Peterson

Advisor: Dr. Jeffrey Gibbons

***The Fading Affect Bias Across Marijuana and Non-Marijuana Events***

The Fading Affect Bias (FAB; Walker et al., 2003) is the tendency for unpleasant emotions to fade faster than pleasant events (Walker et al., 1997). According to past research, the FAB is a healthy coping response that increases the pleasantness of life (e.g., Walker et al., 2003b). However, the FAB may help reinforce maladaptive behaviors, such as drinking alcohol or consuming marijuana. In fact, Gibbons et al. (2013) found that low alcohol consumers showed a larger FAB for non-alcohol events than for alcohol events, and high alcohol consumers showed a larger FAB for alcohol events than for non-alcohol events. As the FAB is negatively related to marijuana consumption (Pillarsdorf & Scoboria, 2019), we examined the FAB across marijuana and non-marijuana events and marijuana consumption. We expected and found that the FAB would be larger for non-marijuana events than for marijuana events in low marijuana consumption, and the FAB would be larger for marijuana events than for non-marijuana events in high marijuana consumption. These results were mediated by rehearsal ratings and suggest that the FAB could help promote marijuana consumption through frequently thinking and talking about marijuana events.

**Brooke Ashleigh Fife '21**

James Madison University

Advisor: Dr. Skip Hyser

Oral

***British Mapmaking and the Politics of Clothing in Colonial India***

This paper examines the process of mapmaking by the British Empire and how clothing was politicized in India during the period of British colonization. Both of these seemingly unrelated topics show colonial tensions between the colonized and the colonists by highlighting conflicting perspectives, key figures, and important historical movements associated with each. The mapping section draws heavily from various works by Matthew H. Edney, including *Mapping an Empire: the Geographical Construction of British India 1765-1843*, and focuses on the influence of science on cartography, British mindsets that shaped mapmaking, and tools used in the mapmaking process. The second section of the paper draws from Bernard Cohn's *Colonialism and Its Forms of Knowledge The British in India Chapter 5: Cloth, Clothing, and Colonialism: India in the Nineteenth Century* and C.A. Bayly's *The Origins of Swadeshi (Home Industry)-Cloth and Indian Society, 1700-1930*, noting how British and Indian cultures associated different meanings with clothing itself, and how clothing was used as a form of rebellion by Indians against the British.

**Nora Deane Florio '21**

Sweet Briar College

Advisors: Dr. Lynn Laufenberg and Dr. Kimberly Morse-Jones

Oral

***Love vs. Marriage: Italian Wedding Rituals in Renaissance Florence and Venice***

Nowadays, marriage is about finding the person you love and with whom you will spend the rest of your life. It is romantic and beautiful. In the Italian Renaissance, marriage was a business contract; a way to move up in the world. You may have grown to love your spouse, but it was not a deciding factor in who you married. I am going to review the practical purposes of marriage during the Italian Renaissance, while comparing the differences and similarities in the rituals and paintings of Venice and Florence.

**Emma Friedmann '22**

Christopher Newport University

Gabriela Rocha, Catherine Pechie, Matthew Traversa, Emily Peterson, Clare Dayton Stephanie LeRoy

Advisor: Dr. Jeffrey Gibbons

Poster

***The Fading Affect Bias Across Social Media and Non-Social Media Events in a Diary Study***

Negative emotions that fade faster than positive emotions (Walker et al., 1997) are known as the Fading Affect Bias (FAB; Walker et al., 2003a). The FAB is a healthy coping response (e.g., Gibbons et al., 2015) and rehearsal explains its presence across many studies (e.g., Gibbons & Lee, 2019b; Skowronski et al., 2004). In two diary experiments, each lasting one week, participants recorded and described events and then rated their affects. Participants returned later to recall and recognize their events and rate affect and rehearsals. In both experiments, the FAB was predicted positively by rehearsals and negatively by false recognitions. False recognition mediated the relation of the FAB and rehearsals, but rehearsal was a stronger mediator of the relation between the FAB and false recognitions. Both experiments examined social-media events, whereas Experiment 2 also evaluated non-social media events.

**Emma Friedmann '22**

Christopher Newport University

Co-authors: Stephanie LeRoy and Emily Peterson

Advisor: Dr. Jeffrey Gibbons

Poster

***Source and Time Influence Headline Believability and Media Primes Combine with Headline Believability to Affect Recognition***

Unbelievable headlines are better recognized and increase in believability over time, and with exposure, over believable headlines (Gibbons et al., 2005). Epstein et al. (2012) found that the source attached to a news headline affects its believability. We evaluated the effect of media primes (The Washington Post, Twitter, The National Enquirer, or a math control) and news sources (Washington Post, Twitter, The National Enquirer, and no source) on believability and recognition of news headlines with 522 participants. In part one, participants experienced a prime, and rated the believability of 24 headlines. After two days, participants reviewed the 24 original headlines mixed with 24 new headlines. Unbelievable headlines were recognized more accurately than believable headlines and this effect was influenced by media primes. Furthermore, the Washington Post headlines in part one were more believable than other sources, but believability decreased at time two when the source was removed.

