



THE RANDOLPH COLLEGE
SYMPOSIUM OF
ARTISTS AND
SCHOLARS

APRIL 17, 2024

Welcome



Dear Symposium Attendee,

Welcome to Randolph College's 16th 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-three 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 members of the Center for Student Research who collaborated on organizing this symposium and the 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,

A handwritten signature in black ink that reads "Sue Ott Rowlands". The signature is written in a cursive, flowing style.

Sue Ott Rowlands

President

SCHEDULE

9:00-9:30 a.m.: Light breakfast and coffee (Ashley Jack Room, Smith Hall)

9:30-10:30 a.m.: Welcome and keynote address (Ashley Jack Room, Smith Hall)

- Welcome and introduction–Holly Tatum, Director of the Center for Student Research
- Keynote lecture, “Searching for Meaning, Finding Philosophy” - David T. Schwartz, Mary Frances Williams Professor of Humanities, and Professor of Philosophy

10:45 a.m. to Noon: Poster presentations and Exhibits (Hampson Commons)

12:15-1:15 p.m.: Buffet lunch (Ashley Jack Room, Smith Hall; RSVP required)

1:30-3:15 p.m.: Oral Presentations (Nichols Theatre, Klein Boardroom)

Oral Presentations:

NICHOLS THEATRE (Moderator: Jesse Kern)

1:30 p.m. Madelyn Friel '25 & Natalyn Stanley '25, “Antioxidant Assessment of Wine Components”

1:45 p.m. Michelline Hall '24 MEd, “Artistic Avengers Assemble: Uniting Public Schools and Arts Centers for Heroic Impact”

2:00 p.m. Cat Pressley '24, “The Columbian Exhibition and the Display of Race, Gender, and Culture”

2:15-2:30 p.m. Break

2:30 p.m. Madison Daniels '24, “Too Much of Good Things”

2:45 p.m. Izaiah Burgos '24, “The Effectiveness of Clicker Training for Teaching Cooperative Care to Captive Leopards (*Panthera pardus*)”

3:00 p.m. Caleb Hendrix '24 MAT, “Breaking the Block: Teaching a Block Schedule in Sections to Increase Engagement”

KLEIN BOARDROOM (Moderator: Kaija Mortensen)

1:30 p.m. Aaron Scott '24, “A World in Flux - What I Learned Presenting at a National English Honor Society Conference”

1:45 p.m. Zachary Bishop '24, “A Practical Guide to Interfaith Conversation”

2:00 p.m. Jennifer Moore '24 MAT, “When Will I Use This?: The Solution to Higher Interest and Achievement in Chemistry”

2:15-2:30 p.m. Break

2:30 p.m. Jenna Fink '25 MAT, “Pop a Squat: How Flexible Seating Affects Off-Task Behavior among First-Grade Students”

2:45 p.m. Jadin Wilkening '24, “STEM to Screen: Exploring the Math & Science Behind Pixar’s RenderMan”

3:00 p.m. Isaac Carney '24 & Luke Chapman '25, “Verifying the Decay Anomaly Present in Smartphone Accelerometers”

POSTERS & EXHIBITS

1. **Abby Baucom '24**, "Mindset Matters: Exploring Secondary Teachers' Growth and Fixed Mindsets over Six Weeks"
2. **Izaiah Burgos '24**, "The Effectiveness of Clicker Training for Teaching Cooperative Care to Captive Leopards (*Panthera pardus*)"
3. **Kathryn Davis '24**, "The School for Field Studies - Marsupials of Australia"
4. **Isabelle Fenton '24**, "Literature and the Land of Saints and Scholars"
5. **Kelli Gajewski '24**, "Makin' the Money: A Case Study of a Token-based Economy for a Student with Autism"
6. **Lexi Hawkins '24**, "Building Blocks: Using Concrete Math Manipulatives during Lessons to Improve Students' Learning"
7. **Samuel Hey '24**, "EMT Training in Wilmington, NC"
8. **Marcela Izquierdo Poza '24**, "Mathematica Code that Calculates Non-linear, Three Mode Coupling Coefficients"
9. **Amanda Jagdeo '24**, "Getting the 'Perfect' Score"
10. **Molly McNair '24**, "Curated Highlights"
11. **Anna Mooney '24**, "Bring Drama into the Classroom: How Readers' Theater Influences Elementary Students' Prosody and Word Recognition Skills"
12. **Nathaniel Morrison '24**, "Experience of a Lifetime Studying Abroad"
13. **William Olichney '24**, "China's Environmental Kuznets Curve: An Analysis of China's Carbon Emissions using the EKC Model"
14. **William Olichney '24**, "An Unfinished Taiwan Solution: Henry Kissinger's Weakness on US-China Rapprochement"
15. **William Olichney '24**, "TISLP-Taiwan Intensive Summer Language Program"
16. **Gracie Oliver '25 & Ethan Caldwell '25**, "Ticked-off: Determining the Presence, Abundance, and Distribution of Potentially Pathogen-carrying Ticks across an Urbanized Landscape in Lynchburg, VA"
17. **Cat Pressley '24**, "Cognitive Development Society Conference: Trip to Pasadena, CA"
18. **Aleighson Robertson '24**, "Historical and Scientific Analysis of VA's Eastern Shore Hurricanes in the 1800s"
19. **Shauna Shepard '25**, "Observing Dark Matter through Strong Gravitational Lensing using Next Generation Space Telescopes"
20. **Jordyn Shumpert '25 & Kai Miller '24**, "Dependent Origination in Action: Tibetan Nuns' Education & Its Effects on Wider Tibetan Buddhist Society in Nepal"
21. **Ava Skinner '24**, "Let's Get Moving: The Effects of Movement Breaks on Reading Comprehension"
22. **Elana West-Smith '24**, "Enough Is Enough' A Discourse Analysis of the Media Coverage of Taraji Penda Henson's Statements about her Experiences in the Hollywood Film Industry"
23. **Jasmin Williams '24**, "Making Learning Fun: Effect of Smartboard Games on Student Achievement in a 2nd Grade Classroom"
24. **Madison Witt '24**, "Give Them a Break: The Effects of Off-task Behavior in the Elementary Classroom"
25. **Carlyne Wright '24**, "Coaching & Fitness"

