THE RANDOLPH COLLEGE SYMPOSIUM OF ORTISTS

MAY 11, 2022



Welcome

Dear Symposium Attendee,

Welcome to Randolph College's 14th annual Symposium of Artists and Scholars. We look forward to this event highlighting the wide spectrum of liberal arts outcomes and experiences nurtured here at Randolph College.

The presentations and posters featured during this symposium represent the diverse disciplines we offer and exemplify the learning that takes place every day. Thanks to the dedication of our nationally ranked faculty members, students have opportunities to develop skills through mentorships with faculty as well as partnering with their professors for important research projects.

Randolph College prepares students to engage the world critically and creatively, live and work honorably, and experience life abundantly. Since the College's founding in 1891 as Randolph-Macon Woman's College, this institution has remained dedicated to providing an excellent liberal arts education focused on one student at a time. One hundred and thirty-one years later, our students continue to inspire their classmates and faculty to stretch boundaries, spread compassion, and become significant contributors to their communities.

I thank the committee who collaborated on organizing this symposium and the faculty-nominated students who agreed to share their projects. We appreciate the dedicated faculty members who consistently venture outside of the classroom to foster and nurture individual scholars and artists. This collegiality is key in making the symposium the outstanding program that it is today.

I am sure you will enjoy this year's Symposium of Artists and Scholars.

Vita abundantior,

Brackey W. Bateman President

SCHEDULE

8:30-10:00 a.m.– Breakfast & Coffee 9:00-10:30 a.m.– Posters and Exhibits (Hampson Commons)

10:45-11:45 a.m.- Welcome: Holly Tatum, Director of the Center for Student Research

Keynote Address: "A Journey into Pure Mathematics and Its Communities" by Michael Penn (Nichols Theater)

12:00-1:00 p.m. – Buffet Lunch (Ashley Jack Room – by RSVP only)

1:30-2:45 pm- ORAL PRESENTATIONS I

NICHOLS THEATER (Moderator: Jennifer Gauthier)

Kimberly Steele '22, "Minimization as a Coping Strategy for Sexual Assault: Stigma Management and Coping Strategies" **Hailey Gilman '22,** "Evaluating the Impacts of Seagrass Restoration on Ecosystem Carbon Sequestration"

Johnny Watters '22 & Daisy Ayala-Gomez '22, "Pigments, Pressure, and Principles: The Effect of Colors on Stress and Moral Decision Making"

Samantha Paulette '22, "Implications of Instagram use on Young Female Users"

Alissa Garcia-Cruz '22, "A Donation's Journey: The Gathering, Dissemination, and Prioritization of Donated Goods by Social Service Organizations"

KLEIN BOARDROOM (Moderator: Lesley Shipley)

Ranger Kinney '24, "The US Left in the 'Age of Organization"

Sabina Sabat '22, "(Re)painting Marble: An Exploration of Diversity in the Randolph College Ancient Collections" Charlotte Humphries '22, "Flipping the Classroom: When Students Take the Driver's Seat in Their Own Education" Christopher Acosta M.A.T. '22, "French Aesthetic Theory: Visual History & Literacy in Secondary History Education"

QUILLIAN CONFERENCE ROOM (Moderator: Aaron Shreve)

Jennifer Ring, M.A.T. '22, "Improving the behavior of middle school students: Positive Behavior Intervention System Donald Doyle '22, "Reconnecting with History: Using Historical Fiction in the History Classroom" Ninfa Amador-Hernandez '22, "Public Policy Analysis: From Senior Research to Real-World Applications" Joshua Bulavko '22, "Sovereignty and Survival: Lakota Resilience since the American Indian Movement" Katelyn Coghill M.A.T. '22, "The Effects of Noncontingent Fixed Interval Reinforcement on Students with Autism"

2:45-3:00 p.m.- Break - Afternoon Snack

3:00-4:30 p.m.- Oral Presentations II

NICHOLS THEATER (Moderator: Karin Warren)

Caleb Schmitzer M.A.T. '22, "Cooperative Learning in the Classroom: Increasing Achievement and Reducing Disruptions" Michaela Saunders '22, "Kind Criticism: Effects of Peer Evaluation on Student Perception of Ability and Mindset" James Diaz '22, "The Relationship Between Teen Sports Participation and Delinquency" Marian Small '22, "Cognition Extended and Assistive Technology" Chantel Spinner '22, "I am Strong, I am Invisible, I am a Black Woman"

KLEIN BOARDROOM (Moderator: Gerry Sherayko)

Megan Westerman '23 & William Olichney'24, "America's Wars in Asia and Public Opinion, 1950-1975" Joshua Bulavko '22 & Tomi-Lauren McGinnis '23, "Assessing Virginia's Monument Landscape" James Greenfield, M.A.T. '22, "Questioning Engagement: The Effect of Inquiry Instructional Models On

James Greenfield, M.A.T. '22, "Questioning Engagement: The Effect of Inquiry Instructional Models On Classroom Engagement"

Sabrina Johnson '22, "Bust the Buzzard: Comparing Heterogeneous and Homogeneous Small Reading Groups" Daniel Trice M.A.T. '22, "Never Happy, Always Angry, So Much Drama: Drama Activities to Promote Spoken French" Taylor Murphy '22, "Empathy in Elementary Education: Assisting in the Development of the Habits of Mind"

POSTERS & EXHIBITS

A'Nyeja Adams '22, "The Growth of an African American Woman"

 Robert Bailey '24, Heidi Corbett '24, Hailey Gilman '22, Sarah Greene '23, Olivia Richards '23, Ainsley Simmons '25, Dr. Karin Warren, "Craftivism to Raise Awareness of Global Plastic Pollution"
Jacqueline Clardy-Josephs '23, "Walk the Plank: Virtual Risk-Taking and Cheating in Adolescents"
Katelyn Cook '22 "Can the 'Speed Gene' be Used to Distinguish Thoroughbred from Non-Thoroughbred Horses?"

Dagim Desta '23, "A Deep LSTM Network for Apple Stock's Price Forecasting"

Jaelyn Evans '22, Olivia Green '22, Christopher Perez-Merino '22, Lillian Tacke '23, "The Southeastern Theatre Conference Experience"

Hailey Gilman '22, Nicholas Vazquez '23, "January-Intensive Term at Washington University in St. Louis"

Kyle Grundy '22, "Creation of a Sustainable Amphibian Habitat in Randolph College's Organic Garden"

Tyreck McFarlane '22, "Remote Terrain Mapping of the Mountain Biking Trails in Lynchburg"

Kayla Morris '22, "Subtle Moments"

Paige Naples '22, Madelyn Wright '22, "Effects of Increased Temperature and Carbon Dioxide on the Growth of Tomato Plants."

Seth Pruitt '22, "VMX Conference Orlando, Florida"

Erin Schriever '23, "Accuracy of an iPhone 12's Accelerometer on Five- and Fifteen-Degree Inclines"

Abby Whitlock '23, "Randolph Thrive: Promoting Healthy Minds and Lifestyles through Nature"

Mia Wright '23, "Installation of a Butterfly Sanctuary"

Yoben Wolde '22, "How Do the Attitudes of Parents Born Outside of the Us Influence Their Children's Social Media Usage?"

