Undergraduate Research Journal

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Young Harris College

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Introduction from the Director of Undergraduate Research

My favorite part of directing the Undergraduate Research Program is listening to students talk about their research experiences. Last fall, Dr. Thomas Clanton and I held the second annual CURE/MRE Student Focus Group, and once again, over soda and pizza, the students expressed enthusiasm for their projects, admiration for their faculty mentors, and appreciation for the institution that had fostered an environment to make these opportunities possible. One student described research as "something to just be proud of" and talked about a Course-based Research Experience she'd had in a biology class. "I'm not a biology person," she said. "But I was proud that I did research on crayfish. Like, I did it, and so it boosted my confidence as a researcher and a student."

Many such themes emerge in our focus group sessions. Students retain their research experiences—or at least, the pride and satisfaction they feel upon completing them. I think about this alongside my recent experience at the SACSCOC Summer Institute, where I spent a lot of time talking about undergraduate research, and hearing about Quality Enhancement Plans at other institutions, and realizing how lucky I am to lead a program that engenders such infectious excitement. In what other circumstances would I get to talk to students about crayfish, roly-polies, Medieval manuscripts, pain psychology, cancer research, climate change, and the whole host of topics our students are passionate about, and the many problems in the world they seek to solve?

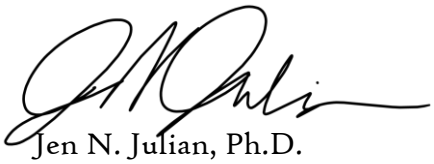
I carry that enthusiasm with me as I enter my third year as Undergraduate Research Director. I have been honored to oversee an increase in faculty participation across all fields and divisions, and to present what I believe to be the most diverse, multidisciplinary issue of the Undergraduate Research Journal yet. Every department offered either a CURE (Course-based Research Experience) or an MRE (Mentored Research Experience) in AY2023-2024. Every department had at least one faculty member sponsor a student at the Spring 2023 Undergraduate Research Day. Active student participation in research and inquiry approached nearly 40% of the full-time undergraduate student body. In addition to valuable qualitative data from the focus group, survey data consistently demonstrate student improvement toward our four Student Learning Outcomes: information literacy, developing questions, analysis and other processes of inquiry, and communication.

In this spirit of celebration, I am pleased to present the 3rd issue of the YHC Undergraduate Research Journal. The journal consolidates and commends student work from throughout the previous year, reflecting research and inquiry in numerous forms, both academic and creative. You will find recognition of our 2023 Distinguished Research Scholars, news items about graduate school acceptances and professional conference presentations, summaries of

Honors Thesis projects, and Undergraduate Research Day abstracts, many of which originated as CURE or MRE projects.

This year, you will also find six research highlights scattered throughout the journal, redesigned as brief Q&As. Featured CURE projects include a hands-on exploration of Art History with Dr. Mary Brink and Camden Goddard, an archival project with Jacqueline Bruen in Introduction to Museum Studies, an investigation of "dark side" qualities in interpersonal relationships with Communication Studies professor Dr. Jennifer Hallett, and a longform novel project that I myself implemented in Developments in Prose. Featured MRE projects include a pain study by Ledford Scholar and 2024 Psychology graduate Ashley Palmateer, which was presented at the National Conference of the US Association for the Study of Pain, and a paper on school choice by 2024 Policy & Law graduate Emma Brown, which was presented at the Social Science Association Conference.

As the Undergraduate Research Program undertakes its third year, I look forward to seeing more fascinating work from our students. The health of this program depends on their participation, curiosity, and drive, as well as the continued dedication of faculty and staff. I am fortunate to work in such an environment, to have the support of my committee and the institution at large, and to have a front-row seat to undergraduate innovation, in whatever forms it may take.



Jen N. Julian, Ph.D.
Director of Undergraduate Research
Young Harris College, *Undergraduate Research for the Common Good*

Mission Statement

Undergraduate Research for the Common Good is an initiative to enhance the educational experience at YHC and positively impact student skills in many areas, including critical thinking, problem-solving, communication, and information literacy. By tackling difficult issues, working to solve the complicated problems, and facing the challenges inherent in research, YHC students develop valuable life skills, becoming resilient to adversity, ready for rigorous challenge, and confident in their abilities.

Undergraduate Research Advisory Committee & Acknowledgements

Special thanks to **Dr. Jennifer Hallett, Jacqueline Bruen, Emma Brown, and Ashley Palmateer** for contributing special content for this issue. Also, a special thank you to the Undergraduate Research Journal editorial team—**Dr. Mary Brink**, **Dr. Ambyre Ponivas, Dr. Amy Boggan,** and **Alissa Cheek**—who dedicated special time to consolidate, organize, and edit this journal.

Additional thanks to those who supported and aided the committee in their efforts and made this publication possible:

Keith DeFoor, Ph.D., Associate Vice President for Academic Affairs, SACSCOC Accreditation Liaison,
Jenny Stowers, M.A., Coordinator of the First Year Experience
Debra March, M.L.S., Dean of Library Services

Lastly, a sincere thank you to all Young Harris faculty, students, staff, and administrators campus-wide who contributed to YHC's undergraduate research efforts this past year. We couldn't have done it without you!

Distinguished Research Scholars

The Undergraduate Research for the Common Good Program created the distinction of **Distinguished Research Scholar** to foster a culture of undergraduate research, encourage student engagement and participation, recognize students who successfully complete research, and reward students who demonstrate excellence.

This past spring, faculty members took the first step in nominating students for the distinction. The nominees then completed an application summarizing the content and value of their research accomplishments and submitted a recommendation letter from a faculty mentor. We determined whether candidates met the criteria for the distinction, while recognizing that disciplines have differing criteria and expectations of research and scholarly work. Awards were announced in a special ceremony on Undergraduate Research Day. We awarded the distinction to **nine students** across six departments, representing all four divisions at YHC.

Addisyn Clapp

Addisyn graduated with a major in Creative Writing and a double minor in English and Women, Gender & Sexuality Studies. She served as editor-in-chief of *Artemas,* YHC's student literary magazine and completed her capstone project with Dr. Gale Thompson, a poetry manuscript entitled *I am Not My Father's Son*, which explores themes of gender, sexuality, and religious trauma. Addisyn presented her work at the UVA Wise Medieval and Renaissance Conference, and her research paper on summer camp folklore received the Literature and Language department's 2023 Outstanding Paper Award in an Upper Division Class. She is now pursuing an MFA at UMass Amherst, where she hopes to continue her creative research.

Distinguished Research Scholars

Julia Fleming

Julia graduated with a major in Psychology and a minor in Outdoor Studies. She worked on several research projects both with Dr. Ben Van Dyke, in the area of pain psychology, and Dr. Joseph Pate. Her research in her minor culminated in an Independent Study entitled: *Questions that Matter: Research, Evaluation and the Philosophy of Science*, and a presentation at Undergraduate Research Day 2024, *Crafting a conceptualization of passionate activities: Actualizing a life well-lived*. Julia states that her research projects at YHC have succeeded in "further deepening [her] understanding and fostering a more meaningful academic journey."

Emily Flynt

Emily graduated with a major in Biology major and a minor in Chemistry. She completed her independent project, "The Impact of Genetics Upon COVID-19 in Young Adults," under the mentorship of Dr. Andrea Kwiatkowski and also completed research with Drs. Linda Jones and Amanda Song. In Spring 2024, she presented her work at the Georgia Academy of Science. Emily says that she especially values the relationships afforded to her by the research community, and that she "believe[s] that [her] independent research work on COVID has continued to influence [her] professional aspirations to go to Med school and become a doctor."