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2024

PRESENTATIONS

Abby Baucom '24, poster

"Mindset Matters: Exploring Secondary Teachers' Growth and Fixed Mindsets over Six Weeks"

Faculty Mentor: Peggy Schimmoeller, Education

Has a teacher's view of you positively or negatively affected the way you view yourself? Teachers have a direct influence over students, which can leave long-lasting impressions. A teacher's mindset is one factor that may contribute to student success and self-perception. Based on Carol Dweck's (2006) growth and fixed mindset research, my study examined secondary teachers' mindset and changes in mindset over a short period of time. Participants completed weekly surveys over six weeks. The first week's survey measured teachers' mindset, and the following five weekly surveys measured if change occurred from the first week. I will share research findings and discuss implications for classroom teachers.

Zachary Bishop '24, oral presentation

"A Practical Guide to Interfaith Conversation"

Faculty Mentor: Kaija Mortensen, Comparative Philosophy

Mutual understanding is paramount to navigating the polarization and injustice we face daily. Unfortunately, religion can often divide us. At the same time, talking with someone about their religious beliefs, known as interfaith conversation, can provide one of the most effective windows into understanding others' perspectives. In his lecture, "The Will to Believe," philosopher and psychologist William James argues for the possibility of a pluralistic society characterized by mutual respect and freedom to believe. Inspired by his work, my summer research project involved interviewing 21 members of the Randolph community about the obstacles and opportunities presented by interfaith conversation. Based on these interviews, and the work of interfaith leader Eboo Patel, I developed a practical guide to interfaith conversation. In this talk, I will present strategies that might help anyone navigate interfaith conversation on an individual level.

Izaiah Burgos '24, oral presentation & poster

The Effectiveness of Clicker Training for Teaching Cooperative Care to Captive Leopards (*Panthera pardus*)"

Faculty Mentor: Erin Heller, Biology

Clicker training is an operant conditioning reward-based training method utilized in animal behavioral training. This training style employs a clicker as a bridging stimulus to link desired behaviors to a

reward, thus facilitating recognition of the cues given by the trainer to the trainee. Cooperative care or training an animal to be a willing and active participant in its own medical care is a commonly used practice in zoological facilities which often utilizes clicker training methodology. My project tested the efficacy of using clickers in cooperative care training processes on two African leopards (*Panthera pardus*) and one Cape leopard (*Panthera pardus pardus*) at ZA Cheetah Conservation in Bela Bela, South Africa. Success was measured by trainees performing desired behaviors within 3 seconds following cues. While individual behavior success was variable, my project demonstrated that clicker training is an effective mode of cooperative care.

Isaac Carney '24 & Luke Chapman '25, oral presentation

"Verifying the Decay Anomaly Present in Smartphone Accelerometers"

Faculty Mentor: Peter Sheldon, Physics & Engineering

The ubiquity of smartphones in everyday usage has allowed for simpler methods of collecting physical data. One of the applications of smartphones is to record acceleration data because the phones contain built-in accelerometers. Previous research unearthed a potential problem in the data collection of such smartphone accelerometers. The researcher's phone collected data that experienced a decay in acceleration during experiments in which acceleration is truly constant. This project involved the verification of this issue in both Android and iPhone smartphones in a variety of different constant acceleration tests. The anomaly was confirmed across multiple types of experiments.