ABSTRACTS

A'Nyeja Adams	Christopher Acosta
Daisy Ayala-Gomez12Robert Bailey6Joshua Bulavko7Jacqueline Clardy-Josephs7Katelyn Coghill7Katelyn Cook7Heidi Corbett6Dagim Desta8James Diaz8Donald Doyle8Jaelyn Evans8Olivia Green8Sarah Greene6Alissa Garcia-Cruz8Hailey Gilman68,9James Greenfield9Kyle Grundy9Charlotte Humphries9Sabina Johnson9Ranger Kinney9Tomi-Lauren McGinnis7Tyreck McFarlane10Kayla Morris10Paige Naples10William Olichney13Samantha Paulette10Christopher Perez-Merino8Seth Pruitt11Chiva Richard6Marion Small12Chantel Spinner12Kimberly Steele12Lillian Tacke8Daniel Trice12Nicholas Vazquez9Johnny Watters12	A'Nyeja Adams6
Robert Bailey	Ninfa Amador-Hernandez6
Joshua Bulavko	Daisy Ayala-Gomez12
Jacqueline Clardy-Josephs	Robert Bailey
Jacqueline Clardy-Josephs	Joshua Bulavko7
Katelyn Coghill	
Katelyn Cook 7 Heidi Corbett 6 Dagim Desta 8 James Diaz 8 Donald Doyle 8 Jaelyn Evans 8 Olivia Green 8 Sarah Greene 6 Alissa Garcia-Cruz 8 Hailey Gilman 6,8,9 James Greenfield 9 Kyle Grundy 9 Charlotte Humphries 9 Sabina Johnson 9 Ranger Kinney 9 Tomi-Lauren McGinnis 7 Tyreck McFarlane 10 Kayla Morris 10 Taylor Murphy 10 Paige Naples 10 William Olichney 13 Samantha Paulette 10 Christopher Perez-Merino 8 Seth Pruitt 11 Olivia Richard 6 Jennifer Ring 11 Sabina Sabat 11 Michaela Saunders 11 Ainsley Simmons 6 Marion Small 12 Chantel Spinner <td></td>	
Dagim Desta.8James Diaz.8Donald Doyle.8Jaelyn Evans.8Olivia Green8Sarah Greene.6Alissa Garcia-Cruz.8Hailey Gilman.6,8,9James Greenfield.9Kyle Grundy.9Charlotte Humphries.9Sabina Johnson.9Ranger Kinney.9Tomi-Lauren McGinnis.7Tyreck McFarlane.10Kayla Morris.10Taylor Murphy.10Paige Naples.10William Olichney.13Samantha Paulette.10Christopher Perez-Merino8Seth Pruitt.11Olivia Richard.6Jennifer Ring.11Sabina Sabat.11Michaela Saunders.11Caleb Schmitzer.11Ainsley Simmons.6Marion Small.12Chantel Spinner.12Nicholas Vazquez9Johnny Watters.12	
James Diaz	·
James Diaz	Dagim Desta8
Jaelyn Evans8Olivia Green8Sarah Greene6Alissa Garcia-Cruz8Hailey Gilman6,8,9James Greenfield9Kyle Grundy9Charlotte Humphries9Sabina Johnson9Ranger Kinney9Tomi-Lauren McGinnis7Tyreck McFarlane10Kayla Morris10Paige Naples10William Olichney13Samantha Paulette10Christopher Perez-Merino8Seth Pruitt11Olivia Richard6Jennifer Ring11Sabina Sabat11Michaela Saunders11Charlel Spinner12Charlel Spinner12Kimberly Steele12Lillian Tacke8Daniel Trice12Nicholas Vazquez9Johnny Watters12	5
Jaelyn Evans8Olivia Green8Sarah Greene6Alissa Garcia-Cruz8Hailey Gilman6,8,9James Greenfield9Kyle Grundy9Charlotte Humphries9Sabina Johnson9Ranger Kinney9Tomi-Lauren McGinnis7Tyreck McFarlane10Kayla Morris10Paige Naples10William Olichney13Samantha Paulette10Christopher Perez-Merino8Seth Pruitt11Olivia Richard6Jennifer Ring11Sabina Sabat11Michaela Saunders11Charlel Spinner12Charlel Spinner12Kimberly Steele12Lillian Tacke8Daniel Trice12Nicholas Vazquez9Johnny Watters12	
Olivia Green8Sarah Greene6Alissa Garcia-Cruz8Hailey Gilman6,8,9James Greenfield9Kyle Grundy9Charlotte Humphries9Sabina Johnson9Ranger Kinney9Tomi-Lauren McGinnis7Tyreck McFarlane10Kayla Morris10Paige Naples10William Olichney13Samantha Paulette10Christopher Perez-Merino8Seth Pruitt11Olivia Richard6Jennifer Ring11Sabina Sabat11Michaela Saunders11Ainsley Simmons6Marion Small12Chantel Spinner12Lillian Tacke8Daniel Trice12Nicholas Vazquez9Johnny Watters12	
Alissa Garcia-Cruz8Hailey Gilman6,8,9James Greenfield9Kyle Grundy9Charlotte Humphries9Sabina Johnson9Ranger Kinney9Tomi-Lauren McGinnis7Tyreck McFarlane10Kayla Morris10Paige Naples10William Olichney13Samantha Paulette10Christopher Perez-Merino8Seth Pruitt11Olivia Richard6Jennifer Ring11Kabina Sabat11Michaela Saunders11Ainsley Simmons6Marion Small12Chantel Spinner12Kimberly Steele12Lillian Tacke8Daniel Trice12Nicholas Vazquez9Johnny Watters12	
Alissa Garcia-Cruz8Hailey Gilman6,8,9James Greenfield9Kyle Grundy9Charlotte Humphries9Sabina Johnson9Ranger Kinney9Tomi-Lauren McGinnis7Tyreck McFarlane10Kayla Morris10Paige Naples10William Olichney13Samantha Paulette10Christopher Perez-Merino8Seth Pruitt11Olivia Richard6Jennifer Ring11Kabina Sabat11Michaela Saunders11Ainsley Simmons6Marion Small12Chantel Spinner12Kimberly Steele12Lillian Tacke8Daniel Trice12Nicholas Vazquez9Johnny Watters12	Sarah Greene6
James Greenfield	
James Greenfield	Hailey Gilman6,8,9
Kyle Grundy.9Charlotte Humphries.9Sabina Johnson.9Ranger Kinney.9Tomi-Lauren McGinnis.7Tyreck McFarlane.10Kayla Morris.10Taylor Murphy.10Paige Naples.10William Olichney.13Samantha Paulette.10Christopher Perez-Merino8Seth Pruitt.11Olivia Richard.6Jennifer Ring.11Sabina Sabat.11Michaela Saunders.11Caleb Schmitzer.11Ainsley Simmons.6Marion Small.12Chantel Spinner.12Lillian Tacke.8Daniel Trice.12Nicholas Vazquez9Johnny Watters.12	