**Grace Gordon '22**

James Madison University

Advisor: Dr. Raymond Hyser

Oral

***Americas Hidden History: The Eugenic Buildup to Buck v. Bell***

Eugenics, or classifying and grouping people into the categories of genetically inferior and superior, thrived during the first two decades of the 20th century in America. Eugenics argued that the undesirable inferiors (immigrants, people of color, paupers, unmarried mothers, the disabled, the mentally ill, etc.) be identified and controlled so that their inferior hereditary traits would not spread within America. Proponents of eugenics promoted their ideas to the American people as being necessary for the future wellbeing of the country. Due to the fear of inferior populations consuming the superior populations, eugenics was outwardly accepted within America, and resulted in marriage laws enacted, immigration laws put in place, and state-sanctioned involuntary sterilization laws legalized. Ultimately, the American eugenics movement of the 1920s culminated with the decision of Buck v. Bell which affirmed the eugenic fear of human differences as something that needed to be controlled by American law.

**Kaylee Harris**

Christopher Newport University

Co-authors: Emma Friedmann, Will Ward

Advisor: Dr. Jeffrey Gibbons

Poster

***Does Coronavirus Anxiety and Obsession Affect the Fading Affect Bias?***

Unpleasant affect fades faster than pleasant affect in a phenomenon known as the Fading Affect Bias (FAB; Walker et al., 2003a). The FAB is positively related to healthy outcomes, including self-esteem (Gibbons et al., 2017), and it is negatively related to unhealthy outcomes including depression, anxiety, stress, and negative PANAS (Gibbons et al., 2017). The FAB is also positively predicted by rehearsals (Skowronski et al., 2004). The current study will examine the FAB in the context of the Coronavirus. Participants will complete the Coronavirus Anxiety Scale, descriptions and ratings of pleasant and unpleasant coronavirus and non-coronavirus events, and emotion questionnaires. We expect the FAB to be 1) small for Coronavirus events and 2) related to Coronaphobia, negative emotions, Grit, problematic sleep, and rehearsals. We also expect the FAB to be more strongly related to Coronaphobia for coronavirus events than for non-coronavirus events and we expect rehearsal to mediate this interaction.

**Grayce Heinemann '22**

Loyola University Maryland

Advisor: Dr. David Hoe

Oral

***Going Deep with Neural Networks***

As artificial intelligence becomes increasingly prevalent, developing efficient visual recognition technology is essential. Image recognition, one of the simplest and most unambiguous tasks carried out by the human brain, is currently one of the most difficult for computers and machines. Computer systems implement artificial neural networks that mimic the functions of the human brain (a natural neural network). Deep convolutional neural networks represent the latest development in neural networks; they incorporate many layers using millions of parameters to classify images. In recent years, great progress has been made in training deep convolutional neural networks to recognize a wide variety of images. The goal of this research is to survey the literature of these networks, understand the theory behind them, and perform some computations using programming platforms such as Python, in order to illustrate the operations and point to potential issues. As the use of ConvNets is relatively new in terms of image recognition, certain issues arise. Recent research has revealed that it is possible to fool a neural network by slightly adjusting an image. This evidence poses serious security threats because image recognition is finding applications that are more widespread in every facet of our everyday lives. Experimenting with existing algorithms will allow for a greater theoretical and intuitive understanding of why these trained networks fail. Reviewing certain adversarial examples and creating original examples can point to areas of improvement in terms of robustness and accuracy and can help with developing new methods and algorithms. As such, proposed work would lay foundation for future research that would implement these algorithms on parallel computing architectures such as graphical processing units (GPUs) and field programmable gate arrays (FPGAs).

**Rachel Hendricks '21**

Davidson College

Advisor: Dr. Karen Bernd

Elevator speech

***Water Pipe Tobacco Smoking: A Review of the Public Health and Epidemiology Combating the Emerging Water Pipe Tobacco Epidemic***

Worldwide, tobacco use remains one of the leading causes of preventable death. Since 2012, water pipe tobacco smoking (hookah) has spread to become a global phenomenon, especially among youth and young adults. In many countries, the water pipe has quickly replaced, or falls second to, traditional cigarettes as the most popular method of tobacco use. These usage trends suggest that the health implications caused by tobacco products like hookah, along with common misconceptions regarding their safety, require more attention. In my presentation, I review important data points that demonstrate that smoking hookah is not harmless, causes significant health implications, poses threats to public health and comes with cessation issues. Immediate action on multiple fronts is necessary to change perceptions regarding hookah use, including more inclusive tobacco legislation and tobacco health education, so that the early stages of a re-emerging tobacco use epidemic can be acknowledged and confronted, before it is too late.



**Kelly D. Higgins '20**

Longwood University

Co-author: Alyssa R. Martin

Advisor: Dr. Stephanie Buchert

Poster

***Finding a Way Around: Relationship Between Biological Sex and Spatial Navigation***

Using an object's relative location to another object is considered an allocentric strategy, whereas using an object's location relative to the person viewing it is referred to as egocentric. Although both females and males can use either strategy, females more frequently utilize the allocentric strategy while males are more prone to use the egocentric strategy (Fernandez-Baizan et. al, 2019; Kim, Lee, & Lee, 2007). Extending upon previous research, the present study investigates sex differences in spatial navigation among undergraduate students. Specifically, participants were asked to visually search for colorful balls in an image of a room. Afterwards, they were asked to recall the location of each ball via a three-part survey. We hypothesized that females would demonstrate greater allocentric spatial navigation strategies while males would demonstrate greater egocentric strategies. The results indicated that there was no significant difference in the use of either spatial navigation strategy between males and females.