Madison Daniels, '24, oral presentation, reading of original work

"Too Much of Good Things"

Faculty Mentor: Gary Dop, English

This piece, entitled "Too Much of Good Things," began in an advanced creative writing course and took me all the way to the Sigma Tau Delta Centennial Convention in St. Louis, Missouri. I had the pleasure of presenting it there in front of peers, mentors, and others within the organization. I now share that same pleasure in presenting my work here and sharing it with my community. This work details an all-too-often seen cycle of maladaptive behaviors when it comes to food and body image. This piece originates from and speaks to personal struggle which is not only my own but individuals all around who struggle with similar issues.

Kathryn Davis '24, poster

"The School for Field Studies - Marsupials of Australia"

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

During July-August 2023, I had the opportunity to study abroad with the School for Field Studies (SFS) in the wet tropics of Far North Queensland, Australia. During this program, our cohort spent our time living and working within our environment, focusing on the study and observation of Australian marsupials. We studied their habitats, behaviors, and the conservation efforts in support of their wellbeing. During this course our main project focused on how rainforest restoration efforts are affecting native marsupial populations, both terrestrial and arboreal. This program not only allowed me to live and work in one of the most diverse ecosystems in the world, but also to form new connections with different professionals, students, alumni, and volunteer organizations during my time with SFS. My study abroad experience would not have been possible without the Randolph College Global Studies Scholarship and R.I.S.E. Grant.

Isabelle Fenton '24, poster

"Literature and the Land of Saints and Scholars"

Faculty Mentor: Mara Amster, English

We will explore the knowledge and experience I gained during my study abroad year at Queen's University Belfast in Northern Ireland; while at QUB, I was a Norman Houston Award recipient, Gilman Scholar, and RISE Grant recipient. Over the course of my year abroad, I not only studied Irish Literature, but I experienced the culture, learned the history, and lived a local life in Belfast. As a result of this experience, I came to value the importance of a global education and have returned to Randolph to serve as a study abroad advocate. This presentation will touch upon the ways that my time in Belfast affected my personal growth and development, how my English major program was influenced by my academic journey, and how I have come to speak about the value of international study to my Randolph community.

Jenna Fink '25 MAT, oral presentation

"Pop a Squat: How Flexible Seating Affects Off-Task Behavior among First-Grade Students"

Faculty Mentor: Peggy Schimmoeller, Education

Have you ever seen a classroom full of yoga balls instead of the expected classroom seats? Those yoga balls are considered a form of flexible seating. Flexible seating refers to alternative seating devices used around the classroom as an alternative for traditional hard, plastic seats. Flexible seating promotes an open and friendly environment that encourages academic learning (Güven & Uçar, 2019). I conducted four weeks of daily small group instruction, two of those weeks included rotations where

students had the choice to use flexible seating, and the other two weeks, students used traditional seating. My goal was to test the effectiveness of using flexible seating to decrease off-task behavior in a first-grade classroom. I examined the number of off-task behaviors each day with and without the flexible seating. In my presentation, I will share the findings and discuss implications for classroom teachers.

Madelyn Friel '25 & Natalyn Stanley '25, oral presentation

"Antioxidant Assessment of Wine Components"

Faculty Mentor: Ann Fabirkiewicz, Chemistry

Wild grapes were first known in the Caucasus region, and can be considered the origin of wine, which predates written records. Cultivation of grape vines was known in the earliest origins of farming. With the development of pottery and a greater understanding of the fermentation process, the production of wine as a beverage spread throughout Europe. In modern times, wine is produced throughout the world, with particular regions noted for the different flavor profiles of their grape cultivars. Wines are recognized as possessing health benefits that include reduced risk of heart disease and cancer, among others. In this project, we analyzed several wines for their antioxidant potential, and isolated and analyzed their constituent antioxidant components. The wines were chosen from a multitude of different regions in the world to consider the effect of climate on antioxidant potential.

Kelli Gajewski '24 MAT, poster

"Makin' the Money: A Case Study of a Token-based Economy for a Student with Autism"

Faculty Mentor: Peggy Schimmoeller, Education

In a classroom or a lecture, how would it make you feel if an individual were constantly arguing with the teacher or presenter? As a first-year teacher working with a student diagnosed with Autism Spectrum Disorder (ASD), with a characteristic of behavioral rigidity, I explored the implementation of a token-based economy, based on operant learning theory, to improve behavior. In a token-based economy, behaviorism is applied to incentivize certain behaviors by awarding tokens for desired actions. I worked with one student who was reluctant to complete work, challenged the teacher, and struggled with peer social interaction. The target behaviors included negotiation, refusal, deflection, and negative self-talk. Token-based economies require teacher monitoring of student behaviors to distribute the token or reward. This implementation took place over a six-week period; three weeks without and three weeks with a token-based economy intervention. I will share the results and implications for teachers.