Charlotte Humphries.9Sabina Johnson9Ranger Kinney.9Tomi-Lauren McGinnis.7Tyreck McFarlane.10Kayla Morris.10Taylor Murphy.10Paige Naples.10William Olichney.13Samantha Paulette.10Christopher Perez-Merino8Seth Pruitt.11Olivia Richard.6Jennifer Ring.11Sabina Sabat.11Michaela Saunders.11Caleb Schmitzer.11Ainsley Simmons.6Marion Small.12Chantel Spinner.12Lillian Tacke.8Daniel Trice.12Nicholas Vazquez9Johnny Watters.12	
Sabina Johnson9Ranger Kinney9Tomi-Lauren McGinnis7Tyreck McFarlane10Kayla Morris10Taylor Murphy10Paige Naples10William Olichney13Samantha Paulette10Christopher Perez-Merino8Seth Pruitt11Olivia Richard6Jennifer Ring11Sabina Sabat11Michaela Saunders11Caleb Schmitzer11Ainsley Simmons6Marion Small12Chantel Spinner12Lillian Tacke8Daniel Trice12Nicholas Vazquez9Johnny Watters12	
Ranger Kinney.9Tomi-Lauren McGinnis.7Tyreck McFarlane.10Kayla Morris.10Taylor Murphy.10Paige Naples.10William Olichney.13Samantha Paulette.10Christopher Perez-Merino8Seth Pruitt.11Olivia Richard.6Jennifer Ring.11Sabina Sabat.11Michaela Saunders.11Caleb Schmitzer.11Ainsley Simmons.6Marion Small.12Chantel Spinner.12Lillian Tacke.8Daniel Trice.12Nicholas Vazquez9Johnny Watters.12	•
Tomi-Lauren McGinnis7Tyreck McFarlane10Kayla Morris10Taylor Murphy10Paige Naples10William Olichney13Samantha Paulette10Christopher Perez-Merino8Seth Pruitt11Olivia Richard6Jennifer Ring11Sabina Sabat11Michaela Saunders11Caleb Schmitzer11Ainsley Simmons6Marion Small12Chantel Spinner12Lillian Tacke8Daniel Trice12Nicholas Vazquez9Johnny Watters12	
Tyreck McFarlane10Kayla Morris10Taylor Murphy10Paige Naples10William Olichney13Samantha Paulette10Christopher Perez-Merino8Seth Pruitt11Olivia Richard6Jennifer Ring11Sabina Sabat11Michaela Saunders11Caleb Schmitzer11Erin Schriever11Ainsley Simmons6Marion Small12Chantel Spinner12Lillian Tacke8Daniel Trice12Nicholas Vazquez9Johnny Watters12	
Kayla Morris.10Taylor Murphy.10Paige Naples.10William Olichney.13Samantha Paulette.10Christopher Perez-Merino8Seth Pruitt.11Olivia Richard.6Jennifer Ring.11Sabina Sabat.11Michaela Saunders.11Caleb Schmitzer.11Erin Schriever.11Ainsley Simmons.6Marion Small.12Chantel Spinner.12Lillian Tacke.8Daniel Trice.12Nicholas Vazquez9Johnny Watters.12	
Taylor Murphy.10Paige Naples.10William Olichney.13Samantha Paulette.10Christopher Perez-Merino8Seth Pruitt.11Olivia Richard.6Jennifer Ring.11Sabina Sabat.11Michaela Saunders.11Caleb Schmitzer.11Erin Schriever.11Ainsley Simmons.6Marion Small.12Chantel Spinner.12Lillian Tacke.8Daniel Trice.12Nicholas Vazquez9Johnny Watters.12	•
Paige Naples10William Olichney13Samantha Paulette10Christopher Perez-Merino8Seth Pruitt11Olivia Richard6Jennifer Ring11Sabina Sabat11Michaela Saunders11Caleb Schmitzer11Erin Schriever11Ainsley Simmons6Marion Small12Chantel Spinner12Lillian Tacke8Daniel Trice12Nicholas Vazquez9Johnny Watters12	
William Olichney.13Samantha Paulette.10Christopher Perez-Merino8Seth Pruitt.11Olivia Richard.6Jennifer Ring.11Sabina Sabat.11Michaela Saunders.11Caleb Schmitzer.11Erin Schriever.11Ainsley Simmons.6Marion Small.12Chantel Spinner.12Kimberly Steele.12Lillian Tacke.8Daniel Trice.12Nicholas Vazquez9Johnny Watters.12	
Samantha Paulette	• •
Christopher Perez-Merino	
Seth Pruitt.11Olivia Richard.6Jennifer Ring.11Sabina Sabat.11Michaela Saunders.11Caleb Schmitzer.11Erin Schriever.11Ainsley Simmons.6Marion Small.12Chantel Spinner.12Kimberly Steele.12Lillian Tacke.8Daniel Trice.12Nicholas Vazquez9Johnny Watters.12	Christopher Perez-Merino8
Jennifer Ring.11Sabina Sabat.11Michaela Saunders.11Caleb Schmitzer.11Erin Schriever.11Ainsley Simmons.6Marion Small.12Chantel Spinner.12Kimberly Steele.12Lillian Tacke.8Daniel Trice.12Nicholas Vazquez9Johnny Watters.12	•
Jennifer Ring.11Sabina Sabat.11Michaela Saunders.11Caleb Schmitzer.11Erin Schriever.11Ainsley Simmons.6Marion Small.12Chantel Spinner.12Kimberly Steele.12Lillian Tacke.8Daniel Trice.12Nicholas Vazquez9Johnny Watters.12	Olivia Richard6
Sabina Sabat.11Michaela Saunders.11Caleb Schmitzer.11Erin Schriever.11Ainsley Simmons.6Marion Small.12Chantel Spinner.12Kimberly Steele.12Lillian Tacke.8Daniel Trice.12Nicholas Vazquez9Johnny Watters.12	
Michaela Saunders.11Caleb Schmitzer.11Erin Schriever.11Ainsley Simmons.6Marion Small.12Chantel Spinner.12Kimberly Steele.12Lillian Tacke.8Daniel Trice.12Nicholas Vazquez9Johnny Watters.12	-
Caleb Schmitzer.11Erin Schriever.11Ainsley Simmons.6Marion Small.12Chantel Spinner.12Kimberly Steele.12Lillian Tacke.8Daniel Trice.12Nicholas Vazquez9Johnny Watters.12	
Erin Schriever.11Ainsley Simmons.6Marion Small.12Chantel Spinner.12Kimberly Steele.12Lillian Tacke.8Daniel Trice.12Nicholas Vazquez9Johnny Watters.12	
Ainsley Simmons6Marion Small12Chantel Spinner12Kimberly Steele12Lillian Tacke8Daniel Trice12Nicholas Vazquez9Johnny Watters12	
Marion Small12Chantel Spinner12Kimberly Steele12Lillian Tacke8Daniel Trice12Nicholas Vazquez9Johnny Watters12	
Chantel Spinner.12Kimberly Steele.12Lillian Tacke.8Daniel Trice.12Nicholas Vazquez9Johnny Watters.12	•
Kimberly Steele	
Lillian Tacke	
Daniel Trice	•
Nicholas Vazquez9 Johnny Watters12	
Johnny Watters12	
•	•
	Megan Westerman13