Distinguished Research Scholars

Katie Forrester

Katie graduated with a major in Biology. Under the mentorship of Dr. Kevin Geyer, she developed her Honors Thesis, "Drought effects on soil carbon of North Georgia," which investigated environmental factors related to climate change. She interned with a professional soil scientist and was chosen in summer 2023 to work for the Georgia Mountain Research and Education Center as a research intern on a tomato breeding project. Katie has also presented her work at the Georgia Academy of Science. She states that she "want[s] to attend graduate school for ecology and have a job in the future that requires both environmental field work and lab testing aspects."

Kit Horsley

Kit graduated with a major in Theatre Performance and completed numerous creative projects in their discipline under the mentorship of Gina Dropp and Dr. Jen Julian. They also appeared in several campus performances, including the lead role in *Rogers & Hammerstein's Cinderella*. For Undergraduate Research Day 2023, they helped write and performed in the collaborative play, *And Then We Saw the Stars Again*, and for URD 2024 presented a reading of *The Insectarium,* an original one-act play they crafted in Creative Writing and Drama. Kit notes that they are heavily inspired by the work of Henrik Ibsen, though they seek to produce work that is "uniquely [their] voice."

Distinguished Research Scholars

Janie Jones

Janie graduated with a major in Outdoor Studies, noting that her time at YHC allowed her to develop a special interest in qualitative research and phenomenological methodologies. She completed an independent study under the mentorship of Dr. Joseph Pate, resulting in an Undergraduate Research Day 2023 poster presentation: *What is Qualitative Inquiry? Exploring Different Ways of Studying the World.* She also presented a project exploring the confidence of women in outdoor leadership roles. Janie states that her research experiences have "prepared [her] for any future academic and/or professional aspirations that include this type of pursuit."

Sarah Mele

Sarah graduated with a major in Communication Studies and a minor in History. She completed multiple projects under the mentorship of Drs. Matt Smith, Jennifer Hallett, and Larissa Stiglich, investigating everything from xenophobic violence in East Germany during the Cold War to Kim Kardashian's Instagram brand and ethics in advertising. She has also presented both posters and talks on a wide range of topics at Undergraduate Research Day. She has stated that, "in the advent of [her] post-graduate life, [she] would like to work in Public Relations and Advertising" before eventually "returning to academics and pursuing a PhD."

Distinguished Research Scholars

Ashley Palmateer

Ashley graduated with a major in Psychology and a minor in Philosophy. She worked extensively with Dr. Van Dyke on multiple research projects and was one of last year's Ledford Scholarship recipients for her research project, "Relationships between attitudes and experience of BDSM and experimental pain response." Ashley presented her findings at Undergraduate Research Day 2024 *and* at the National Conference of the US Association for the Study of Pain in Seattle, WA. Following her positive experiences with research at YHC, she states that she sees herself "wanting to lead research projects and apply for neuroscience programs to continue doing research in psychology."

Sophia Shook

Sophia graduated with a major in Biology and a minor in Psychology. She was also one of last year's Ledford Scholarship recipients, working under the mentorship of Dr. Jennifer Schroeder to investigate cancer-causing pathways and potential preventative measures. She presented a talk, "Effects of EGCG on CYP1A1 promoter activity in mouse liver cells," at Undergraduate Research Day 2024 and was the third Distinguished Research Scholar to present work at the Georgia Academy of Science last year. She states that her research experiences will significantly aid her as she completes her degree and goes on to apply to medical school.

Research News

ART

- In October, **Dr. Mary Brink** presented a paper at Society for Literature, Science, and the Arts (SLSA), titled "Pervasive Plants: Kudzu and Invasive Strategies in Contemporary Art."

BIOLOGY

- Biology students **Sophia Shook**, **Katie Forrester**, and **Emily Flint** presented research at the Georgia Academy of Science at Kennesaw State University in March 2024.

- 2024 graduate **Mirian Santiesteban-Pizarro** is starting a job at Emory doing clinical research.

BUSINESS & PUBLIC POLICY

- As part of a work study with Dr. Nathan Gray, **Emma Brown** presented at the Southwestern Social Science Association's Annual Conference in New Orleans in April 2024. Her work received the Eddie Weller Student Paper Prize.

CHEMISTRY & PHYSICAL SCIENCE

- 2017 graduate **Jana Carpenter** completed her Ph.D. in analytical chemistry at the University of Georgia.

- 2024 graduate **Tracy Dumakor** began a graduate program in chemical engineering at Georgia Tech. She also worked over the summer as an intern at Osmotica Pharmaceuticals.

Research News

COMMUNICATION STUDIES

- 2022 graduate **Madaline Studebaker** and former YHC faculty Dr. Joshua Guitar had their essay, "Abstructing AOC: Reifying the reactionary rhetoric of patriarchal ideology," published in *Kean Digital Learning Commons*. Madaline also gave two virtual lectures on her work for Lamar University and Texas State University.

CREATIVE WRITING

- 2024 graduate **Addisyn Clapp** was accepted to the M.F.A Program at the University of Massachusetts Amherst, where she will go on to study poetry.

- In November 2024, **Drs. Jen Julian** and **Gale Thompson** will attend the Creative Writing Studies Conference at Virginia Tech and present a paper, "Crafting New Lenses: Undergraduate Research in the Creative Writing Classroom."

PSYCHOLOGY

- In April 2024, **Ashley Palmateer** presented her research at the National Conference of the US Association for the Study of Pain in Seattle, WA.

Honors Program Capstone Projects

Five students graduated from the Young Harris College Honors Program this year, earning an Honors distinction on their transcripts. In addition to their senior capstones, these high-achieving scholars completed the following Honors capstone projects.

Students in the Honors Program enjoy numerous opportunities for their academic efforts, including access to research support, priority registration, academic scholarships, and courses abroad. Every semester, YHC offers Honors-only seminars in a wide range of multidisciplinary special topics. If you are a student with further questions about the Honors Program requirements or the opportunities it could offer, please contact Dr. Vanessa Iacocca (viacocca@yhc.edu).

Antimicrobial Effects of Kombucha on E. coli and E. faecalis

Emily Birnbaum
B.S. in Biology

Working off of previous studies that have determined homemade kombucha to have antimicrobial properties, Emily performed an agar test to determine whether store-bought kombucha exhibits antimicrobial properties. She notes that she applied knowledge from one of her honors classes, the Art & Science of Fermentation, to perform her research.

Drought Effects on Soil Carbon of North Georgia

Katie Forrester
B.S. in Biology

Katie devised artificial drought conditions on YHC's campus to test her hypothesis on how drought may affect the levels of organic matter in soil. Her project seeks to investigate the overall impact climate change may have on soil fertility. She presented her findings as a talk at Undergraduate Research Day.

Honors Program Capstone Projects

An Examination of the Properties of 2,3,7,8-tetrachlorodibenzo para-dioxin (TCDD) and its Potential to Cause Cancer

Suzanne Moore
B.S. in Biology

Suzanne conducted an extensive literature review to determine whether TCDD, a chemical byproduct of herbicide used during the Vietnam War, could be linked to cancer among veterans and others who had experienced long-term exposure. Her project illustrates the complex challenges of cancer research.

Attitudes Towards Mathematics in Elementary Students

Sarah Teague
B.S. in Elementary Education

Sarah conducted a literature review and surveyed elementary students at a school in rural northeast Georgia. Her project gathered foundational data that might help teachers develop effective teaching strategies and practically address negative perceptions of mathematics in the classroom. She presented her findings as a talk at Undergraduate Research Day.

I'm Glad I Got My Girls

Kristen Trice
B.A. in History

Working under the mentorship of Dr. Matt Smith, Kristen explored representations of gender and race in media by comparing two sitcoms: *The Mary Tyler Moore Show* and *Living Single*. Her project illustrates how these shows reflected the cultural advancement of American women and minority groups, respectively.

Undergraduate Research Projects

This journal presents highlights of student research projects from throughout the academic year. This past year, more than 38% of the student body actively participated in undergraduate research. The estimated 317 YHC students who engaged in research represented every academic department.