Michelline Hall '24 MEd, oral presentation

“Artistic Avengers Assemble: Uniting Public Schools and Arts Centers for Heroic Impact”

Faculty Mentor: Crystal Howell, Education

Partnerships between public schools and arts centers, now and throughout U.S. history, can lead to transformative experiences for students. Just as the Avengers use their broad array of special abilities to save the world time and time again, arts center stakeholders' many different backgrounds, skills, and priorities, work together to shape center goals. But often stakeholders aren't on the same page, leading to logistical, financial, curricular, and material conflicts. I argue that identifying goals, clarifying communication, and aligning logistical capabilities yields more accessible and desired programming. In this scholarly talk, I explore historical developments, pedagogical shifts in art education, and current models of community-based art education. By using The Center (an arts center in a small city in central Virginia) as a case study, I seek to uncover such partnerships' mutual benefits and challenges.

Lexi Hawkins '24, poster

“Building Blocks: Using Concrete Math Manipulatives during Lessons to Improve Students' Learning”

Faculty Mentor: Peggy Schimmoeller, Education

In this study the use of symbolic worksheets and concrete manipulatives was investigated to determine which instructional mode of delivery was most effective in improving subtraction learning in a kindergarten classroom. The study included eleven participants and took place over two weeks. The first week students were taught in small groups using symbolic worksheets, and during week two math manipulatives were used. After each lesson students completed a one question feedback sheet on enjoyment - thumbs up or thumbs down. At the end of both weeks, students completed a short assessment. Scores from assessments were then compared. A paired t-test was conducted, and results were not statistically significant. A bar graph showed three students' scores remained the same, four students' scores improved, and four students' scores decreased. The percentages of enjoyment were collected and showed 67.55% of students enjoyed working with manipulatives over worksheets. Because of low scores the teacher should reteach subtraction to most of the class and differentiate instruction for students who continue to struggle.

Caleb Hendrix '24 MAT, oral presentation

“Breaking the Block: Teaching a Block Schedule in Sections to Increase Engagement”

Faculty Mentor: Crystal Howell, Education

In block-scheduled classes, high school students are expected to be present and paying attention for 75 minutes, 90 minutes, or even longer. Even in your favorite subject, with your favorite teacher, you can probably imagine how difficult it would be to maintain your attention for that long. In my research, I have found that this amount of time is generally too long to retain the attention of students. I hypothesize that one of the causes of high school student disengagement is block scheduling, which could be fixed with brain breaks. I can't change my school's block schedule, so through this project, I explore how to work with it. Specifically, I investigate brain breaks as a way to promote engagement within a secondary history classroom.

Samuel Hey '24, poster

“EMT Training in Wilmington, NC”

Faculty Mentor: Ann Fabirkiewicz, Chemistry

Emergency Medical Technicians (EMTs) are medical professionals who can provide basic life support (BLS), either in the emergency room or in an ambulance. Due to the immediate actions required in emergencies, EMTs are given freedom to make clinical decisions themselves. Their relatively wide scope of practice requires a lot of training. I used my RISE grant to fund my tuition at an accelerated EMT course, consisting of a month of pre-course work, 10 days of synchronous online learning, and eleven days of in person training, clinicals, and testing. I learned the foundations of patient care and began my career in medicine. Currently, I work for Hospital to Home in Charlottesville, and respond to 911 calls locally at Campbell County Rescue Squad in Forest, VA. My work has been taxing but has only strengthened my passion for medicine.

Marcela Izquierdo Poza '24, poster

“Mathematica Code that Calculates Non-linear, Three Mode Coupling Coefficients.”

Faculty Mentor: Katrin Schenk, Physics & Engineering

Our goal was to write a Mathematica code that calculates non-linear, three mode coupling coefficients. During the first half of the semester, we mainly focused on checking code that Dr. Schenk wrote by calculating the coupling coefficients by hand for arbitrary oscillation modes. This involved using an efficient choice of basis, the usual spherical coordinate \hat{r} and two complex, null-vectors, allowing us to write the coupling coefficient in terms of the Spin-weighted Spherical Harmonics. Our final step was to test the coupling coefficient code by calculating the three-mode coupling coefficients for a constant density star.

Amanda Jagdeo '24, poster

"Getting the 'Perfect' Score"

Faculty Mentor: Kristen Bliss, Biology

What defines academic perfection? Carmelo Anthony suggested that "Every morning you have two choices: continue to sleep with your dreams or wake up and chase them." This is the ideology that pushed me to tackle studying for my Dental Admissions Test through daily trial and error. Learning and teaching yourself how to study is a challenge in itself. As a first-generation American college student, the "why" studying was important and was always clear, but the "how" wasn't. My poster presentation aims to show you the who, what, when, why, and hows of studying and preparing for education post-undergraduate.

Molly McNair '24, exhibit

"Curated Highlights"

Faculty Mentor: Chris Cohen, Studio Art

Today's society has become highly digitized. Everything goes online. Anything can be turned into monetized content. There are so many different platforms of social media providing a full-time job for many people ranging from micro to large followings. The constant push of content creates a challenging norm of overly perfect posts, accounts, and influencers. There is so much content being published on a daily basis that is overwhelming, which is what present in my body of work. David Salle explained "I don't use the Internet to source materials. I don't dislike it, but it encourages the idea that all images are inherently interesting or are more or less equal, and that more un-differential the better." While I did use images from social media as inspiration due to uniformity, I agree with Salle that everything online seems to have the goal of looking like everything else and fitting in, playing into the standards that are being created through social media.