AbbyWhitlock	13
Madeline Wright	
Yoben Wolde	
Mia Wright	13

2022 presentations

Christopher Acosta M.A.T. '22, oral presentation

"French Aesthetic Theory: Visual History & Literacy in Secondary History Education" Faculty Mentor: Crystal Howell, Education

Symbolic visual and literary texts have captivated audiences from the early modern European period into the contemporary era. Recent teaching methods associated with aesthetic education have sought to incorporate visual media and literary texts to aid students in understanding the past. My study focuses on how aesthetic education can act as a bridge to activate a student's analytical, creative, and prior knowledge in secondary history classrooms. Using a combination of literary and visual materials, I used a mix-methods approach to assess student achievement after both direct and aesthetic instruction for two World History II tenth-grade classes. My findings convey the importance of differentiation by social studies educators seeking to improve students' skills in historical reasoning and literacy.

A'Nyeja Adams '22, exhibit

"The Growth of an African American Woman" Faculty Mentor: Chris Cohen, Art

This installation is a reflection of my learning skills from my studies of oil painting techniques, photography skills, and learning from life experiences - then making it into artworks. This exhibition is my way of depicting growth in a black woman's life. The challenges black women may face are: the oversexualization of our anatomy, dehumanization, face stereotypes regarding certain behavior, and attributes of everyday life. I have made these artworks to show the aspect of growth from a black woman's perspective. My paintings serve as a hopeful message to society by emphasizing the kind of beauty and growth that is possible through struggle. These paintings and photography are for these beautiful women to look back and think "I'm proud to be who I am despite the odds of the world. Despite what they say, I'm blooming into the woman I'd always known I'd be." As women we sprout, we bloom, we swell, we develop, and we flourish as does a beautiful flower.

Ninfa Amador-Hernandez '22, oral presentation

"Public Policy Analysis: From Senior Research to Real-World Applications" Faculty Mentor: Aaron Shreve, Political Science

Immigration reform has been a controversial issue throughout U.S. history and it has been an especially salient topic during the past two presidential elections. The impact of immigration reform on not only the macroeconomic level but also the social policy level are worthy of both theoretical policy analysis and real-world applications. In my senior research, I focused on the relationship between quality of life and immigration status. I argue that immigration reform improves the quality of life of not only immigrants but also the communities in which they reside. I was able to further my classroom experience by attending a policy conference, sponsored by a RISE grant, where I learned to communicate how research informs policy solutions.

Robert Bailey'24, Heidi Corbett '24, Hailey Gilman '22, Sarah Greene, '23, Olivia Richard '23, Ainsley Simmons '25, exhibit

"Craftivism to Raise Awareness of Global Plastic Pollution" Faculty Mentor: Karin Warren, Environmental Studies & Science

The arts have the power to engage on a range of topics, and artistic practice has been used to raise awareness, influence behaviors, build knowledge, and create empathy. "Craftivism" is the act of using craft projects to advance social or environmental causes. Craftivism may be used to advocate for change, communicate, increase knowledge, for storytelling, or as an interdisciplinary tool to better understand a complex problem. This exhibit includes seven priginal works created by the "Sustainability Principles and Practice" class. Each work features an organism that is impacted by plastic pollution. Works were created from plastic waste collected by the class and contributed by the Randolph community, and hand-stitched on muslin canvas. This exhibit's participants will be available during the exhibit to discuss their featured organism and how plastic waste affects it, the technique they used to create their craftivism work, and strategies to address global plastic waste.

Joshua Bulavko '22, oral presentation

"Sovereignty and Survival: Lakota Resilience since the American Indian Movement"

Faculty Mentor: Gerry Sherayko, History and Museum & Heritage Studies

The Lakota Nation remains one of the most storied and recognizable American Indian nations within the United States, but narratives of their history are often overlooked. Despite the Lakota people being a fundamental part of American history, essentialist scholars have avoided providing accounts of the Lakota story, as it is an uncomfortable element of the American past. The recent protests surrounding the construction of the Dakota Access Pipeline in and around the Standing Rock Lakota reservation are a component of a decades-long resurgence in American Indian activism, as is the continued battle against the Coronavirus. Once thought to be an extinct group of people, the Lakota have subdued attempts of genocide such as the Wounded Knee Massacre of 1890. They also defeated the threats of assimilation, which galvanized the industrial boarding schools throughout the United States meant to "kill the Indian and save the man." The Lakota have overcome poverty, discrimination, and racism to avoid erasure through the strength of their collective cultural resilience since the American Indian Movement. This resilience is seen through their connection to sacred landscapes and continued protests to protect natural resources and sovereign values. This presentation will feature highlights from the fortuitous trip in the American West - South Dakota, North Dakota, Wyoming, and Montana. This presentation seeks to focus on the sacred ties that the Lakota have with their cultural landscapes, as well as how they embody the lives of the resilient legends that came before them, such as Red Cloud, Sitting Bull, and Crazy Horse.

Joshua Bulavko '22, Tomi-Lauren McGinnis '23, oral presentation

"Assessing Virginia's Monument Landscape" Faculty Mentor: Gerry Sherayko, History and Museum & Heritage Studies

As a result of the reaction to the murder of George Floyd, the year 2020 witnessed an unprecedented level of protests and the questioning and often removal of longstanding monuments, many but not all celebrating the Confederacy and the "Lost Cause." Yet many such monuments remain standing today throughout Virginia, including in Lynchburg. For this project we will speak with political, cultural, and religious leaders throughout the Commonwealth to understand the changes in the monument landscape, their involvement with the changes, how their communities have responded to them, and plans for the future. Augmenting these oral accounts with site visits, secondary sources, and primary materials found in local archives, we will be able to assess the history and historical context of Virginia's monument landscape and the current views on these monuments, with the goal of contributing to the ongoing conversations about what could be done with them.

Jacqueline Clardy-Josephs '23, poster

"Walk the Plank: Virtual Risk-Taking and Cheating in Adolescents" Faculty Mentor: Elizabeth Gross, Psychology

Disgust sensitivity and risk-taking are related to self-reported moral decision making, such as the trolley problem. Researchers investigated whether both self-reported disgust sensitivity and risk-taking traits predict actual cheating and risk-taking behaviors. The results suggest that self-reported disgust sensitivity does predict risk-taking behaviors and moral judgments but not cheating behaviors.