Undergraduate Research Day

YHC's 12th annual Undergraduate Research Day (URD) was held on April 11, 2024. This all-day multidisciplinary event featured eight oral presentation sessions and one poster session, plus two senior thesis art exhibits, two musical performances, a theatrical reading of a student play, a creative writing reading, and a Plenary Session featuring a panel of YHC alumni. We estimate that over 150 students participated, delivering a total of forty oral presentations and thirty-two poster presentations. *All* academic departments were represented this year, representing a wide range of research topics and methodological approaches!

URD is an exciting opportunity to recognize the research, inquiry, and creative production that students generate, and to celebrate and support each other as an academic community.

Course-based Undergraduate Research Projects

Course-based research experiences (CUREs) introduce students to discipline-specific research methods and help instill them with a sense of ownership in their academic and creative projects. They provide students with the opportunity to make discoveries, generate new knowledge, and create works of interest to their academic field and the community at large. CUREs can also serve as a gateway to mentored research experiences (MREs), wherein students deepen their research interests and develop an enduring rapport with a faculty mentor.

This past year, nearly fifty percent of full-time faculty at YHC across all thirteen academic departments offered a CURE project in at least one of their courses. This allowed over 250 individual students to engage in collaborative or independent research, some for the very first time. The Undergraduate Research Committee is thrilled about the wide range of multidisciplinary research YHC offers, as well as the enthusiasm we have seen from the campus community broadly.

Mentored Undergraduate Research Projects

Mentored research experiences (MREs) entail discipline-specific, discovery-oriented research completed outside the bounds of a typical classroom. Under the direct supervision of a faculty research mentor, students explore the questions and problems that fascinate them, independently or collaboratively, in academic, creative, or professional pursuits. By the end of the semester, students present their findings as self-motivated scholars with newly found confidence in their fields.

This past year, seventeen faculty members from seven different departments offered MREs and fifty students participated.

Several of the following projects received financial support from the Undergraduate Research Program, covering lab equipment, textbooks, poster printing, visiting speakers, conference travel, and other special expenses.

Art & Graphic Design

RESEARCH HIGHLIGHT!

ARTS 1111 AND ARTS 2203: NAZCA LINES: METHODS AND MEANINGS WITH DR. MARY BRINK AND CAMDEN GODDARD

❖ **WHAT NEW PROJECT DID YOU IMPLEMENT THIS YEAR?**

Students in Camden Goddard's Sculpture class and Mary Brink's Art Appreciation class were assigned to groups to study the ancient Nazca lines in Peru. They researched the history of the lines and their discovery, as well as the various methods scholars believe might have been used to create these lines. Finally, they tested out their hypotheses, using their selected techniques to recreate a specific design on the campus lawn.

❖ **WHAT DID YOUR STUDENTS INVESTIGATE?**

The Nazca lines are geoglyphs that were made in Peru between c. 200 BCE and c. 500 CE. They are generally depictions of geometric forms, plants, and animals, ranging in size up to as much as 660 feet across for the animals and up to 9 or 30 miles long for a straight line. At least 300 designs have been found so far. Many of these geoglyphs have been discovered in recent years as storms cleared different areas and as new technologies have been deployed to find more faint and hidden designs (170 of these designs were found in 2022!).

❖ **HOW DID YOUR STUDENTS SHARE THEIR WORK AND WHAT DID THEY DISCOVER?**

In their groups, the students researched the process, history, and possible functions of the lines and wrote texts that became posters at URD. Each group researched various possible methods that could have been used for laying out the lines (plotting from a central line, ranging poles, triangulation, etc.) and developed a theory for how they could lay out a specific design. Finally, the students tested out their theories by creating their designs in flour. In the process, they all discovered that it was very difficult to lay out large scale designs, but determined that some methods that worked well for rounded designs, like spirals, were less effective for designs that included long straight lines.

ARTS 1111 & ARTS 2203: NAZCA LINES: METHODS AND MEANINGS

STUDENT WORK

SPIDER

Jason Anderson, Anna Hayes, Emily Baars, Christopher Sullivan, and Emily Daniel

In order to create the spider design, our group will first focus on graphing the overall design. We will create an illustration of the spider, laying out the lines in a grid. Next, we will consider proportions and scaling to fit the desired space needed. Then we will measure the space allotted for the project and match the measurements together. Finally, we will create the piece by having someone pour the flour, with another group member guiding from a higher point, seeing the piece from a better angle than would be possible while pouring. Others will be at different angles making sure the piece is precise and neat. This process is chosen to maximize efficiency while also considering the viewpoint from different angles and heights.

ASTRONAUT

Evan Eubanks, Mykala Farran, Lilyanne Finch, Thomas Lathem, and Ivar Na Aga

This project will be imitating the form usually referred to as the astronaut from the ancient Nazca Lines. The materials used will be several ten pound bags of flour and a carefully planned and spaced string grid with a scale of twenty-five by twenty-five feet. This chosen process is used because of ease of formatting and accessibility of materials. This project will be installed on the lawn in front of the Rollins Campus Center. It will be large enough to be clearly seen from higher floors and roofs of buildings around campus.

WHALE

Henrique Borlido, Amar Ford, Amanda Gibson, Valarie Nichols, and Hunter Loyd

Our group will be using a combination of the spiral method and the triangulation method. We are doing the design of the whale, so it will have a spiral as its eye, and the rest is formed by straight lines. For the spiral method, first you need to find a flat area and two poles. You then make a line at the East-West shadow alignment, and that's your working space. One pole will be placed in the center of the line with a string attaching it to the other pole in your hand. With that string, you will adjust the second pole to various lengths while being guided by the string. This allows you to make half-circles on one side of the East-West line using the string and poles. At that point, you do the same process again, but now you will go to the other side of the East-West line, and you can see where your starting and ending points are supposed to meet with the ends of the first half-circles. For the rest of the whale, we will use triangulation. The triangulation method is a process where you determine the location of a point by measuring only angles to it from known points at either end of a fixed baseline by using trigonometry. You use the angles that you have already pre-measured to then create angles around those.

SPIRAL

Dylan Lewallen, Christina Nichols, Laurel Sanford, and Reed Saxon

Our group is going to begin by creating a T shape with string. This will allow us to have even proportions when mapping out our design. We have chosen to do a spiral. To execute this we will begin by putting stakes in the ground. This will help us have a general idea of where to put the string. Next, we will follow the stakes by laying down string and wrapping it around the stakes. The string is going to act as a sketch for our final design. Finally, we will use the string as our guide to pour the flour.

LIZARD

Tessa Jennings, Mallory Lawrence, Corrina Luckenbach, Bjarne Renner, and Rylee Smith

Our process started with the use of grid lines. As we produced our design within a scalable grid, we utilized grid points to symbolize square feet. This allowed us to establish dimensions for the work and set the lengths and widths for each line segment. Once we are on site with our 25ft x 25ft plot we plan to use our grid lines to measure to the center of our plot and create a central line down the entire area. Because we are creating the lizard, which is symmetrical, we will then refer to our diagram to measure down the lizard's body (our central line) and form the arms and legs per the diagram's dimensions using a stick and string much like some scholars believe the Nazca did. By utilizing the ratios found throughout the design on our grid, we can execute this plan successfully.

MONKEY

Craig Chace, Ana Ferrante, Simone Mercer, Keela Mimbs, and Macie Wagner

Our group will recreate the monkey design, which includes a spiral in the tail. Since spirals have a relatively simple and repeating pattern, this will allow the work to be replicated consistently. The spiral portion of the work will not require such precise measurements and will have less risk of distortion. For the spiral, we will use a flat area of grass. We will use two wooden stakes, tied together with a rope. This will make a kind of compass. One person will be placed in the middle, while the other will walk around, making markings on the grass. The distances will be measured and gradually increased, making the lines harmonious and continuous.