Anna Mooney '24, poster

"Bring Drama into the Classroom: How Readers' Theater Influences Elementary Students' Prosody and Word Recognition Skills"

Faculty Mentor: Peggy Schimmoeller, Education

The ability to read and understand what is being read is crucial to academic success. One thing that hinders a reader's ability to understand what they read is poor fluency. Fluency has a direct effect on comprehension and can be influenced by a reader's word recognition skills and prosody. There are many activities that can help students improve these skills. The activity this study explored is readers' theater, a group activity where students perform a play without the use of props,

costumes, a set, or memorization. Readers' theater utilizes repeated reading which allows students to become familiar with the words they are reading and more effectively remember them. The familiarization of words will improve students' word recognition and prosody skills, therefore improving their fluency. I taught for two weeks using two different scripts to examine if students' word recognition and prosody would improve. I used a Qualitative Reading Inventory (QRI) to assess the students' abilities.

Jennifer Moore '24 MAT, oral presentation

"When Will I Use This?": The Solution to Higher Interest and Achievement in Chemistry"

Faculty Mentor: Crystel Howell, Education

Do you remember the excitement of elementary school science labs? Bubbling beakers, baking soda volcanoes, and field trips to the aquarium or zoo are among many students' most vivid grade school memories. Somewhere between elementary and high school, those feelings of excitement turned to boredom and dread. Research suggests that one reason adolescent students lose interest in science is because they do not see the relevance to their own lives. Approximately 25% of jobs in the U.S. are STEM related, meaning teachers and other decision makers must find ways to sustain students' interest in STEM courses through high school and beyond. In this study, I measured the effect of incorporating real-world examples in my secondary chemistry lessons on student interest and achievement. My continuing goal is to help my students rediscover what they felt the first time they put on a pair of goggles and picked up an Erlenmeyer flask.

Nathaniel Morrison '24, oral presentation

"Experience of a Lifetime Studying Abroad"

Faculty Mentor: Bunny Goodjohn, English

In the spring of 2023, I took the opportunity to spend a full semester abroad at the American College of Greece. I lived in Athens for five months and was able to learn a lot about life through meeting people from hundreds of different cultures and backgrounds. My perspective, understanding, appreciation, and food palate have all been expanded, giving me a life more abundant. The RISE grant helped me with travel and other living expenses and the experience was priceless.

William Olichney '24, poster

"China's Environmental Kuznets Curve: An Analysis of China's Carbon Emissions using the EKC Model"

Faculty Mentor: Elizabeth Perry-Sizemore, Economics

China, often criticized as the world's leading environmental polluter, faces scrutiny for its lax factory regulations, as highlighted by Trump (2013) and carbon emission data from Ritchie et al. (2020). The Environmental Kuznets Curve (EKC) theory posits an inverse U-shaped relationship between GDP per capita and environmental degradation (Hussen, 2013). Despite China's significant emissions, its economic trajectory may align with the EKC, suggesting a potential reduction in emissions relative to economic growth. Understanding China's position within the EKC framework is essential given its status as a major emitter and economic powerhouse. This paper analyzes Carbon emissions between the US and China in the context of trade. How does China's carbon emissions balance look when removing its exports to America?

William Olichney '24, poster

"An Unfinished Taiwan Solution: Henry Kissinger's Weakness on US-China Rapprochement"

Faculty Mentor: Selda Altan, History

US involvement in Taiwan has been a source of tension in US-China relations since the 20th century. The Republic of China government fled to Taiwan from mainland China during the Chinese Civil War. The United States recognized the Taiwanese government for decades until the Nixon administration embarked on a policy that would recognize the People's Republic of China on the mainland as China and not recognize the Republic of China on Taiwan. Despite this famous effort in opening relations with the People's Republic of China, US-China relations still sour on the issue of Taiwan. This research focuses on Henry Kissinger, the National Security Advisor to Richard Nixon. Henry Kissinger was a central figure to policy making with Chinese officials. This research argues that Henry Kissinger failed to create sustainable positive relations because he assumed that Taiwan would be inconsequential, the Soviet Union's position to China was far more important, and that he felt the US had relinquished Taiwan enough.

William Olichney '24, poster

"TISLP-Taiwan Intensive Summer Language Program"

Faculty Mentor: Kun An, Asian Studies

After the AsiaNetwork conference, I knew I needed Mandarin to take my studies seriously. I needed an environment where I would be forced to practice my Mandarin alongside other competitive students. This TISLP program did just that. Not only was the program necessary for improving my Mandarin, but it also improved my resiliency and cultural awareness. My speaking proficiency went from intermediate

to advanced, while my novice level reading and listening jumped to intermediate. This travel abroad opportunity included a lot of reflection into Randolph's unique approach to Mandarin classes.