Katelyn Coghill M.A.T. '22, oral presentation

"The Effects of Noncontingent Fixed Interval Reinforcement on Students with Autism"

Faculty Mentor: Margaret Schimmoeller, Education

Nicole was diagnosed with autism at the age of three and has recently displayed some aggression and self injurious behaviors in the classroom. In her current classroom, Nicole only presented with reinforcement in the absence of aggression (towards others) or self injury, but this was not working for her. Although this method of behavior reinforcement works across many special education settings, there is still the question as to whether rewarding students on a consistent schedule, regardless of behavior, could lead to a reduction in aggression and self injury. In my action research study, I tracked instances of aggression and self injury in two students with Autism Spectrum Disorder while providing first contingent and later fixed interval, non-contingent positive reinforcements to see which method is more effective in managing classroom behavior. In this talk I will discuss how these two reinforcement approaches affect students with autism.

Katelyn Cook '22, poster

"Can the 'Speed Gene' Be Used to Distinguish Thoroughbred From Non-Thoroughbred Horses?" Faculty Mentor: Amanda Rumore, Biology

Thoroughbreds are a horse breed developed specifically for racing and jumping purposes. This specific athleticism in Thoroughbreds is linked to certain genes (alleles) which have been previously identified as markers of the breed. This research study aimed to see if genetic screening for these Thoroughbred-specific alleles could be used to distinguish them from non-Thoroughbred breeds. Hair follicle samples from 11 registered and tattooed Thoroughbred horses and 11 non-registered, non-tattooed horses of various breeding were collected. DNA was extracted, quantified, and analyzed for purity. Using the polymerase chain reaction (PCR), we tested for the Thoroughbred-specific 227 bp SINE-insertion in the promoter region of the MSTN gene, which affects muscle growth and is linked to enhanced racing performance. Our results suggest there was no measurable difference in the detection of the SINE insertion between the Thoroughbred and non-Thoroughbred horses and suggests the allele may be more prevalent among non-Thoroughbred breeds.

Dagim Desta '23, poster

"A Deep LSTM Network for Apple Stock's Price Forecasting" Faculty Mentor: Jia Wan, Computer Science & Mathematics

Stock price instabilities have a significant impact on many financial activities of the world. The development of a reliable prediction model could offer insights in stock price fluctuations, behavior and dynamics, and ultimately could provide the opportunity of gaining significant profits. This project explores the application of the LSTM model. This model exploits the ability of convolutional layers for extracting useful knowledge and learning the internal representation of time-series data as well as the effectiveness of (LSTM) layers for identifying short-term and long-term dependencies.

James Diaz '22, oral presentation

"The Relationship Between Teen Sports Participation And Delinquency" Faculty Mentor: Danielle Currier, Sociology

Sports programs are community-funded, government-funded, or independently owned and operated institutions that provide an outlet for youth to participate in sports. Delinquency is a type of violent crime against a person or property, more specifically aggravated assault (domestic and non-domestic), burglary, vandalism, and robberies. The objective of this study was to examine the relationship between teen sports participation and delinquency rates over time in the cities of Richmond and Lynchburg, Virginia. Analyzing the number of sports programs available in these two cities and how that has affected the delinquency rates over time within the communities was a technique used to determine if the relationship was either positive or negative. While prior studies show that the relationship between these two variables is negative, the present study concluded that the relationship between delinquency rates and teen sports participation is a positive association.

Donald Doyle M.A.T. '22, oral presentation

"Reconnecting With History: Using Historical Fiction In the History Classroom" Faculty Mentor: Crystal Howell, Education

Have you ever been able to time travel? While the technology to time travel may never be developed, through literature I have been able to travel throughout time and interact with some of my favorite historical figures and learn about ones I never expected . From the Italian renaissance in Assassin's Creed to the American Revolution in Washington's Spies to the colonization of Africa in Things Fall Apart, I have been able to travel back in time through the use of historical fiction. As teachers, we are tasked with actively engaging our students and providing them with the opportunity to directly interact with the time period. Interaction through literature will have a powerful impact on their overall achievement. In this talk, I will be discussing my study on the use of historical fiction to increase students' affective engagement and achievement in social studies classrooms.

Jaelyn Evans '22, Olivia Green '22, Christopher Perez-Merino '22, Lillian Tacke '23, poster

"The Southeastern Theatre Conference Experience" Faculty Mentor: Stephanie Earl, Theatre

The RISE grant was used to partially fund attendance at this year's Southeastern Theater Conference Convention (SETC). At SETC, we were able to take advantage of a variety of opportunities, including networking with professionals, hearing keynotes from esteemed voices in the theater and film world, and attending workshops to improve our craft. This trip has situated us competitively in the vast and ever-growing field of theatre.

Alissa Garcia-Cruz '22, oral presentation

"A Donation's Journey: The Gathering, Dissemination, and Prioritization of Donated Goods By Social Service Organizations." Faculty Mentor: Danielle Currier, Sociology

In this project, I focused on examining how social service organizations gather, prioritize, and distribute donations through their services and programs to assist people experiencing homelessness. Using a mixed-method design, I conducted in-depth interviews with organizations, conducted a content analysis of their websites and published materials, and did site visits with two organizations to take pictures of their facilities. The most important findings were: 1) all the organizations reported cooperating and building professional connections with other service organizations is the heart of their success; 2) they all reported a high level of acceptance of their clients' diverse needs and fulfilled their client's needs through a variety of approaches; 3) there were deep effects on the organizations because of Covid-19. The results of the research add to the understanding of how to define and encourage needed social, economic, and political changes for those experiencing housing, income, and food insecurity.

Hailey Gilman '22, oral presentation

"Evaluating the Impacts of Seagrass Restoration on Ecosystem Carbon Sequestration"

Faculty Mentor: Sarah Sojka, Physics and Environmental Studies & Science

Carbon storage by healthy seagrass meadows can help offset human carbon emissions, but understanding the overall impact of these seagrass beds requires understanding the processes affecting carbon storage within the beds and the impact on carbon storage within adjacent areas. In this study, we took sediment samples for percent fine sediment and percent organic matter at 27 locations within a shallow coastal lagoon, before (2003-2004) and after (2020) seagrass restoration. The change in organic content decreased with distance from the seagrass bed (R2=0.21, p=0.02). Sites less than 1,390 m from a seagrass bed increased in organic content and sites further away decreased in organic content following this seagrass restoration project. This indicates that some of the carbon stored in the seagrass beds may be relocated from other parts of the ecosystem, not a true enhancement of carbon storage.

Hailey Gilman '22, Nicholas Vazquez '23, poster

"January-Intensive Term at Washington University in St. Louis" Faculty Mentor: Peter Sheldon, Physics

The Randolph Innovative Student Experience (RISE) scholarship program enables students to pursue scholarly experiences both within and beyond the Randolph College community. Students Hailey Gilman, 22' and Nicholas Vazquez, '23 received RISE scholarships to experience a January-Intensive term in engineering at Washington University in St. Louis this past winter. While at Washington University, Hailey and Nicholas experienced a two-week intensive course in electrical and electronic engineering under the supervision of senior Washington University faculty, Dr. Emir Osmanagic and Dr. Darko Ivanovich. This accelerated coursework provided an excellent opportunity to experience a university-level engineering course. In addition, opportunities were provided to learn about the culture of engineering, to learn about how an engineering school is similar to and different from Randolph College, to network within the Washington University community, visit start-up companies, hear guest speakers, and tour the campus.