The Art of Black Excellence, as Seen in *President Barack Obama* by Kehinde Wiley (2018)

CURE Project in ARTS 3111: Twentieth Century Art
Oral Presentation at URD

Alyssa D. Makina
Faculty Mentor: Dr. Mary Brink

President Barack Obama by Kehinde Wiley completely upended and reinvigorated the genre of official presidential portraiture. It made history along with its subject by being the first official presidential portrait of a Black man. It was also the first official Presidential painting that was commissioned from a Black painter. This painting is rich in meaning and symbolism which is emphasized by Wiley's compositional choice and his unique style of painting. This paper explores the meaning and symbolism of this painting, addressing topics such as the reframing of Black masculinity, the reevaluation of stereotypes pertaining to the Black community in the United States, and how Wiley's work contributes to furthering Black excellence by showing the validity and value of the Black experience within the overall cultural zeitgeist.

All it Takes is a Single Sheet of Paper

CURE Project in GDES 4990: Senior Thesis
Art Exhibit at URD

Hannah L. Elliott
Faculty Mentor: Becky Miller

All it Takes is a Single Sheet of Paper is an exploration of zine making as a way to combine art and creative writing for the Senior Thesis Art Exhibition. My research paper explains the origins of zines, focusing on feminist zines throughout history and how they were used to convey themes and effectively spread information. Additionally, feminist zine creators like Beth Siveyer and Lu Williams and their creation processes are explored, both of whom have informed my body of work. The creative process and analysis of each zine in the collection reflects the history and current influences of present-day zines dealing with issues of body image, menstruation, and growing up as a young woman in the 21st century.

Experience a Life of Adventure
CURE Project in GDES 4990: Senior Thesis
Art Exhibit at URD

William J. Jones
Faculty Mentor: Becky Miller

Experience a Life of Adventure is an exploration of graphic design that focuses on marketing an experience in the outdoors. I compared various marketing approaches, looked at health benefits associated with the natural world, uncovered similarities between experiences in the natural and metropolitan worlds, and incorporated my personal experience and approach to marketing the natural world through my works created for the Senior Thesis Art Exhibition. Outdoor Companies, like REI and Patagonia, and individuals whose basis is the natural world, like Rachel Jung and Brian Rau, create eye catching visuals that focus on the feeling and emotional response associated with being in the outdoors to connect that feeling with their products. Urban brands, like Nike and Vans, focus more on the performance their products offer while appealing to various subcultures and interests among their consumers. They are helping to bridge the gap between the two worlds which I also wish to accomplish with my work, bringing people together through shared experiences. Research studies have shown how childhood exposure to nature predisposes adults to have a positive relationship with the outdoors, benefiting their physical and mental health. My work was informed by my research and my interest in merchandise and marketing design. The formal elements of my work link the ideas of the various marketing approaches, benefits of the outdoors, and my personal experience together to support my goal of promoting the outdoors through a neutral correlation between the metropolitan and natural worlds.

Biology

Comparison of Visual Acuity in College Athletes and the Greater Population

MRE in BIOL 4980: Independent Research
Poster Presentation at URD

Magdalene O. Adebanjo, Kamryn D. Bates, and Aniba A. Reddick
Faculty Mentor: Dr. Jennifer Schroeder

College athletes are known to be extraordinary in their sports, which leads to the question of whether this is due to years of hard work or a genetic predisposition of certain athletes to be successful at their sports. Previous research has found that eyesight superiority is more prevalent in certain professional sports, such as baseball, softball, or tennis. Using a Landolt-C eye chart, our research recorded visual acuity readings from Division II student-athletes from a variety of sports as well as non-athlete students. We then compared these values between different groupings, including males versus females, athletes versus non-athletes, and small-ball sports versus large-ball sports. Statistical significance was analyzed using Mann-Whitney tests or Kruskal-Wallis tests with a post-hoc Dunn with GraphPad InStat3, as data sets failed normality tests. Our experiment yielded 33 total records, of which 29 were used for further analysis. The p-value for sport type (non-athlete, small-ball, and large-ball) was 0.0172; the p-value for athletic experience (non-athlete vs. athlete) was 0.0143; and the p-value for sex (male vs. female) was 0.2109. These findings indicate statistical differences in visual acuity between sport type and athletic experience but not sex. Specifically, we determined that athletes (particularly those in small-ball sports) had better visual acuity than non-athletes. *Funding provided by the YHC Undergraduate Research Program.*

Kombucha's Effects on the Gut Microbiota in Humans

MRE in BIOL 4980: Independent Research
Poster Presentation at URD

Emily K. Birnbaum
Faculty Mentor: Dr. Andrea Kwiatkowski

The gut microbiome is a complex microbial ecosystem. Probiotics, such as kombucha (a fermented tea beverage), may help diversify our gut microbiome and promote overall health. To determine the effects kombucha has on the gut microbiome, three participants (all females aged 18-22) completed fecal samples using a kit before and after drinking 8oz of kombucha biweekly for one month. After defecating, participants swabbed toilet paper to collect the sample. The swab was placed in the tube, stirred in saline solution for 30 seconds, and shaken

vigorously for 10 seconds. Samples were mailed to the Biomesight lab where 16S rRNA sequencing was performed. A Shannon diversity index was calculated for each participant as well as genus identification of their microbes. Scores were assigned based on ideal numbers of probiotic organisms, diversity, ideal numbers of commensals, pathobionts, and overall gut wellness (a combination of the other 4 scores). We predicted an increase in probiotic, diversity, and gut wellness scores, decrease in pathobionts, and no changes in commensals. A comparison of these categories in the "before" and "after" samples supported our hypothesis for the diversity and commensal categories. Average diversity scores increased from 82.67 to 86 (p-value=0.009); commensal averages were 80 and 85.02 before and after kombucha treatment (p-value=0.3686). Probiotic scores decreased from 70 to 68.9 (p-value=0.915). Pathobiont averages were 98.33 and 100 before and after kombucha (p-value=0.1997). Gut wellness scores increased from 83.12 to 84.86 (p-value=0.6392). Kombucha has potential to increase health as a probiotic. *Funding provided by the YHC Undergraduate Research Program.*

Ketamine: A Drug for Anesthesia, Rave Parties, and Treatment of Psychiatric Disorders

CURE Project in BIOL 1122: Anatomy and Physiology
Poster Presentation at URD

Lexi Caruso, Madalyn A. Clifton, Abigail Creutzmann, Teresa Dixon, Dane C. Dompier, Chloe Duck, Kallee McKinney, Emily Munz, Pedro Fonseca, Montana Owens, Kinsley Purser, Corvus Samson, Chloe Schmidhuber, Sophia Shook, Ben Soenen, Brianna Winter, and Isabella Zamora
Faculty Mentor: Dr. Linda Jones

Ketamine is a well-known drug used for anesthesia particularly in veterinary and pediatric medicine due to its ability to be given in a variety of ways (e.g. ingestion or injection) not requiring intravenous delivery. Furthermore, it provides good sedation and analgesia without inhibiting respiratory function making it a very safe drug to use. It can, however, cause an altered state of consciousness, dissociation from reality, a feeling of intoxication, and delusions. It is these latter properties that have made it a recreational, though illegal, drug associated with rave parties. Due to its dissociative effects, it has also gained a reputation as a date-rape drug. More recently, ketamine has been investigated as a treatment for psychiatric disorders such as depression, suicidal ideation, post-traumatic stress disorder (PTSD) and as a means to better understand schizophrenia. Our Anatomy and Physiology class (BIOL 1122) surveyed the literature to better understand these three facets of ketamine use.