Kim, B., Lee, S., & Lee, J. (2007). Gender differences in spatial navigation. *International Science Index, Psychological and Behavioral Sciences*, 1(7), 311-314. <https://pdfs.semanticscholar.org/2edc/420885a6044debc32a27be359782ea293991.pdf> Fernandez-Baizan, C., Arias, J. L., & Mendez, M. (2019). Spatial memory in young adults: Gender differences in egocentric and allocentric performance. *Behavioral Brain Research*, 359, 694 -700. <http://dx.doi.org/10.1016/j.bbr.2018.09.017>

**Christopher M. Hulburt '22**

Virginia Military Institute

Advisor: Dr. Pennie J. Ticen

Oral

***We Take What We Want: Rudyard Kipling in the Postcolonial Age***

Rudyard Kipling, once lauded as the pride of English literature, is now a reminder of an egregious empire. Where *If* and *The Jungle Books* remain focal points of our lives, the controversy surrounding *The White Man's Burden* has withdrawn Kipling from contemporary literary achievements. We selectively interpret Kipling's collection; finding comfort in what we find aspirational, and conveniently condemning whatever is left. How do we accept, admire, and/or analyze historical figures? How does Kipling fit into a burgeoning post-colonial society? There is no definitive answer. Nonetheless, broadly reading Kipling's poetry offers a more nuanced analysis of his imperialism and how we receive him in modernity. I analyze Kipling through a postcolonial and contrapuntal lens--studying some of his verse and the accompanying critical analyses. Such study expands our ability to have broadly informed conversations about race and political imperialism that help us confront the shadows of our societal past.

**Kevin Craig Johnson '21**

James Madison University

Advisors: Dr. David Dillard and Dr. Skip Hyser

Oral

***Technology's Impact on the American Civil War***

The American Civil War cost the lives of over 600,000 men from the North and South over the course of a four-year period. Those wounded or killed in combat were confronted by new techniques of harrowing violence because Civil War soldiers were victims of some of the most technologically groundbreaking achievements to ever, directly or indirectly, harm or kill human beings. The technology at this time in world history proved to outmatch conventional and time-tested military tactics, with which they combined. Wooden ships were replaced with armored ones, or were made completely of iron, and submarines were improved and successfully employed to sink enemy vessels unseen. This war, and the men and women involved, dealt the effects of modern technology like no other war that preceded it.

**Sabrina Johnson**

Randolph College

Advisor: Dr. Cheryl Lindeman

Oral

***Deeper Learning: How Do Elementary Mathematics and Science Teachers Acquire Strategies and Content Knowledge to Promote Student Success?***

In our research, we identify strategies and content knowledge elementary math and science teachers have learned through their careers. Elementary education majors are interested in learning how teachers continue in their professions and our research design gathers targeted information that addresses “deeper learning” in math and science. Our participants are a sample of Virginia elementary teachers in grades two through five. Survey questions from the 2018 National Survey of Mathematics and Science Education (NSMSE) are used to develop an online survey. The goal is to establish the key professional learning pathways teachers report are valuable and effective in helping students excel in mathematics and science. Our focus group also helped us gather insights into how curiosity is integrated into their teaching philosophies. We intend to distribute our findings at several conferences, highlighting common strategies veteran teachers suggest for future teachers.

**Joseph Kelly '22** *withdrawn*

Hampden-Sydney College

Advisor: Dr. Viktoria Basham

Oral

***Redefining Propaganda: From Ancient Egypt To Hampden-Sydney College***

The basic goal of propaganda has remained the same throughout history: to disseminate or promote particular ideas. (1) In this paper, I elaborate on the definition of the term propaganda that I created based on the research that I have done: a one-sided multifaceted form of communication in which the propagandist intends to fully align the opinion and/or behavior of a person or a group of people with his/her [the propagandists] intended goals. I use various texts from different cultures and time periods, such as Ptah-Hoteps Precepts, Hammurabis Code, Yuan Cais Advice about Women, Domostoi, and T. Shomos To Manner Born, To Manners Bred, to demonstrate the five main underlying principles of propaganda that the propagandist utilizes in order to influence the audience's beliefs and/or behaviors: logic, feasibility, believability, use of fear, and promise of a reward.

1 Garth S. Jowett and Victoria O'Donnell, What Is Propaganda, and How Does It Differ From Persuasion, in Propaganda & Persuasion, (SAGE Publications, Inc., 2015, pp. 154.), 2.

**Terek John Kirsch '22**

James Madison University

Advisor: Dr. Raymond Hyser

Oral

***The Shattering of Détente***

This paper is an in depth look at the events surrounding the boycott of the 1980 Olympic games. The research is centrally focused around examining the Soviet invasion, the deteriorating relationship between the United States and the Soviet Union before the boycott, and the Carter administration itself. The purpose of this investigation was to reconsider the seemingly direct cause/effect relationship between the invasion and the boycott. Previous research shows that the Soviets directly antagonized the United States who subsequently instigated the ban on their Olympic athletes. After a re-examination of the primary sources from the White House, the relevant scholarship, and the external factors involved, I conclude that it was the incompetence of the Carter administration that directly caused the boycott and breaking of Détente. The significance of this research lies in the fresh take on the boycott, giving greater context and a larger understanding of its relevance.