James Greenfield M.A.T. '22, oral presentation

"Questioning Engagement: the Effect of Inquiry Instructional Models on Classroom Engagement"

Faculty Mentor: Crystal Howell, Education

At times teaching can feel like you are talking to a brick wall, especially this past year as students returned from online learning back to the classroom. Like many teachers, I found that many of my students continued to take advantage of the elimination of due dates, testing, and mandatory attendance that many school systems adopted at the beginning of the pandemic. Now it is more important than ever for teachers to plan lessons that break down that brick wall by grabbing their attention and keeping it. One method that can be used for this task is the inquiry/integrative instructional model, which puts the control of the lesson into the hands of the students as the teacher facilitates.

Kyle Grundy '22, poster

"Creation of a Sustainable Amphibian Habitat in Randolph College's Organic Garden"

Faculty Mentor: Erin Heller, Biology

Virginia is home to a wide variety of amphibian species, including 28 species of native frogs and toads and at least 50 native species of salamanders, the highest diversity of salamanders in North America. Amphibians are one of the most sensitive groups of animals due to deleterious anthropogenic effects on the environment. Pollution is especially detrimental to amphibians, as many species "breathe" through their skin, directly absorbing contaminants in their environment into their bodies. The goal of this project is to create a safe, clean, and protected habitat for native amphibian species to live and reproduce and to contribute to the health and well-being of amphibian populations.

Charlotte Humphries M.A.T. '22, oral presentation

"Flipping the Classroom: When Students Take the Driver's Seat in Their Own Education"

Faculty Mentor: Crystal Howell, Education

Many social studies teachers struggle to hit all content curriculum while still having classroom time for peer-led interactive activities. In this study, I examined how a flipped classroom model in a middle school social studies classroom affected student achievement. I argue that, by using a flipped classroom model, social studies teachers can incite greater social interaction among students and increase differentiation in teaching methods, which can lead to greater academic achievement for their students. Using a quantitative approach, I collected pre- and post-test data to determine student growth over two comparable units of instruction. I then used a t-test to analyze these results. My data revealed that there was no statistically significant change between a flipped classroom and a traditional classroom instructional model. As more content is added to the social studies curriculum, learning to utilize a flipped classroom model can help students have opportunities to apply their knowledge in interactive and thoughtful ways.

Sabina Johnson M.A.T. '22, oral presentation

"Bust the Buzzard: Comparing Heterogeneous and Homogeneous Small Reading Groups"

Faculty Mentor: Margaret Schimmoeller, Education

Stepping into your first teaching classroom can be stressful. Then add several reading instruction approaches, but without a clear method or strategy for how to execute those approaches. I found this to be the case when I entered my classroom as a new teacher. As the General Assembly of Virginia passes new legislation that changes the way teachers will have to approach reading instruction, new and veteran teachers must carefully consider which approaches are the most effective in their classrooms. There are several approaches to reading instruction and scholars continue to debate which of these approaches best supports students' reading comprehension. In this study, I compared the effect of homogeneous and heterogeneous reading groups on second-grade students' reading comprehension.

Ranger Kinney '24, oral presentation

"The U.S. Left in the 'Age of Organization" Faculty Mentor: Gerry Sherayko, History and Museum & Heritage Studies

From 1886-1921 there was a powerful and radical labor movement in the U.S. that, at its height in 1919, was able to ride the tide of revolution to bring the entire city of Seattle under control of a workers' government. Today, the U.S. working class is the least organized of any industrialized country. This presentation, a product of an Independent Study with Professor Sherayko, will examine the high tide of radical labor activism and the political Left, which brought revolution to the shores of the U.S. In examining these movements, the causes of the destruction of the US labor movement and radicalism will be examined with a critical focus on both the external and internal challenges the Labor-Left has faced in the U.S.

Tyreck McFarlane '22, poster

"Remote Terrain Mapping of the Mountain Biking Trails in Lynchburg" Faculty Mentor: Peter Sheldon, Physics

Mountain biking is a premiere leisure activity in Lynchburg which is evident by the numerous trails located in the area. The descriptions and statistics of these trails such as elevation or distance can be sought after online or via map at their respective locations. However, how accurate are those readings? The objective of this study was to test just that by taking a small sample of these trails and mapping them ourselves using a gyroscope and accelerometer sensor.

Kayla Morris'22, exhibit

"Subtle Moments" Mentor: Jill Waugh, Photographer

When taking photos, I find myself capturing the underrated moments more often than not. While action shots and staged photos make striking images, I believe the little moments have the opportunity to make a statement too. This gallery contains pictures from various situations but delicately frames the subject in a candid way. Even when in a staged scenario where the subject is aware their picture is being taken, the viewer will see that there is no forced positioning or uncomfortability to be found. These subtle moments are what makes my photography unique.

Taylor Murphy '22, oral presentation

"Empathy in Elementary Education: Assisting in the Development of the Habits of Mind"

Faculty Mentor: Margaret Schimmoeller, Education

Have you ever had a hard time understanding and relating to how someone else felt? Even as adults, empathy can be a challenging skill to demonstrate and even more challenging to help others—especially children—develop. But social-emotional skills like empathy are vital for children if we want them to become capable, independent, and healthy adults. Empathy allows students to build relationships and display positive behaviors toward one another. I examined second-graders' development of empathy before and after a social studies unit centered around content that encouraged students to apply empathy skills in order to better understand the information. I found that students' development of empathy improved after our three-week unit. In my presentation, I explain the importance of empathy and offer suggestions for other teachers.

Paige Naples '22, Madeline Wright '22, poster

"Effects of Increased Temperature and Carbon Dioxide on the Growth of Tomato Plants"

Faculty Mentor: Kristin Bliss, Biology

Rising atmospheric CO2 levels have been a long-standing environmental issue. With CO2 levels rising each year, 2.6ppm in 2020 alone, it is clear that the trend will continue (Stein, 2021). The increase of CO2 in the atmosphere has caused temperatures to increase as well (Lindsey, 2014). It is important to study the effects that these changes may have on the growth of crops in order to prepare for the future agricultural climate and its needs. This study used four different atmospheric chambers to test the effects of increased CO2 levels and temperature on the growth rates of tomato plants. It was predicted that the tomato plants exposed to increased CO2 would have significantly higher heights, above ground biomass, and below ground biomass than those of the control plants. It was also predicted that the tomato plants exposed to increased temperatures would have significantly lower heights, above ground biomass, and below ground biomass than the control plants. The plants exposed to increased CO2 confirmed the hypothesis that height, above ground biomass, and below ground biomass would increase. This finding was consistent with research conducted prior to the experiment. The plants exposed to only increased temperature did not have significantly lower height, above ground biomass, or below ground biomass. This finding does not support the hypothesis and does not coincide with previous research conducted. A plausible reason for finding no significant difference could be that the plants were watered regularly causing them not to experience drought stress, as drought stress was shown to cause negative impacts in previous studies.