The Impact of Genetics on COVID-19 Severity in Young Adults

MRE in BIOL 4980: Independent Research
Poster Presentation at URD

Emily L. Flynt
Faculty Mentor: Dr. Andrea Kwiatkowski

Analysis of DNA sequencing and variation between subjects plays a major role in determining differences in genetic predispositions today, especially in determining the immune response to new viruses such as Sars-CoV-2. The aim of this study was to determine if variations in a single nucleotide polymorphism (SNP) in the colony stimulating factor-2 (CSF2) gene (rs25882: T>C) would correlate with a change in severity of COVID-19 illness. The CSF2 gene codes for the granulocyte-macrophage-colony-stimulating factor (GM-CSF) protein which controls the production, differentiation, and function of granulocytes and macrophages. Studies have suggested that GM-CSF is important for clearing mild Sars-CoV-2 infections. However, when GM-CSF is activated in the late stages of COVID-19, it can cause a cytokine storm resulting in severe lung injury. Eighteen young adults (ages 18-22) who had tested positive for Sars-CoV-2 in the past were recruited for the study and divided into two groups based on survey data. One group had a severe case of COVID-19 (hospitalization and/or severe symptoms); the other was either asymptomatic at the time of their positive Sars-CoV-2 test or had mild symptoms. DNA was extracted from participants' buccal cells. Nested PCR was used to amplify first an 863 bp fragment of the CSF2 gene and then a 300 bp fragment. The PCR product was purified and sequenced by Sanger sequencing (Azenta). We predict that the frequency of T at rs 25882 will be higher in participants with severe COVID-19 illness than in the general population. *Funding provided by the YHC Undergraduate Research Program.*

Drought Effects on Soil Carbon of North Georgia

MRE in HONR 4101: Honors Thesis
Oral Presentation at URD

Katie M. Forrester
Faculty Mentor: Dr. Kevin Geyer

A global increase of CO_2 leads to climate change through global warming because greenhouse gases like CO_2 that accumulate in the atmosphere cause a trapping of solar radiation. Climate change is a long-term change of the climate including droughts and other severe weather depending on the region. This research will assess mineral associated organic matter (MAOM), CO_2 emission, and soil organic carbon (SOC) levels under a four-week simulated drought event. Polyvinyl curtains were tucked into trenches on two opposite sides to dry the soil underneath and allow for air flow. Three different sites were chosen on Young Harris

College campus based on different dominating soil textures: clayey, sandy, and silty. Moisture levels were marginally significant in their response to simulated drought; silty p = 0.057; sandy: p = 0.091; clayey: p = 0.073. MAOM responded significantly to the treatment in the clayey site with a significant increase (p = 0.039). No significant change in SOC occurred at any site with the drought treatment. Treatment caused a significant decrease in soil respiration in the clayey site (p= 0.0072) and significant increase in the sandy site (p= 0.016). Research showed that clayey soils better sequester carbon due to an increase of MAOM during drought likely because of microbial defense mechanisms such as producing extracellular polysaccharides, which also results in declining soil respiration here. In contrast, sandy soil resulted in losses of MAOM likely due to having fewer clay particles with charged surfaces.

Using Bacterial Communities of the Phytotelmata in Cutleaf Teasel (*Dipsacus laciniatus*) to Investigate Potential Carnivory
MRE in BIOL 4990: Biology Capstone
Oral Presentation at URD

Chloe Duck
Faulty Mentor: Dr. Marguerite Coyle

Phytotelmata are plant structures that hold water, serving as micro-aquatic refugia for many organisms, providing nutrients and water in tank bromeliads (*Guzmania lingulata*) or traps (pitchers) in carnivorous plants (*Nepenthes ventrata*). Although intraspecific diversity of aquatic communities exists, each species has a unique community structure that allows for potential interspecific comparison. This includes some bacteria species, such as proteobacteria, which correlate with carnivorous plants. The teasel's modified leaves (cups) (Dipsacus sp.) are phytotelmata. The evolutionary function of these structures is poorly understood. Francis Darwin first proposed *Dipsacus fullonum L.* to be proto-carnivorous in 1877. The few studies that investigated this hypothesis are limited and conflicting. Our study investigated potential carnivory in cutleaf teasel (*Dipsacus laciniatus*). The first objective was to develop a bacteria community sampling methodology to compare the cut-leaf teasel and other phytotelmata species. The second objective was to conduct a trial implementation of our preferred method. This involved sampling water from the cutleaf teasel, pitcher plants, bromeliads, and rainwater (controls), and comparing the resulting pattern, texture, size, color, and shape distribution of bacterial colonies. We hypothesize that if cutleaf teasel is carnivorous (proto-carnivorous), the cup bacterial communities' pattern comparisons would resemble Nepenthes v. As expected, the initial results found slight intraspecific variations and greater intraspecific similarity than interspecific similarities. Therefore, it may be possible to differentiate between each plant species by bacterial community structure. Next, we will analyze these samples using human and AI image pattern recognition to further test the hypothesis. *Funding provided by the YHC Undergraduate Research Program.*

The Effects of Cannabinoids in the Developmental Morphology of Zebrafish

MRE in BIOL 4980: Independent Research
Poster Presentation at URD

Haylee Lloyd, Cathren Whitley, and Isabella Zamora
Faculty Mentor: Dr. Linda Jones

Prior results on exposure of zebrafish embryos to both Δ9-THC and Δ8-THC demonstrated delayed hatch rate, higher death rate, and shorter embryos with curved spines when compared to control embryos. In this study, we also examined the effects of cannabidiol (CBD), a widely available, legal substance used as treatment for numerous ailments from relieving pain or stress to enhancing sleep. We compared the effects of treatment with CBD, Δ8-THC, and Δ9-THC to experimental controls on the embryonic development of zebrafish, Danio rerio. Embryos were randomly divided into groups receiving 0, 0.15, 0.3, 0.6, 1.25, 2.5 and 5 μg/ml of each of these cannabinoids. We monitored embryos daily to record the number of embryos that were dead or alive. We also recorded daily how many had hatched from their chorions. Embryos were allowed to develop until day four post-fertilization (4 dpf) when spinal curvature and heart rates were assessed. We then anesthetized the embryos, fixed them in 4% paraformaldehyde overnight and stored them in 100% methanol at 20° C for morphologic assessment of jaw structure using Alcian blue staining of cartilage and to examine the pattern of neural development through immunofluorescent staining. This project is ongoing, and we have yet to examine jaw structure or neural development. Initial data suggest that CBD, like Δ8-THC and Δ9-THC, promotes spinal curvature, mortality, delayed hatch rate, and decreased heart rates. Thus, exposure to CBD, like Δ9-THC and Δ8-THC, does not appear to be safe during embryo development. While we cannot extrapolate the results of this study to humans, caution may be appropriate, given the high conservation of genetics and key signaling pathways between humans and zebrafish, a model being increasingly used for developmental studies.

Measuring The Feeding Rates of *Sasajiscymnus tsugae* Beetles Using a UV Light Detection Technique on Hemlock Woolly Adelgid

Course Project in BIOL 3985: Biological Research Methods
Poster Presentation at URD

Aniba A. Reddick
Faculty Mentor: Dr. Paul Arnold

Introduced in the eastern US in the 1950s, Hemlock Woolly Adelgid (HWA) is an invasive insect that feeds on Eastern Hemlock branches, causing severe disease and death. *Sasajiscymnus tsugae* (St) beetles are natural predators of HWA in its native habitat in Japan, that were introduced into the US to combat this disease. McDonald & Kok developed an UV-A light

detection technique used to detect the presence of beetle predation on HWA. Spots on infested Hemlock branches that glow chartreuse-green, yellow or orange in the presence of UV-A light are evidence of predation on HWA. In this study, UV-A light was used to compare the predation levels between male and female St beetles, hypothesizing that female St beetles may eat more HWA than males due to a greater need of nutrient resources for egg-laying. Bouquets of hemlock branches were placed in oviposition jars that either contained male St beetles, female St beetles, or no beetles (control). Predators were allowed to feed for a week on the branches which were then examined with UV-A light to determine the number of "glow spots" on the branches, indicating predator feeding. Preliminary results show that hemlock branches in the St beetle treatments showed much more evidence of predation than the control. Further data is being analyzed to see if there is a difference between the St sexes.