**Stephanie LeRoy**

Christopher Newport University

Co-authors: Kaylee Harris, Lauren Cadwick, Emma Friedmann, Emily Peterson, Francesca Pandolfe, Jodi Cleaver, Hannah Brown, Angelica Florendo

Advisor: Dr. Jeffrey Gibbons

Poster

***Relation Between Fading Affect Bias and Grit, Personality and Affect Across Video Game and Non-video Game Events***

The Fading Affect Bias (FAB) is a psychological phenomenon where unpleasant affect fades faster and to a greater extent than pleasant affect (Walker, Skowronski, Gibbons, Vogl, & Thompson, 2003a). FAB is a coping strategy and can impact affect in the long-term (Walker, Skowronski, & Thompson, 2003b). Video game play in hours is related to unpleasant affect, interrupting FAB (Anderson, 2004; Anderson et al., 2003; Anderson & Dill, 2000, Gibbons & Bouldin, 2019). The Gibbons and Bouldin (2019) study was replicated in that the researchers examined both pleasant and unpleasant video game and non-video game events. Personality traits like neuroticism, openness, and extraversion, pleasant and unpleasant affect with Positive and Negative Affect Schedule" (PANAS), depression, anxiety, stress with DASS-21 assessment, and videogame addiction with Interactive Graphic Design Software (IGDS) were also examined. The GRIT measure was added, differing from the replication. The results supported the FAB where FAB increased with a positive PANAS and GRIT. Positive PANAS, GRIT, and IGDS predicted FAB. Rehearsal ratings were found to be a mediator at 23 quintiles, out of 25, from IGDS and positive PANAS, or with GRIT. Further research could consider video game genre and its relation to affect.

**Zenobia Lee-Nelson '21**

James Madison University

Oral

***Ain't I a Woman, Still?: Black Directed Femicide, The Nonconventional Deaths of Black Cisgender & Transgender Women and Gender Based Violence***

The purpose of this research is to highlight the nonconventional, and often unrecorded, untimely deaths of black cisgender and transgender women in the United States. Black female bodies are constantly disappearing in a variety of ways. Physical violence, sexual violence, economic violence, structural violence, and social violence in the context of gender-based violence will be explored. I present this issue with an examination of these deaths through the lens of gender-based violence. Based on this expanded definition of femicide, I will apply theories of critical race and gender, while engaging questions relative to the right to live, gendered relationships, erasure of certain bodies, womanhood and femininity, while acknowledging and respecting the similarities and differences in the experiences of both black cisgender and transgender women.

**Evan Daniel Lester '21**

Hampden-Sydney College

Advisor: Dr. Ivo I. Gyurovski

Oral

***Does Political Affiliation Trump Outcome Bias?***

Research in the fields of judgment and decision-making shows that information pertaining to the outcome of a decision has a significant impact on people's attitudes regarding the decision itself. This effect is classified as outcome bias. Data from approximately equal numbers of Republicans and Democrats was collected. Participants were presented with descriptions and outcomes of decisions made by a hypothetical politician. These decisions concerned public policies in response to the Coronavirus (COVID-19) pandemic. Participants evaluated the quality of the thinking that went into each decision. Results showed that policies that yielded successful outcomes received significantly better evaluations than policies that yielded failures. Democrats exhibited this tendency to a greater extent compared to Republicans. Conversely, Republicans exhibited a greater bias toward their own political party than did Democrats. The findings are presented within the context of classic and contemporary findings in the field of judgment and decision-making.

**Brayden Lozaw '21**  
Hampden-Sydney College  
Advisor: Dr. Indu Khurana  
Oral

***Why Hampton, Virginia?***

This paper analyzes the driving factors that serve as impetuses for unmanned aerial vehicle (UAVs)/drone market localization in the Hampton Roads region of the Commonwealth of Virginia. Conclusions were reached through both a comprehensive research of available secondary data and a thorough review of relevant literature. The findings illuminated several explanations for the emerging drone market within this region. These discoveries revealed, primarily, that an economic ecosystem has arisen as a result of Hampton Roads area's proximity to the National Aeronautic Space Administration (NASA) and subsequently, the availability of related grants and business opportunities connected to that governmental organization. Other factors, although less prominent, include the area's rich and deep roots to aerospace history, and its significant availability of varying modes of transportation that make both access and egress into and out of the area easy. With a broad beginning and a narrowing focus, patterns found in the secondary data of this exhaustive research led to the conclusion that Hampton Roads is the largest ecosystem of drone manufacturing and research in the United States.

**Michael Lutz**  
Aspiring Scholars Directed Research Program (ASDRP)  
Co-authors: Sanjana Gadaginmath, Sriram Srivatsan, Natraj Vairavan  
Advisor: Dr. Phil Mui  
Oral

***Youtube's Reflection of User Political Bias***

Given the reach of YouTube as a proliferator of contemporary news and ideas, it is important to understand how YouTube reflects (either magnifies, minimizes, or preserves) pre-existing political biases. It is imperative to examine if YouTube's reflection of political bias disproportionately favors distinct political groups and if it encourages the confirmation of biases. Previous research has examined user data and ideological homogeneity within social media groups, however given the extent of YouTube's reflection of its user bases, political bias remains relatively unexplored. Our research aims to provide a novel understanding of YouTube's reflection of user base political biases within its search and video recommendations algorithms. We created two experiments to understand each of the aforementioned systems. Experiment 1 examines the relationship of political bias values in videos, measured by applying an optimized BERT NLP regression model to video transcripts, to their respective page orders. This experiment scraped the top 200 search results over the span of 30 politically charged terms with four distinct political profiles (left, right, combination, null). Experiment 2 examines the progression of biases when repeatedly clicking the "Up-Next" recommended video, per each video cycle. This second experiment examined 1200 seed videos from our first experiment, with 200 videos per category (extreme-right, moderate-right, minimal-right, minimal-left, moderate-left, extreme-left), examining 10 subsequent click cycles per seed video. Our first experiment finds that YouTube disproportionately ranks left-leaning videos above right-leaning videos, within the top three search results. Our second experiment finds that YouTube actually minimizes the magnitude of bias within subsequent cycles of video recommendations. We also found that YouTube has a greater minimization effect with right-leaning minimally biased seed videos, over its left-leaning counterparts, and a greater minimization effect with left-leaning extremely biased videos, over their right-leaning counterparts. Ultimately, our results provide a nuanced understanding of YouTube's reflection of political bias and have vast potential implications.