Gracie Oliver '25 & Ethan Caldwell '25, poster

"Ticked-off: Determining the Presence, Abundance, and Distribution of Potentially Pathogen-carrying Ticks across an Urbanized Landscape in Lynchburg, VA"

Ticks are ectoparasites that pose significant health threats to humans and non-human animals. Different species of ticks are capable of harboring and transmitting a large variety of diseases, such as Lyme disease. As urbanization continues to disrupt relationships between ticks and their non-human hosts and as more people populate urban areas, the potential for ticks parasitizing humans is increasing. This project aimed to determine what species of ticks are present and most abundant in urban areas throughout Lynchburg, VA. We employed tick dragging techniques to collect ticks at 5 publicly accessible areas in Lynchburg. Collected ticks were morphometrically identified in the lab, and bibliographic review was utilized to determine what disease pathogens these species are capable of carrying. The tick species we collected included *Ixodes scapularis*, *Haemaphysalis leporispalustris*, *Dermacentor variabilis*, and *Amblyomma Americanum*, which are associated with multiple tick-borne diseases, including Lyme disease, alpha-gal, and Rocky Mountain spotted fever.

Cat Pressley '24, poster

"Cognitive Development Society Conference: Trip to Pasadena, CA"

Faculty Mentor: Sara Beck, Psychology

I was honored to go to the Cognitive Development Society Conference in Pasadena, CA funded by Randolph's RISE grant. The trip allowed me to learn more about current research in the development psychology field. It also helped me meet people who are in the developmental psychology field. Conference attendees ranged from people who were twenty years into their profession as PhD researchers to those who were still pursuing their undergraduate degrees, like me. This trip gave me the opportunity to explore the professional world of developmental psychology and learn more about myself. Additionally, I am writing a paper with Professor Beck about the developmental topic of dialogic reading.

Cat Pressley '24, oral presentation

"The Columbian Exhibition and the Display of Race, Gender and Culture"
Faculty Mentor: Gerry Sherayko, History

American World's Fairs have been the hub of cultural displays and exhibitions on new technology and discoveries in science. Both the representation of cultures foreign to the U.S and new inventions can reflect the expectations and assumptions of the times. They also push boundaries and create the culture they are intending to reflect. The Columbian Exhibition in Chicago was a cultural phenomenon that revealed many commonly held stereotypes about foreign people, government, and society. Using both primary and secondary text on the Columbian Exposition I will draw a connection between the representation of minorities at the fair and the stereotypes that are still upheld in American culture today.

Aleighson Robertson '24, poster

"Historical and Scientific Analysis of VA's Eastern Shore Hurricanes in the 1800s"

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

Paleotempestology, the study of past hurricanes and tropical cyclones using proxy and historical data, can serve as a gateway to understanding recurrence intervals and climatology on a deeper level. Hurricanes are one of the deadliest natural disasters and are becoming more intense as the Earth's climate changes due to anthropogenic actions. Therefore, understanding how hurricanes impact multiple aspects of the everyday world is essential in order to become more resilient to them in the future. To start grasping the impacts of hurricanes, we need to gather as much information as possible on past and present tropical storms around the world. The Eastern Shore of Virginia is a coastline with a deep history, yet the natural disasters from the past are understudied. The objective of this study was to see if it is possible to uncover undocumented hurricanes to better understand and estimate recurrence intervals for the Virginian coastline.

Aaron Scott '24, oral presentation, reading of original work

"A World in Flux-What I Learned Presenting at a National English Honor Society Conference"

Faculty Mentor: Gary Dop, English

Something which is "in flux" is fluid and ever evolving. The English National Honor Society Sigma Tau Delta hosted their centennial conference in St. Louis, MO, April 3-6, 2024, and their theme was "In Flux." I submitted three poems through which I sought to explore current-day socio-political issues and how they affect our current cultural mindset. My work was accepted for presentation at the convention. I was also invited to host a panel in which I was able to participate thanks to my RISE grant. My SAS presentation will include

both a reading of the poems that were submitted as well as a reflection on my experience attending and hosting a panel at the convention.

Shauna Shepard '25, poster

"Observing Dark Matter through Strong Gravitational Lensing using Next Generation Space Telescopes"

Faculty Mentor: Simon Birrer, Physics & Astronomy, Stony Brook University

Finding definitive proof of the presence of dark matter in the universe is a topic of ever-increasing interest in physics and astronomy. By using the method of Strong Gravitational Lensing (SGL) to observe stars, galaxies, black holes, etc. one can make observations not possible with only visible-light telescopes. To understand the potential use of next generation space telescopes, simulations of halos and Einstein rings can be generated to study potential dark matter substructure and gain ideas of what these subhalos may look like in real field imaging. Programs such as pyHalo and lenstronomy permit users to simulate large populations of these halos and adjust individual parameters to better understand both the limiting factors and strengths of future space telescopes.