Effects of EGCG on CYP1A1 Promoter Activity in Mouse Liver Cells
MRE, ACA Ledford Scholar Project
Oral Presentation at URD

Sophia C. Shook
Faculty Mentor: Dr. Jennifer Schroeder

Cancer has become a pandemic with no end in sight because of so many factors that are difficult to avoid. However, there are some well-known preventatives to cancer found in our diet, like certain chemical components from green tea extracts, particularly the bioflavonoid, EGCG. Such chemicals inhibit the binding of the AhR to the promoter region of the CYP1A1 gene by acting as a competitive inhibitor of carcinogenic environmental agents, like B[a]P. Activation of the AhR can induce transcription of drug metabolizing enzyme, CYP1A1, leading to the formation of mutagenic metabolites of B[a]P. One common route of exposure for B[a]P is a diet that includes foods prepared from charcoal grilling. In these experiments, we explored the inhibiting properties of EGCG to the CYP1A1 pathway, addressing the effects of EGCG on the CYP1A1 promoter activity in Hepa 1.1 cells (mouse hepatocyte) cells when treated with B[a]P and other chemicals isolated from charcoal-grilled chicken. The results from this research showed a significant decrease (p-value < 0.05) in the luciferase-protein adjusted readings of the 'done' chicken that was co-treated with 100 μM EGCG but not with the lower concentration of EGCG. However, we did not find a significant decrease (p-value > 0.05) in luciferase protein-adjusted readings for the "well-done" chicken with either concentration of EGCG tested. Unexpectedly, we saw a significant decrease (p-value < 0.05) in the luciferase protein-adjusted readings in the basal AhR activity with the lower concentration of EGCG. Overall, we found that EGCG has promising protective effects against carcinogens, like B[a]P, that are found in foods common in the human diet, like grilled chicken.

Evaluation of Food Mix to Increase Worm Health for Vermicomposting

CURE Project in BIOL 3985: Invertebrate Zoology
Poster Presentation at URD

Anderson M. Rawls, Katie M. Forrester, and John T. Ray
Faculty Mentor: Dr. Kevin Geyer

Vermicomposting is a method of decomposition done by worms to enrich soil. In this project, we tested which food sources help worms grow best. We measured worm growth in weight over a 6-week experiment. Our test included three different cultures of feed for the worms: dried red maple leaves, lettuce, and a mix of lettuce and leaves. Three replicate bins of 10-15 Red Wiggler (*Eisenia fetida*) worms were assembled. Bins were 50 gallons in size, deep enough for the worms to feed among ink-free newspaper with potting soil inside. Bins were held in the same environment under the same temperature (70°F). The soil was kept moist and the worms inside were fed about 50 g of food every 10 days with data collected on worm weight every 10 days from the start of the experiment. According to a repeated-measures ANOVA, the weight across all treatments significantly increased with time ($p=0.019$) and a trend for greatest weight gain was observed in the combination (litter + lettuce) treatment although not significant ($p=0.35$). No interaction between treatment and time was found ($p=0.69$). The result of a significant weight gain over time of worms was expected. Feed type had no effect on worm weight for the duration of our study, and any perceived difference between the groups was coincidental. To grow worms best, we suggest use of a mixture of lettuce and leaves although we cannot fully guarantee worms will grow best in this culture. Looking back on our experiment, we would have grown the worms for a longer duration to have more conclusive results. *Funding provided by the YHC Undergraduate Research Program.*

In-depth Survey of Plethodontidae Salamander Diversity at Two Locations on the Campus of Young Harris College

BIOL 4990: Biology Capstone
Oral Presentation at URD

Kori Still
Faculty Mentors: Steven Riera & Dr. Jonathan Micancin

In the forest around Young Harris College, in Towns County, Georgia, there is vast biodiversity of amphibians. This study observed the presence of salamanders in the Plethodontidae family, with emphasis on the *Desmognathus aeneus* species, along the banks and in the creeks at Bear Creek, and Kirby Cove. During surveys researchers observed primarily the presence of salamanders in the genus Desmognathus. Data from each survey included species counts of all individuals seen. After surveys at both locations were repeated

and complete, quantitative analysis were run on several ecological aspects of both locations including; species abundance, species richness, species evenness, Shannon index, and counts of Desmognathus aeneus. Quantitative analyses included t-tests run on the averages of each value listed above. These values were then used to draw conclusions on ecological similarities between the Bear Creek and Kirby Cove locations. Observations include the sightings of two species of interest, *Gryinophilus porphyriticus* and *Desmognathus aeneus*, at the Kirby Cove location, along with sightings of one species of interest, *Desmognathus aeneus*, at the Bear Creek location. The results found during this research indicate that Bear Creek and Kirby Cove locations are ecologically similar in relation to the Plethodontidae family of salamanders.

Wildlife Exclusion Fence Project for Organic Garden

Course Project in ENVS 4997: Wildlife Management
Poster Presentation at URD

Liam Meyer, Heath Lucas, Kolby Moss, Colton Estes, Michael Sorenson, Alexa Berry, Zion Calhoun, Jordan McShan, Rin Schutz, and Ernest Waldroup
Faculty Mentor: Dr. Marguerite Coyle

The Wildlife Management Class collaborated with Dr. Kwiatkowski (biology), Mr. Chuck Waldroup (director of facilities), Mr. Tracy Parker (grounds supervisor), and others to assist the organic gardening class taught by Dr. Kwiatkowski in repairing a fence. Our project goal was to construct a fence that deters wildlife/pest-like animals from interacting or disturbing the garden and to ensure the fence lasts longer than a semester. We made the garden accessible for students and maintenance faculty. The importance of this project was to ensure the fence protects the garden as it is pivotal in the overall student experience of the class Organic Gardening. The construction needed to address the following challenges: the deterrent/prevention of deer entering the garden, an opening for maintenance and addition of compost, and a fence height greater than 6ft. Additional challenges included budget, labor, consideration of aesthetics, general accessibility of materials, potential for other disruptive animals to enter the garden (rabbits, birds, and bears), and how to prevent them, as well as ensuring the fence is strong enough to withstand elemental factors. No unethical means of deterrent were used to maintain a humane goal for implementing this fence.

RESEARCH HIGHLIGHT!

ANOTHER TALE OF TWO CITIES

AN MRE PROJECT WITH EMMA BROWN

❖ **WHAT FIRST SPURRED YOUR INTEREST IN THIS TOPIC? WHAT INITIAL STEPS DID YOU TAKE TO BEGIN THE RESEARCH PROCESS?**

Dr. Gray first approached me with the project. He was interested in studying the effect of school choice on families leaving cities, specifically Chicago. I knew little about the topic, so the first step was gathering literature to understand school choice better. Once I was better acclimated to the topic, we jumped into what questions we wanted to ask and how to collect data to answer those questions.

❖ **WHAT WAS MOST CHALLENGING TO YOU ABOUT THIS PROJECT?**

This project ultimately pushed me out of my comfort zone. I had never collected or sorted data or written a proper research paper. I had to get much better at asking questions and thinking critically. Another challenge was realizing the frustrations of research. We needed to find the answer to many setbacks and questions. Overall, this project challenged me to try new skills and learn about a topic I knew little about.

❖ **WHAT WAS IT LIKE PRESENTING YOUR WORK AT A PROFESSIONAL CONFERENCE?**

Presenting at a professional conference was nerve-racking. We had been preparing for it all year, and eventually, it was time to put it all together and share our findings. The conference was a good experience presenting and having academic discussions.