**Elizabeth Mazzello '21**  
Christopher Newport University  
Co-authors: Francesca Pandolfe, Alexander Jedlick, Emma Friedmann, Stephanie LeRoy, Emily Peterson, Robert Thorne  
Advisor: Dr. Jeffrey Gibbons  
Poster

***The Relation Between Fading Affect Bias and False Memories***

Negative emotions that fade faster than positive emotions (Walker et al., 1997), are known as the Fading Affect Bias (FAB; Walker et al., 2003a). The FAB is a healthy coping response (e.g., Gibbons et al., 2015) and rehearsal explains its presence across many studies (e.g., Gibbons & Lee, 2019b; Skowronski et al., 2004). In two diary experiments, each lasting one week, participants recorded and described events and then rated their affects. Participants returned later to recall and recognize their events and rate affect and rehearsals. In both experiments, the FAB was predicted positively by rehearsals and negatively by false recognitions. False recognition mediated the relation of the FAB and rehearsals, but rehearsal was a stronger mediator of the relation between the FAB and false recognitions. Both experiments examined social-media events, whereas Experiment 2 also evaluated non-social media events.

**Alexis McCowan '21**

Howard University-Annenberg Honors Program

Advisor: Dr. Leelanee K. Malin

Oral

***Do You See Me Now?: A Study of the Misrepresentation of African-Americans in the News***

The purpose of this study is to show how the media has the power to choose what is broadcast and how it is broadcast resulting in how it affects the public's opinion on that demographic and the people, apart from underrepresented communities. This study will highlight different cases when black people are viewed in a stereotypical light, due to their race, including cases when black victims of crimes have received little to no media coverage. African-Americans are misrepresented and vilified in the media, and consistently portrayed as stereotypes and not people. Media outlets tend to show no sympathy for these groups as well. This research will prove the negative judgments placed on this group of people. This research will also show binary oppositions between black and white people demonstrating the differences in how they are portrayed in the media when similar cases are compared.

**Lauren Elizabeth McCusker '22**

James Madison University

Advisor: Dr. Raymond Hyser

Oral

***Remarkable Women: Nurses during the American Civil War***

Despite the popular topic of the American Civil War, information on the role of women as nurses and organizations (United States Sanitary Commission, Sisters of Mercy, Sisters of the Holy Cross, Sisters of Mount St. Vincent) that aided women nurses needs to be addressed. Based on personal diaries, testaments, and letters, women joined the war for multiple reasons, but overall they faced challenges of men not wanting them in hospitals, or even allowing them to take the American Medical Association (AMA) exam, to be hired as surgeons. Women played a crucial role as nurses when they physically aided, spiritually aided, and medically aided the wounded soldiers. These nurses became known as the angels of mercy to the soldiers they cared for, but their stories need to be told so they will earn formal recognition and compensation for the work they did. This paper will aid in informing others on the important roles done by these remarkable women.

**Taylor James McGee '23**

Hampden Sydney College

Advisors: Dr. Kristian Hargadon, Hampden Sydney College, and Dr. Balaz Gyorffy, Semmelweis University

Oral

***Evaluating Expression of Interferon Pathway Genes and their Prognostic Significance for Cancer***

Interferon (IFN) signaling plays a key role in the efficacy of anti-tumor immune responses. IFNs have direct anti-tumor functions and can enhance tumor susceptibility to immune effector populations. Previous work has found that tumor progression and resistance to immune-based therapies may result from various IFN signaling pathway defects, including the acquisition of mutations or copy number alterations in IFN pathway genes, and post-translational modifications that regulate the activity of IFN pathway signaling components. In this study, we wished to test the hypothesis that alterations in the expression of IFN pathway genes might also contribute to tumor progression. Using RNA-sequencing data from The Cancer Genome Atlas, we performed Kapan-Meier survival analysis to assess the correlation between expression of individual interferon pathway genes and patient survival across 15 cancer types. We also assessed the prognostic significance of expression of these genes in patients specifically treated with immunotherapy and chemotherapeutics.

**Jdody Misidor '21 and Renee Sarpong '21**

Randolph College

Advisor: Dr. Kristin Bliss

Oral

***Analysis of the Independent and Combined Effects of Elevated Carbon Dioxide and Temperature on Major Agricultural Crops: Solanum Tuberosum and Solanum lycopersicum***

The effect of global climate change in respect to elevated carbon dioxide levels and temperature on major crops such as Solanum tuberosum (potatoes) and Solanum lycopersicum (tomatoes) has received little attention. In this project, we examine the combined and independent effects of enhanced levels of carbon dioxide (CO<sub>2</sub>) and temperature on plant growth, morphological characteristics, and chemical toxins. Although the quality of these plants are an important topic with regard to food and industrial processes, the consequences of elevated future atmospheric carbon dioxide and temperature levels are still unclear. The ultimate goal is to assess and create an experimental design that analyzes the impact of elevated atmospheric conditions on major agricultural crops.