Jordyn Shumpert '25 & Kai Miller '24, poster

"Dependent Origination in Action: Tibetan Nuns' Education & its Effects on Wider Tibetan Buddhist Society in Nepal"

Faculty Mentor: Suzanne Bessenger, Comparative Philosophy

In the summer of 2023, we, a group of three Randolph Comparative Philosophy majors and two Randolph professors, embarked on a three-week research trip to Nepal. Our initial intention was to assess changing religious and educational opportunities for Buddhist nuns in Nepal, with particular focus on observing interest in the revival of the full ordination for Buddhist nuns. We had spent the previous academic year studying and preparing research on this topic, as well as looking at how recent changes to educational access had made this revival more of a possibility. We wanted to know who and what was the inspiration and motivation behind this phenomenon. In speaking to lay folks, nuns, and monks, and engaging physically with spaces, that until May 15th, 2023, had been theoretical for us, our research question changed, as did our understanding of how social change occurs in these South Asian Buddhist circles. In trying to understand how educational opportunities for nuns had changed, we expected to find a clear starting point and instigator for the changes we had read about. Instead, we found a web of support for nuns that included a small number of prominent male Buddhist leaders, international donors, and others. These people and forces brought resources to support educational access of many sorts— secular, health, philosophical— in different venues, not just the monastic context. The net result was an expansion of educational opportunities for many populations, not just Buddhist nuns.

Ava Skinner '24, poster

"Let's Get Moving: The Effects of Movement Breaks on Reading Comprehension"

Faculty Mentor: Peggy Schimmoeller, Education

Movement breaks incorporated into the classroom can have many benefits for students, including improved reading comprehension. The objective of this study was to determine whether a movement break prior to a reading lesson would improve students' reading comprehension. This study spanned two weeks; one a control week, without the use of movement breaks, and one intervention week which included five-minute daily GoNoodle video movement breaks. Students engaged in the movement breaks during transition times from phonics to language arts. Instruction was consistent during the control and during the intervention weeks. A pretest was administered prior to the intervention week and a post test was given at the end. I analyzed students' scores using a t-test to investigate whether taking movement breaks had a positive influence on reading comprehension. The results showed that there was not enough sufficient evidence to support movement breaks resulting in improved reading comprehension.

Elana West-Smith '24, exhibit

"Enough Is Enough" A Discourse Analysis of the Media Coverage of Taraji Penda Henson's Statements about her Experiences in the Hollywood Film Industry"

Faculty Mentor: Jennifer Gauthier, Media & Culture

Black women continue to uplift, enlighten, and encourage others through sharing their experiences. My research focuses on the ways in which Taraji P. Henson chose to speak up for herself and other Black women after the release of *The Color Purple* (Blitz Bazawule, 2023). I use a discourse analysis to explore the reactions to her statements, through the lens of Black Feminist theory. Henson is an influential, multi-faceted Black woman who has contributed to many modern cultural aspects. Through this film, I want to inspire and educate people about how Black women persevere despite challenges.

Jadin Wilkening '24, oral presentation

"STEM to Screen: Exploring the Math & Science Behind Pixar's RenderMan"

Faculty Mentor: Brad Spendlove, Computer Science

This research explores the profound impact of mathematics and sciences on computer-generated animation, particularly within Pixar Animation Studios and their revolutionary rendering software, RenderMan. It examines techniques like set design, lighting effects, crowd simulations, and character modeling, showcasing the fusion of

mathematical principles with artistic creativity. RenderMan integrates concepts such as geometric transformations, Pascal's triangle, and Hooke's Law to pioneer innovation, enabling digital artists to craft immersive narratives. With meticulous detail, and a commitment to pushing boundaries, RenderMan has transformed visual storytelling. Continuously evolving, it remains at the forefront of animation technology, inspiring new possibilities in computer-generated imagery.

Jadin Wilkening '24, poster

"Website Developer Intern for NASA"

Faculty Mentor: Jia Wan, Mathematics

My presentation encapsulates the personal journey enabled by the RISE grant from Randolph College, a \$2000 award supporting research, projects, and internships. Thanks to this grant, I spent the summer of 2023 in Washington, DC, as a Website Developer Intern for NASA's Natural Disasters team. This opportunity not only honed my skills but also broadened my perspective, fostering meaningful connections and personal growth. It illuminated my path in technology and space exploration, shaping my aspirations for the future.

Jasmin Williams '24, poster

"Making Learning Fun: Effect of Smartboard Games on Student Achievement in a 2nd Grade Classroom"

Faculty Mentor: Peggy Schimmoeller, Education

The purpose of the research was to show how interactive smartboard math games influenced achievement on math assessments. During my practicum placement in an elementary school, I noticed students struggled with learning math. One identified challenge was the disruption to instruction during the pandemic. Students did not have direct access to teachers, electronics, or peers to help them with math which led to frustration. The researcher conducted an investigation using a control group, which included the use of typical worksheets with abstract symbolic math problems, and an intervention which incorporated interactive whiteboard games. Participants included ten second grade students; six girls and four boys. The results showed that there was a significant increase in students' achievement using interactive math games compared to symbolic worksheets.