❖ **WHAT ADVICE DO YOU HAVE FOR STUDENTS WHO WANT TO GET INVOLVED WITH RESEARCH AT YHC?**

Do not be afraid to ask questions. It is impossible to know everything about research, especially as an undergrad. The more you ask, the more you learn. I highly encourage other students to get involved in research. It was an invaluable experience that taught me skills I will take into the future.

Another Tale of Two Cities
Independent Research: Public Policy & Law
Oral Presentation at URD

Emma L. Brown
Faculty Mentor: Dr. Nathan Gray

Many studies exist on school choice, and many studies exist on economic development; however, there is a dearth of studies that consider those two policy areas together. Some evidence does exist suggesting school choice expansion could be a rather quick economic development catalyst for areas of vast poverty. Yet, few, if any, economic development programs include school choice as a viable option for successful neighborhood revitalization. This paper addresses the first step in such a policy by analyzing the connection between income stratification, public school quality, and school choice availability. To that end, we use census data to calculate a Flight Rate by zip codes in Chicago, Illinois, which notes migration patterns among families with and without school-aged children regarding median family income, public school quality, housing options, and school choice options. We hypothesize that the migration patterns of families with school-aged children are strongly dependent on school quality; after all, virtually the only way to choose another school for children is to choose a different residence. If true, the implication is that a universal school choice policy in particular neighborhoods could cause people to stay or move to neighborhoods closer to economic and cultural centers rather than fleeing to the suburbs where the perceived better schools are located.

Chemistry & Physical Sciences

Examining Effects of Water Treatment Procedures and Water Sources on Tap Water Quality
CURE Project in CHEM 3350: Environmental Chemistry
Oral Presentation at URD

Tracy E. Dumakor
Faculty Mentor: Dr. Amanda X. Song

Tap water can be unsafe if it contains carcinogenic chemicals such as radium, trihalomethane, nitrate, or nitrite. The contaminants may come from the surroundings of the water sources or from water treatment procedures. It is important to know the quality of the water we consume and how it is affected by the water sources and treatment procedures. This research compares two different water sources—groundwater vs. surface water—as well as two different water treatment procedures—traditional vs. one-package water treatment—on tap water quality in Blairsville (Blairsville and Coosa Water facility) and Towns County (Young Harris and Towns County). The research will use online water quality data to examine the level of contaminants and analyze potential causes by comparing water sources, water treatment procedures, and water source surroundings.

Investigating the Substitution of Chicken Feather Keratin for Nail Products
CURE Project in CHEM 3150: Green and Sustainable Chemistry
Poster Presentation at URD

Austin H. Norman, Amber R. Corley, and Tracy E. Dumakor
Faculty Mentor: Dr. Charlie Swor

The use and disposal of nail polish and other similar products leads to harmful effects on the environment and on human health. Once disposed of, leaching of these products leads to soil and groundwater contamination. The fumes from certain nail products are carcinogens. In this project, we propose to substitute traditional nail products with keratin made from chicken feathers. Our research will cover how to extract keratin from chicken feathers, which is a byproduct of the poultry industry. We will explore the application of keratin, seeing if it can be included in products such as nail polishes, strengtheners, and treatments. Furthermore, we will be exploring the environmental benefits as this may help reduce the reliance on synthetics and petrochemicals, as well as recycle poultry waste and reduce the toxicity of these products. *Funding provided by the YHC Undergraduate Research Program.*

Chitin-derived Materials for Cosmetic Implants
CURE Project in CHEM 3150: Green and Sustainable Chemistry
Poster Presentation at URD

Abbigayle E. Sutton and Kiera E. Lewis
Faculty Mentor: Dr. Charlie Swor

In the last decade, an average of 310,000 women per year in the U.S. have undergone breast augmentation surgery. The two most commonly used materials for breast implants are saline and silicone due to their durability and relatively simple implementation. However, serious health complications such as infections, disease, and cancer have been strongly correlated to the substances currently used in this procedure. The purpose of this study is to examine safer alternative materials that can be used to replace silicone and saline in this procedure, such as chitin. Chitin is a strong, fibrous, naturally sourced polysaccharide found in crustacean shells that cannot be broken down by human enzymes. Additionally, chitin has been shown to have antioxidant, anti-inflammatory, and anticancer properties. This study will focus primarily on the potential of chitin and chitin derivatives as a possible replacement for silicone and saline in breast augmentation procedures. *Funding provided by the YHC Undergraduate Research Program.*

Green Disposal of Unwanted Medications Using Novel Solvents

CURE Project in CHEM 3150: Green and Sustainable Chemistry
Poster Presentation at URD

Madisen N. Tolbert, Brynne M. Culp, and Abigail C. Schirm
Faculty Mentor: Dr. Charlie Swor

Medications have a limited shelf life and should not be taken after they expire. Copious amounts of drugs are unused and disposed of improperly; commonly thrown away or flushed. Pharmacies recommend returning unused and unwanted products. However, returned products are not safely disposed of either. Discarded medications in landfills or sewage leak into the soil or water supply, polluting the environment and affecting people and aquatic life. The solution to this problem is to decompose organic matter to a completely benign state. We propose to study the utilization of novel solvents such as supercritical fluids and ionic liquids to break down persistent medications whose hazards otherwise cannot be diminished. Application of these solvents to treat returned and unused prescription medications can reduce the amount of improperly disposed pills and thus the contamination of the environment. *Funding provided by the YHC Undergraduate Research Program.*

Comparison of a Two-string Pendulum to that of a Simple Pendulum

Honors Project
Oral Presentation at URD

Tracy E. Dumakor
Faculty Mentor: Dr. Baishali Ray

Pendulum oscillations serve as a fundamental model for studying periodic motion and are widely applicable across various scientific disciplines and real-world scenarios. This study aims to compare the oscillatory behavior of a traditional single-string pendulum to that of a modified two-string pendulum configuration. While a single-string pendulum is a commonly studied system with a mass attached to a rigidly supported thread, the two-string pendulum introduces a novel configuration where the pendulum is supported by two separate strings. Our investigation involves analyzing the time periods of oscillation for both pendulum setups under varying conditions, including changes in pendulum length and separation between the two strings. Through rigorous experimentation and data analysis, we aim to determine whether the time period of oscillation remains consistent between the two setups or exhibits notable differences. The significance of this research extends beyond theoretical understanding, as the findings have practical implications for diverse fields such as physics, engineering, and metrology. Accurate measurement and control of oscillatory systems are crucial in numerous applications, including timekeeping devices, seismic analysis, end of storm

oscillations, and structural engineering. By elucidating the dynamics of pendulum oscillations and exploring the factors influencing their behavior, this study provides valuable insights for optimizing oscillation-based technologies and experimental methodologies. Furthermore, the comparative analysis between single-string and two-string pendulum configurations offers novel perspectives for future research endeavors. Insights gained from this study may inform the design of advanced pendulum-based instruments, the development of precise oscillation measurement techniques, and the exploration of nonlinear dynamics in complex mechanical systems. This research contributes to both theoretical knowledge and practical applications, highlighting the versatility and significance of pendulum oscillations in scientific inquiry and technological innovation.

Communication Studies

RESEARCH HIGHLIGHT!

COMM 4110: THE DARK SIDE OF INTERPERSONAL RELATIONSHIPS
A CURE PROJECT WITH DR. JENNIFER HALLETT

❖ **WHAT NEW PROJECT DID YOU IMPLEMENT THIS YEAR?**

Fifteen students in COMM 4110: participated in a survey project to measure several variables related to interpersonal relationships. Students self-selected into seven different groups. Each group selected two variables (at least one of which had to be a communication variable, and at least one had to be a "dark side" variable not discussed in class). Each group then sought to address whether their selected variables were statistically related.