Samantha Paulette '22, oral presentation

"Implications of Instagram use on Young Female Users" Faculty Mentor: Jennifer Gauthier, Media and Culture

Instagram is one of the largest social media platforms used among young girls and young women today. With a platform that is so focused on images and likes, it is necessary to consider the effects of instagram use on many growing and developing young girls. My research focuses primarily on how young women and girls, aged 15-21, who use the popular social media platform, Instagram. By examining different Instagram profiles and posts of young female Instagram users, the present research considers if there is a correlation between what images young women view on Instagram and what images they decide to post on their own Instagram platforms. In this study, I conduct a content analysis of 10 Instagram profiles, approaching each Instagram user's post through a semiotic lens. Finally, I conclude with a discussion of my findings as they fit into larger concepts of feminist culture and new media.

Seth Pruitt '22, poster

"VMX Conference Orlando, Florida" Faculty Mentor: Kristin Bliss, Biology

In January of 2022, I used my RISE grant from Randolph College to attend the nation's largest veterinary conference. This conference was held by Veterinary Meetings and Expos (VMX) for staff, students, prospective students, researchers, and any other professionals in the field. This four day event was a wonderful opportunity for me to meet, mingle, and network with some of my hopefully future peers. It will also look outstanding on a resume or application. In my poster, I will include pictures of myself at the conference and the conference itself. I will also include who I talked to, what I learned, and how this helped me be accepted into Lincoln-Memorial University's College of Veterinary Medicine.

Jennifer Ring M.A.T. '22, oral presentation

"Improving the Behavior of Middle School Students: Positive Behavior Intervention System" Faculty Mentor: Margaret Schimmoeller, Education

Imagine being in a classroom with yelling, physical altercations, vulgar language, and defiant behaviors while also trying to learn about figurative language from your English teacher. Would you be able to learn in an environment like this? I used a Positive Behavior Intervention System (PBIS) to consider the decrease of disruptive behavior in a sixth-grade general and special education classroom. I argue that PBIS in an inclusive middle school classroom promotes a positive learning experience, increases chances for positive interactions, and smooths redirections. Using a quantitative approach, I tracked individual students' specific disruptive and positive behaviors both pre- and post-intervention over six weeks. My data show a statistically significant decrease in disruptive behaviors and increase in positive behaviors when using a PBIS. In my presentation, I make recommendations for PBIS implementation by other teachers.

Sabina Sabat '22, oral presentation

"(Re)painting Marble: An Exploration of Diversity in the Randolph College Ancient Collections"

Faculty Mentor: Susan Stevens, Classics and Museum & Heritage Studies

Through centuries of exclusivity, the ancient world has become an object of study for the wealthy, white, and male - making it seem inaccessible and inapplicable to modern day. In reality, constant mixing of peoples, cultures and evolving technology meant that the ancient world connected diverse, thriving groups of people into an amalgam of variety. This talk aims to summarize the findings of a 2021 RISE Grant project: a series of video essays that aimed to highlight the diversity of the ancient objects available at Randolph College emphasizing gender and religion. Randolph's collection is one of everyday experience - one with which students can find delight, connection, and recognition. The things that live and breathe about our society, the color and vibrancy of our lives, existed in the ancient world as well. This talk will highlight the artifacts that make Classics accessible to Randolph students and the greater Randolph community.

Michaela Saunders M.A.T. '22, oral presentation

"Kind Criticism: Effects of Peer Evaluation on Student Perception of Ability and Mindset"

Faculty Mentor: Margaret Schimmoeller, Education

Many of us have collaborated with other people in some way, whether on an assignment at school, a project at work, or making dinner with our family. We make comments on one another's performance during those activities, offering suggestions and ideas for how to do things better or more easily. The COVID-19 pandemic made working with others more difficult in many contexts, especially classrooms. In this action research project, conducted in a Virginia fifth-grade classroom, I examine peer-reviews as a collaborative strategy. The aim of this study is to understand the effects of peer-reviews on students' perception of ability and mindset.

Caleb Schmitzer M.A.T. '22, oral presentation

"Cooperative Learning In the Classroom: Increasing Achievement and Reducing Disruptions"

Faculty Mentor: Crystal Howell, Education

Did you ever get in trouble for talking with friends during class in middle school? I know I did. In this study, I aimed to reduce disruptive behaviors like off-task talking while helping my students' knowledge grow by using cooperative learning methods. During my action research study, I taught two units, one using only direct instruction and the other incorporating cooperative learning. I speculate that the structure provided by different cooperative learning methods helped students engage with each other in a controlled rather than disruptive way, hopefully leading to better understanding of material and fewer disruptions.

Erin Schriever '23, poster

"Accuracy of an iPhone 12's Accelerometer on Five- and Fifteen-Degree Inclines"

Faculty Mentor: Peter Sheldon, Physics

Smartphones are ubiquitous, even for most low-income students [1]. Smartphones contain sensors that can provide tools for making scientific measurements, and they are accessible. In this experiment, we are exploring an anomaly previously seen by us, but not confirmed in the literature: an iPhone12 and a PASCO Scientific Accelerometer were attached to a cart and sent down an incline to compare measurements of acceleration. The data from the two devices was compared and a discrepancy was found. On a lower-angle incline, we see the acceleration of the iPhone12 decaying (not remaining constant as expected) as it went down the incline. This result may indicate that an iPhone12 is not effective at measuring constant accelerations, which is a common type of motion studied in introductory physics, and which is required in order to be able to use a phone for inertial navigation (our final goal). Further experiments need to be done. [1] M. Anderson, J. Jiang, et al., "Teens, social media & technology 2018", Pew Research Center 31, 1673-1689 (2018).

Marion Small '22, oral presentation

"Cognition Extended and Assistive Technology" Faculty Mentor: Kaija Mortensen, Philosophy

Currently in education, students with learning disabilities and other cognitive deficits are not treated as capable and complete by their peers, educators, and even sometimes themselves. This differential treatment is because many think of cognition as happening solely in the brain. In contrast, this talk seeks to apply Clark and Chalmers' (1998) Extended Mind Thesis to develop a more ethical approach. When we view an individual's cognitive processes as including aspects of the physical environment, it becomes clear that tools such as assistive technologies should be treated as integral parts of persons deserving respect rather than optional tools that confer unfair advantages. Viewing the world this way allows people with cognitive deficits to be treated as capable and complete.

Chantel Spinner '22, oral presentation

"I am Strong, I am Invisible, I am a Black Woman." Faculty Mentor: Danielle Currier, Sociology

For black women in the United States, being pregnant and giving birth is not as simple and magical as it appears for their white counterparts. Black women and infants disproportionately die more than any other race in the U.S., in part because structural racism is still present in policies and practices in our society. Research shows that for many black women, pregnancy, birth, and postpartum are dangerous, scary, and overall outcomes of survival and or trauma may be unknown for both mother and baby. In this presentation l address: 1) the history of black maternal and infant health in the United States and structural practices that create inequities for black women and their children; 2) statistics of maternal and infant mortality in the United States: 3) why black maternal and infant mortality is important for society to know about and address; and 4) data gathered from in-depth interviews with black American women who have experienced pregnancy, childbirth, and postpartum; and 5) ideas on resolving these issues with new policies. Supporting the existing statistical data showing racial inequities, all interview participants faced similar types of stress and stressors, such as provider stress, partner stress, financial stress, regardless of their class status. I will offer an analysis of why women in this diverse group experienced common things focusing on how birth, infant, and maternal outcomes in the United States are highly dependent upon the socially constructed ideas of race, class, and gender.