**Brooke Nixon '22**

Christopher Newport University

Advisor: Dr. Nicole R. Guajardo

Elevator speech

***Effects of Mindset Priming and Technology on Theory of Mind Performance***

Critical changes in theory of mind (ToM), the ability to attribute mental states to oneself and others, occur during the preschool years (Wellman et al., 2001). A key aspect of ToM understanding is the ability for one to step outside of oneself and consider another's perspective (Zhou et al., 2016). Previous work indicated that priming a difference mindset fosters successful perspective-taking in adults. The primary purpose of the present study is to examine whether difference mindset priming similarly affects preschool children's ToM performance. The study also aims to examine: 1) whether mode of task presentation affects ToM performance; and 2) the relationship between children's use of technology and their understanding of others' perspectives. We hypothesize that children primed with a difference mindset will perform better on ToM tasks than children in the other groups. No specific hypotheses are proposed for task mode and the relationship with technology use.

**Kaitlyn Okin '22**

Hollins University

Co-author Alea R. Rodriguez

Advisor: Dr. Son Hong Nguyen

Oral

***Synthesis and Evaluation of Rhodamine- and Biotin- Probes For Detection of Cysteine-Rich Proteins***

Along with glutathione, the biological thiol cysteine (Cys) plays important roles in many biological processes such as cellular detoxification and metabolism in living organisms. Changes in intracellular Cys concentrations have profound effects on these biological processes. Given the critical importance of Cys homeostasis in biological systems, a strong interest has emerged in developing effective probes to detect and image Cys-rich proteins. In this research, my lab will work on the synthesis and evaluation of probes used to label Cys-rich proteins in biological systems, especially in redox systems, and in some diseases. From there, we would want to understand the functions and activities of these proteins in some specific diseases.

**Emily Pappalardo '23**

Christopher Newport University

Advisor: Sherman A. Lee, Ph.D.

Poster

***Effects of COVID-19 on College Students: A Literature Review***

COVID-19 has changed the way humans exist in their everyday lives. College students, in particular, have shown heightened levels of psychological distress due to COVID-19. One study found that 41% of students reported being depressed to the point of dysfunction (Craven, 2020). Anxiety was the top presenting concern among college students (41.6%) before COVID-19 (APA, 2013). Since the rise of COVID-19, a survey found that 91% of students report having stress or anxiety, a drastic increase from past years. Students also experience increased stressors like relocation (56%) and financial setbacks (48%) related to COVID-19, (Craven, 2020). Because of these risks and additional stressors, returning to campus this coming school year could actually be worsening students' mental health. Future research should focus on the effects on students who have returned to campus and how growing anxiety about COVID-19 affects their college experience.

**Rebecca Parks '22**

University of Lynchburg

Advisor: Dr. Ei Hlaing

Oral

***Correlates of Adherence to CDC Guidelines and Susceptibility To COVID19-Related Myths***

During a pandemic, it is beneficial to understand what factors relate to individual differences in attitudes and in following guidelines. One major research question is "Which predictor variables (demographic variables, personality traits, and sense of entitlement) correlate to adherence of COVID-19 CDC health guidelines?" Sixty-three students, from a small liberal arts college, completed a Google Form research survey. Participants were randomly assigned to read one of two sets of news articles that either highlighted the dangers or downplayed the significance of COVID-19. This manipulation should indicate if priming through articles is related to the students' reported future adherence to CDC guidelines, as well as their susceptibility to COVID-19 related myths. Preliminary data indicates that the trait of openness is positively correlated with current adherence to CDC guidelines,  $r(57) = .365, p = .004$ . The difference between the news conditions on the dependent variables were not statistically significant.

**Emily Peterson '22**

Christopher Newport University

William Ward, Matthew Traversa, Benjamin Galbreath, Emma Friedmann, Luke Fernandez, Stephanie LeRoy, Elizabeth Mazzello, Angelica Florendo, Francesca Pandolfe

Advisor: Dr. Jeffrey Gibbons

Poster

***Examining the Fading Affect Bias in Relation to Negative Emotions and Problem Solving***

The Fading Affect Bias (FAB; Walker et al., 2003) is a psychological phenomenon demonstrating that unpleasant emotions fade faster than pleasant emotions (Walker et al., 1997), which is a form of emotion regulation (Walker & Skowronski, 2009). Past research has shown that problem solving is associated with emotion regulation (Spering et al., 2005). The present study examines the relation between problem-solving ability and FAB. Participants will be asked to complete a variety of questionnaires that assess their demographics, anxiety and depression levels and problem-solving ability. Participants will also be asked to recall 2 pleasant and 2 unpleasant problem-solving as well as 2 pleasant and unpleasant non-problem-solving events and then they describe these events and rate their affect and rehearsal frequency. We predict that problem-solving ability will positively predict FAB. Additionally, we expect problem solving to positively predict FAB for problem-solving events and negatively predict FAB for non-problem-solving events.

**Lily Peterson '21**

Sweet Briar College

Advisors: Dr. Timothy Schauer and Dr. Kimberly Morse-Jones

Oral

***Psychological Effects and Preferences in Logo Design***

This study focuses on logo preferences in terms of the age of viewers through visual surveys. The variables discussed include simplistic, complex, color, monotone, and word placement. There was evidence suggesting that logo preferences, strictly in terms of age, appear to be an arbitrary subject. However, there are biases recognized on a small scale suggesting personal attachments to older trends. The topic of simplistic versus complex designs remains a significant concept when choosing logo designs and a balance has to be achieved between descriptiveness and simplistic aesthetic appeal. The data results show preferences for more abstract design, warmer color tones, and word placement grouped together under the main design. We found that our demographic, with an average age of 46 years, preferred this option. This may be coincidental, or possibly because they find it easier to read, since the words grouped together are for eyes to manage.