Madison Witt '24, poster

"Give Them a Break: The Effects of Off-task Behavior in the Elementary Classroom"

Faculty Mentor: Peggy Schimmoeller, Education

The purpose of this study was to determine the effects of brain breaks on off-task behavior in a second-grade classroom. Brain breaks were used while transitioning between mathematics and social studies. The study was conducted over the span of two weeks, with the first week serving as the intervention period, when brain breaks were used, and the second week as the control week. Off-task data was tallied and exit tickets including math problems were used to determine if brain breaks influenced off-task behavior and or academic performance. The results showed there was a significant increase in off-task behavior during the control week, and a decrease during intervention. There was a decrease in academic performance during the control week, however it was not statistically significant. It was concluded brain breaks do decrease the frequency of off-task behavior in the second-grade classroom.

Carlyne Wright '24, poster

"Coaching & Fitness"

Faculty Mentor: Carolyn Sarson, Sport & Exercise Studies

The RISE grant allowed me to further my education in both coaching and fitness as an athlete and collegiate soccer player on Randolph's Women's Soccer Team. I traveled to Loudon, VA this past summer for classes to obtain multiple U.S. Soccer licenses, including the 4v4, 7v7, 9v9, and 11v11 Grassroots coaching licenses. These are first steps to working towards a D license in U.S. Soccer Coaching. Additionally, I was able to earn my Personal Training Certification, and become a Certified Personal Trainer (CPT), allowing me many job opportunities available to me right now, while in graduate school. My RISE grant allowed me to start my career in coaching and fitness through further education and certifications that I will be able to apply in my career now and in the future.

KEYNOTE SPEAKER

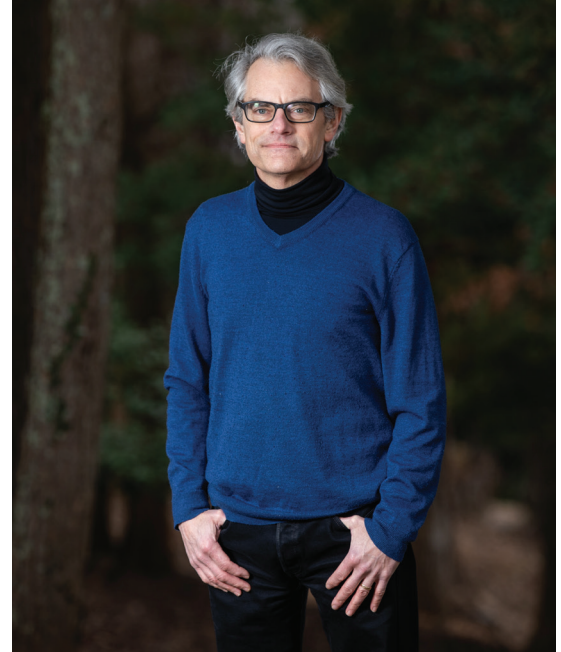
DAVID T. SCHWARTZ

Mary Frances Williams Professor of Humanities, and Professor of Philosophy

David T. Schwartz is the *Mary Frances Williams Professor of Humanities, and Professor of Philosophy* at Randolph College in Lynchburg, VA. He received a BA ('85) from Texas Christian University in English with minors in Philosophy and Accounting, and a Ph.D. in Philosophy from Rice University ('96).

His scholarly research is in the field of 'public philosophy,' which applies philosophical methods to the understanding of significant public issues. Before focusing on his current topic of environmental rewilding, Schwartz wrote books on the ethics of consumer choice (*Consuming Choices: Ethics in a Global Consumer Age*) and government support for the arts (*Art, Education, and the Democratic Commitment*).

At Randolph College, his philosophy courses include Ethics and Public Life, Bioethics, Environmental Philosophy, and Philosophy of Art. In 2017, Schwartz held the Garrey Carruthers Endowed Chair in Honors at the University of New Mexico, where he taught a course on rewilding. Between undergraduate and graduate schools, Schwartz worked for seven years with the United States General Accounting Office in Washington, DC, where he evaluated numerous federal agencies and programs for effectiveness and efficiency.



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

Special thanks

Dr. David T. Schwartz, *Mary Frances Williams Professor of Humanities, and Professor of Philosophy*

Student Scholarship Committee:

Kun An, *Professor of Chinese*

Bradley Bullock, *Charles A. Dana Professor of Sociology*

Luisa Carrera, *Administrative Coordinator, Center for Student Research*

Jesse Kern, *Assistant Professor of Chemistry and Director of Summer Research program*

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Thank you for attending!



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