Kimberly Steele '22, oral presentation

"Minimization as a Coping Strategy for Sexual Assault: Stigma Management and Coping Strategies" Faculty Mentor: Danielle Currier, Sociology

Sexual assault is a complicated issue that occurs more than is reported or documented. Sexual assault is interpreted differently depending on the context and the person experiencing it. In my research, I interviewed 14 women between 20-58 years old who had experienced rape or sexual assault. Major findings were that many of them had re-interpreted and re-labeled their experiences over time; most minimized what had happened to them in comparison to what they thought others had experienced; and incidents were often minimized by others, including family, friends, and law enforcement. Two key points of interest were that many had little sexual education and their knowledge about sexual assault had been learned from churches and the media. I found a high level of "himpathy" among victims and people in their lives – expressing more sympathy for the perpetrator than for the victim.

Daniel Trice M.A.T. '22, oral presentation

"Never Happy, Always Angry, So Much Drama: Drama Activities to Promote Spoken French"

Faculty Mentor: Crystal Howell, Education

High school students often experience depression, frustration, anger, in short, a lot of drama. In this study I looked at different ways of motivating 23 French Ill students in a suburban high school in Central Virginia to perform outside of their comfort zone and encourage fluency or more natural speaking by trying to relate to some of these emotions. I examined the chief impingement on speaking, the affective filter, and how to lower it. To do so I introduced authentic, relatable materials and created a performance-based drama activity to practice modeling authentic speech. Will students working with and creating mixed media in the target language demonstrate greater fluency and a lower affective filter? My results did not provide me with a clear answer, but they did show me that this is a topic that merits further discussion.

Johnny Watters '22, Daisy Ayala-Gomez '22, oral presentation

"Pigments, Pressure, and Principles: The Effect of Colors on Stress and Moral Decision Making"

Faculty Mentor: Elizabeth Gross, Psychology

Previous research has examined how color alters stress and how stress alters moral decisions. However, the interaction between color and stress on moral decision-making has not been investigated. The present research combined morality, stress, and color to investigate how predisposed color preference and immersive color environments affect stress and moral decisions in college students. Participants were acutely stressed out, exposed to 15 immersive color environments and moral dilemmas via virtual reality, and then asked their color preference. We found no statistically significant results. However, there is a noteworthy implication. Participants who were color matched experienced less stress than those who were not color matched, except in the red condition, suggesting that the associations between colors and emotions may override the preconceived notion that color preference alone can reduce stress. Future research on this relationship with modifications, such as different moral tasks, or testing with different colors could expand research regarding morality, stress, and color.

Megan Westerman '23, William Olichney '24, oral presentation

"America's Wars in Asia and Public Opinion, 1950-1975" Faculty Mentor: Selda Altan, History

During the periods of both the Korean and Vietnam Wars, public opinion was altered in response to events of wartime. This presentation focuses on a more recent period, namely the Cold War, with particular attention to the American public's perception of Asian societies and political systems during U.S. military operations in Korea and Vietnam. We specifically look at Cold War public propaganda to understand how the wartime depiction of Asian people in U.S. public media nurtured and amplified anti-Asian sentiments. We argue that the Orientalist discourse used during American interventions in Asia and the Middle East has created an image of Asian societies as "backward" and "inferior" communities needed the civilizing hand of the U.S., ultimately degrading their dignity in the eyes of the general public and turning them into targets of racist violence.

Abby Whitlock '23, poster

"Randolph Thrive: Promoting Healthy Minds and Lifestyles Through Nature" Mentor: Riley Lorson '21, Sustainability & Special Projects Coordinator

Randolph Thrive is a campus-wide, self-navigated program designed to provide spaces where students can connect with nature and gain psychological benefits from time spent there. Inspiration for Randolph Thrive stems from the increasing statistics of college students with mental health concerns along with research showing the positive impacts of a campus nature program. I have worked under Riley Lorson and Dr. Warren's supervision, with support from the Lipscomb Library, Health and Counseling Center, and Sustainability Council to expand Thrive. The program identifies six outdoor spaces and one indoor space in the Library to be accessible during unfavorable weather conditions, as well as a website including additional Thrive and local nature information. The Thrive program also has equipment which can be checked out at the Library for student use. My poster displays these Thrive spaces and highlights ideas for involving the program in student life.

Yoben Wolde '22, exhibit

"How Do the Attitudes of Parents Born Outside of the U.S. Influence Their Children's Social Media Usage?"

Faculty Mentor: Jennifer Gauthier, Media and Culture

The focus of my research is on how the attitudes of parents who were born outside the United States influence the social media usage of their collegeaged children. As an international student myself, I was interested in finding a solution to the problem that foreign students are experiencing because I, too, had difficulty finding common ground with my parents. I interviewed international students and their parents to determine how each views social media. I compiled my findings into a short documentary. I hope my documentary will help students and their parents understand each other and reach common ground so they can have a better relationship.

Mia Wright '23, poster

"Installation of a Butterfly Sanctuary" Faculty Mentor: Karin Warren, Environmental Studies & Science Mentor: Riley Lorson '21, Sustainability & Special Projects Coordinator

Randolph College's campus hosts many bees, wasps, birds, and other species that help with pollination. This project focused on providing additional habitat, breeding space, and food to support native butterfly populations including species such as Swallowtails, Whites and Sulphurs, Gossamer Wings, Brush Footed, and Skippers. Butterflies benefit from the cultivation of native plants, which act as host plants. The color and nectar of native flowers attract butterflies to the host plants that provide the necessary needs for the organism. Host plants help caterpillars as a food source and butterflies come to visit, giving them a place to lay their eggs. Since the 1990s, the global butterfly population has significantly declined. The habitat I created aims to offset this decline in the Lynchburg area by increasing the population of butterflies.

keynote speaker **MICHAEL PENN**

Associate Professor, Department of Mathematics and Computer Science

Michael Penn, Ph.D. is an Associate Professor in the Department of Mathematics and Computer Science at Randolph College. In addition to teaching courses across the mathematics curriculum, he conducts an active research program in the field of Representation Theory as it is applied to theoretical physics. He has written a dozen research articles which have been published in the Journal of Algebra, the Journal of Pure and Applied Algebra, the Journal of Mathematical Physics, and given numerous research talks at national and international conferences.

Michael is also distinctly active in the popularization of mathematics via two YouTube channels with a combined subscriber count of over 220,000 from over 100 different countries with a total of 36 million views, averaging 1.5 million views per month.



The Symposium of Artists and Scholars is arranged by the Center for Student Research.

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Michael Penn, Associate Professor of Mathematics Holly Tatum, *Director, Center for Student Research* Luisa Carrera, *Administrative Coordinator, Center for Student Research*

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