**Isabel Rice-Martorell '21**

Christopher Newport University

Co-authors: Brandi Houck and Jasmine Norman

Advisors: Dr. Dorothy C. Doolittle &amp; Dr. Shelia P. Greenlee

Poster

***The Relationship between Cognitive Failures and Social Anxiety, Fear of Missing Out, No Mobile Phobia, and Problematic Phone Usage***

Sixty-nine undergraduate students completed three self-report questionnaires, as part of a larger study on cell phone use and anxiety, after completing an informed consent. The methods used were the Cognitive Failures, Measure of Social Anxiety, Fear of Missing Out questionnaire, No Mobile Phobia measure, and the Measure of Problematic Phone Usage. According to Broadbent, Cooper, FibGerald, and Parkes (1982), cognitive failures are defined as all types of lapses in which there is a departure from the normal smooth flow of function to an episode of absent-mindedness. Results suggest cognitive failure significantly correlates to nomophobia, fear of missing out, social anxiety, and problematic phone usage. These findings demonstrate the negative association of cell phone usage on our cognitive functioning in our now technology-dependent society. While this is a correlational study, being anxious about activities related to cell phone use may affect cognitive functioning. This topic should be addressed with adolescents and parents.

**Mikaili Byron Robertson '21**

Hood College

Co-author: Greighson Rowe

Advisor: Dr. Diane Graves

Poster

***Impact of COVID-19 On Relationship Between Athletic and College Experience of STEM Majors***

The present study investigates the impact of COVID-19 on relationships between the athletic and college experiences of STEM majors. These students, from a small liberal arts college in Maryland, are the recipients of a scholarship that provides financial support for them to be able to study the STEM discipline of their choice. A number of these students participate in a sport, and due to the COVID-19 pandemic, their athletic experiences in their first year (and now 2nd) have been heavily altered. Does this impact their overall college experiences at Hood as well as their retention in the STEM discipline? Data collected on the students' academic and athletic experiences prior to the cancellation of fall sports will be compared to more recent data following the new changes in school policies.

**Greighson McCrae Rowe '20**

Hood College

Co-author: Mikaili Robertson

Advisor: Dr. Diane Graves

Poster

***Flattening the Curve of Academic Self-Efficacy: One Online Course at a Time***

The present study explores the impact of COVID-19 on the psychosocial well-being of a cohort of S-STEM scholars at a small liberal arts college in the mid-Atlantic region of the United States. These scholars are the recipients of a competitive merit grant that supports students majoring in the STEM disciplines. This study is part of a larger study investigating the efficacy of a variety of targeted interventions for the scholars. Due to the unique impact of COVID-19's restrictions on higher education for STEM fields, data on the scholars' academic self-efficacy collected pre-COVID (September 2019 and March 2020) will be compared with parallel data collected post-COVID (May 2020 and September 2020). Significant changes in scholars' perceptions of their stress, academic self-efficacy, and the specific impact of COVID-19 in their academic experience will be highlighted and implications will be discussed.

**Jamie M Ryan '21**

Shenandoah University

Advisor: Dr. Scott P. King

Oral

***FOMO, Telepressure, and Anxiety in Connection with Social Media Usage***

In today's age of social media, the concept of fear of missing out, or FOMO, is extremely prevalent. FOMO relates to a feeling of anxiety resulting from not regularly checking social media accounts. I evaluated the connections between FOMO, social media use, and the Big 5 personality traits, with hypotheses that there are positive correlations between traits of neuroticism and extraversion and FOMO and telepressure. I hypothesized that participants who specifically reported anxiety when deprived of access to technology or social media would score high in FOMO and neuroticism. The results of this study showed that participants who reported experiencing higher levels of telepressure also reported less neurotic personalities. FOMO showed negative correlations to telepressure and conscientiousness, as well as a positive relationship between FOMO and neuroticism.

**Megan Shipe '22**

Longwood University

Advisor: Dr. Brian Bates

Oral

***Origin and Cultural Significance of Blue Glass Beads Found on the Eyreville Archaeological Site (44NH0507)***

Multiple instances of blue glass beads have been found at the Eyreville archaeological site in Northampton County, Virginia. This project set out to determine where these beads were originally manufactured, as well as who may have used them at Eyreville, and to what ends. This project was a highly collaborative and interdisciplinary process between the Archaeology and Chemistry departments at Longwood University. The beads were analyzed for elemental makeup with use of a portable X-ray fluorescence (pXRF) spectrometer. Data collection and analysis was aided by Dr. Sarah Porter, Angela Scarpa, and Lauren Johnson of the Longwood Chemistry department. The beads were also archaeologically analyzed to explore the cultural significance they held to various groups who lived on the eastern shore in the 17th century. The results of this project open possible avenues for future research.

**Emma Siegert '21**

Shenandoah University

Advisor: Dr. Scott King

Oral

***Personality and Instagram***

Social media is more prevalent in people's lives, and what people post, may have a connection to their personalities. The purpose of this study is to determine how the types and content of a person's social media posts correlate to the Big 5 personality traits and narcissism. To test the hypothesized positive relationships between post length, amount of followers, amounts of personal posts, amounts of posts with selfies, narcissism, and extraversion, Pearsons correlations were performed on data collected from 72 participants. The results show that there is no correlation between the suggested personality traits and social media posts as suggested in the hypothesis. There was, however, a positive correlation between conscientiousness and followers, and a negative correlation between word count and agreeableness. Our results provide insight on connections between personality and social media usage, adding to the growing body of literature in this area.

**Haydn Stevens '21**

James Madison University

Dr. Philip D. Dillard

Oral

***The Emancipation Proclamation: A push to end the Civil War***

On January 1, 1863, President Abraham Lincoln issued the Emancipation Proclamation, taking the first major step toward ending slavery in America. The Emancipation Proclamation is often viewed as the event that freed the slaves, rather than the 13th amendment. In reality, the Emancipation Proclamation was as much about furthering the northern war effort as it was ending slavery in the Union. It did this primarily by hurting the southern war effort, ensuring Britain and France would not support the Confederacy, and allowing for the recruitment of former southern slaves into the Union army. Primary sources such as the Emancipation Proclamation itself, and Lincoln's Second Inaugural Address, will be used alongside various secondary sources, to examine the complex reasons behind the Emancipation Proclamation.

**Destiny Stormer '22**

Howard University-Annenberg Honors Program

Advisor: Dr. Leelanee K. Malin

Oral

***The Fetishization of Delinquent Black Males in the Media & its Effects on Public Views***

Within the last ten years, African American men and boys are increasingly misrepresented and negatively portrayed in the media. From developments of stereotypes portrayed in television and film, to race-baited propaganda on the news, Black males have been incessantly targeted and criminalized. With the rise of movements like #BlackLivesMatter and social media activism, industrialized mediums are being interrogated for their negative depictions of Black people, but the cycle of misrepresentation continues. This study will bring to light the discrepancies of the representations of African American males and the effects they have on the public's views.

**Anthony Taylor '21**

Loyola University Maryland

Advisors: Dr. Maren Blohm and Dr. Courtney Hastings

Oral

***Detecting Clandestine Graves Using White Dutch Clover; Plant Growth and Germination In Response To High Cadaverine Levels***

This study reviews data on *Trifolium repens* (white clover) response to high cadaverine (Cad) levels with the aim of using it as a screening tool for potential clandestine gravesites. Two growth trials involving mature plants, and two germination trials, were undertaken in a 2x2 factorial set-up using a randomized block design. One of the two variables was soil type and the other was Cad source. Soil type was the largest influencer of plant growth, while Cad source was the largest influencer of germination with decomposing material resulting in a dead zone of plants around the source. Results are preliminary, but it is highly likely that exogenous Cad presence is not the cause for this effect. There is no concrete suggestion for how to use *Trifolium repens* most effectively as a screen for clandestine graves, although diameter of the dead zone and soil pH are suggested.

Link to full paper: <https://drive.google.com/file/d/1KrcdXaSkvrUZtMxOSW011Y2wil6agCiz/view?usp=sharing>

**Jordan Wall '21**

Louisiana State University

Advisor: Dr. Alyssa Johnson

Oral

***Using CRISPR Engineered Flies to Study VCP Disease Mutations***

Mutations in Valosin-containing proteins (VCP) are associated with multiple degenerative diseases, underscoring the importance of VCP to human health. Prior studies have demonstrated that over-expression of certain disease-associated VCP mutations in *Drosophila* (genus of fly) partly mimics some of the clinical features observed in patients with VCP-related diseases. Thus, *Drosophila* could be a useful model for studying VCP disease pathogenesis. Using CRISPR gene editing, we have generated a collection of fly knock-in models that express disease-associated VCP mutations endogenously, which we hypothesize will better mimic the human diseases. These models will allow us to evaluate each mutation on a cellular and organismal level to better understand the symptoms produced by each mutation. I am testing the effects of each mutation on mobility and memory over the lifespan of the animals. We anticipate that this animal model can be used in the future to develop personalized treatments for patients with VCP-related diseases.

**Zoe Waring '22**

Randolph College

Advisors: Dr. Peter Sheldon, Dr. Peggy Schimmoeller, and Jennifer Williams

Oral

***SciFest Curriculum Guide***

This presentation is a detailed PowerPoint talk about what my group worked on in the 2020 Randolph College Summer Research Program. We constructed a hands-on curriculum guide for K-12 based on the activities in the Randolph College Science Festival. We constructed our own lesson plans, based on one that Dr. Peggy Schimmoeller helped us create. Another goal of this project was to create a way to analyze the effectiveness of this curriculum and our science outreach. The main research was reading scholarly articles that dealt with outreach and analyzing curriculum.

**Jacob Whitney '21**

Hampden-Sydney College

Advisor: Dr. Rachel Goodman

Oral

***A Meta-Analysis of Issues Surrounding COVID-19***

Coronavirus Disease 2019, or COVID-19, quickly developed from a bad flu into a global pandemic from the end of 2019 through 2020. The goal of this research is to present a scientific view of COVID-19's rapid rise, as well as the response mounted against it, both in research laboratories and government intervention. To simplify an extraordinarily large body of research into a manageable amount given resources available, four specific topics were focused on. 1. The origins of SARS-CoV-2 in animal populations and the specific vector species from which the first human was infected. 2. The mode of infection and its biological impact on humans. 3. Potential treatments to COVID-19, both those that treat an infected individual and those that prevent infection. 4. The effects of public health policies, social distancing, masks, etc. on disease transmission.'

**Alexandria Woodward '22**

Virginia Military Institute

Co-author: Erin Kozlowski

Advisor: Dr. Michael LaRocca

Poster

***PTSD, Post Traumatic Growth, and Depressive Symptoms Across Dimensions of the Military***

This study explored the relationship between the effects of post-traumatic growth, post-traumatic stress disorder (PTSD), and depressive symptoms in veterans when comparing military branch of service and deployment location. After a series of Analysis of variance (ANOVA) and correlational analyses, there were more significant relationships between the after-effects of military service and location of most recent deployment, than there were between after-effects of military service and branch of service.



# Special Thanks

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