❖ **WHAT DID YOUR STUDENTS INVESTIGATE?**

Students hypothesized relationships between **deception and loneliness; social conformity and happiness; conformity and self-disclosure; self-disclosure and fatal attraction; communication anxiety and a fear of missing out; narcissism and passive aggressive communication; and parasocial relationships and envy.** Groups conducted literature reviews of the selected variables, hypothesized outcomes, used extant surveys to measure their variables, and analyzed correlations between variables from self-report data obtained through convenience and snowball sampling online.

❖ **HOW DID YOUR STUDENTS SHARE THEIR WORK AND WHAT DID THEY DISCOVER?**

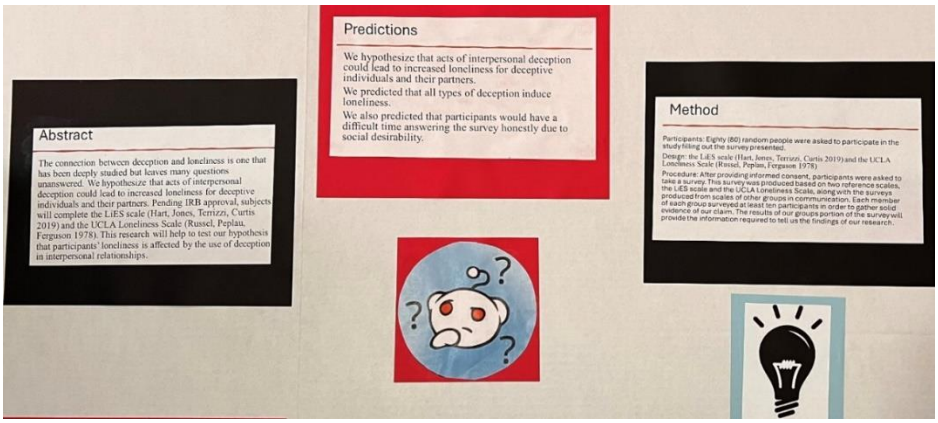
Students designed posters or talks to illustrate their findings, all of which were presented at Undergraduate Research Day.

STUDENT WORK

The Connection between Deception and Loneliness

Poster Presentation at URD

William P. Standard, Emma J. Kolar, and Alfonzo Hilliard



The connection between deception and loneliness is one that has been deeply studied but leaves many questions unanswered. We hypothesize that acts of interpersonal deception could lead to increased loneliness for deceptive individuals and their partners. Subjects completed the LiES scale (Hart et al., 2019) and the UCLA Loneliness Scale (Russel et al., 1978). This research sheds light on whether participants' loneliness is affected by the use of deception in interpersonal relationships.

Impact of Social Conformity on Happiness

Poster Presentation at URD

Nicholas M. Forthman and Christina M. Nichols

Happiness is a state of mind that is universally sought after, however the steps for living a happy life are not fully understood. To better understand happiness, this study looks at the impact of varying degrees of social conformity on happiness. We hypothesize that social conformity has a curvilinear relationship with higher levels happiness such that happiness rises alongside social conformity, but then happiness falls with high conformity. College students were surveyed for their overall level of happiness (Lyubomirsky, 1999) and how strongly they socially conform (Mehrabian, 1995). The results of this study shed light on the relationship between social conformity and overall happiness.

"Sorry I made it weird": An Analysis of Conformity and Self-disclosure
Poster Presentation at URD
Sarah N. Mele and Chloe M. Jones

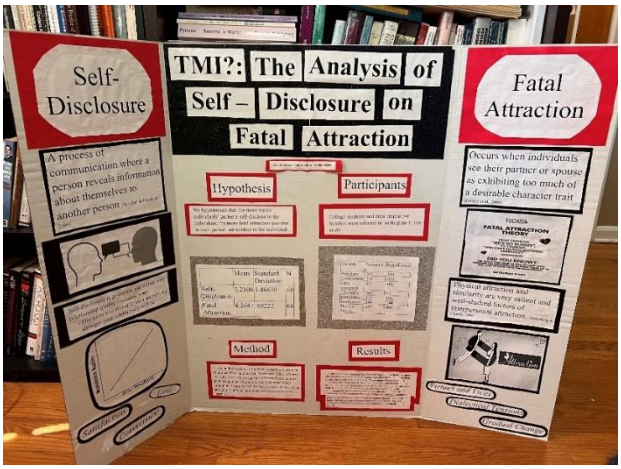
Drawing on literature about self-disclosure and conformity in interpersonal relationships, this study examines the ways in which conformity relates to self-disclosure. Participants will complete The Self-Disclosure Index (Miller et al. 1983) and The Conformity Scale (Mehrabian & Steel, 1995). Our expectation is that the more one conforms to others, the more they will self-disclose to others. This research sheds light on interpersonal closeness as a function of both self-disclosure and conformity.

"I'm sure you wouldn't know anything about that, but I do": The Analysis of Narcissism and Passive Aggressive Communication
Poster Presentation at URD
Kerrigan Nolan and Abigail Goss

The study investigates the relationship between narcissistic traits (Raskin, R.; Terry, H.) and passive-aggressive communication styles (Lim, Y-O.; Suh,K.-H.) through surveys. Based on well-established psychological and communication studies literature we hypothesize that people with greater levels of narcissism are more prone to use passive-aggressive communication techniques to maintain control and assert dominance in social situations. Comprehending this association can provide valuable understanding of the intricate relationship between personality traits, communication habits, and consequences for interpersonal dynamics.

An Analysis of Communication Anxiety and a Fear of Missing Out
Poster Presentation at URD
Rebekah K. Hubley and Adelynn J. White

This study evaluates the relationship between Communication Anxiety and a Fear of Missing Out (FOMO). FOMO provides a need to belong, coinciding with anxiety and low control of emotions. According to the literature there is not always an association between anxiety and Fear of Missing Out. We hypothesize that those who experience high levels of FOMO—as measured by the Fear of Missing Out scale (Bowman & Clark-Gordon, 2019)—will experience high levels of Communication Anxiety as measured by the Communication Anxiety Regulation scale (Shue, 2019). This research will shed light on the disputed relationship between anxiety and FOMO.



TMI?: The Analysis of Self-Disclosure on Fatal Attraction
Poster Presentation at URD
Theresa A. Boydstone, Nicole Klucharich, and Shelby N. Mullins

Fatal attraction happens when individuals see their partner or spouse as exhibiting too much of a desirable character trait (Felmlee et al., 2014). Self-disclosure is a process of communication where a person reveals information about themselves to another person (Sprecher & Hendrick, 2004). There is plenty of research done on the two concepts separately, but little research has been done on the relationship between the two. Our research examines the correlation between fatal attraction and self-disclosure using the Fatal Attraction Instrument (Felmlee, 2004) and the Self-Disclosure Index (Miller et al, 1983). We hypothesize that the more topics individuals' partners self-disclose to them, the more fatal attraction qualities individuals will perceive in their partner.

The Dark Side of Parasocial Relationships: Entertainment and Envy
Oral Presentation at URD
Piper J. Fendley

Social media has become one of the most ubiquitous methods of communication we face. Because there are "dark sides" to all tools of communication, my research examined to what extent parasocial relationships relate to envy. My study specifically sought to determine the directional relationship between parasocial relationships and envy from a communication lens. I hypothesized that those scoring high on parasocial interaction, as measured by the Celebrity-Persona Parasocial Interaction Scale (Bocarnea & Brown, 2007), would also score high on envy, as measured by the Benign and Malicious Envy Scale (Lange & Crusius, 2015). The results of this study narrow the scope on the "dark side" of communication tactics.

Our Red Thread Connection
Course Project in COMM 1100: Introduction to Public Speaking
Oral Presentation at URD

Olivia C.Z Ewing
Faculty Mentor: Dr. Richard Stafford

An ancient Chinese proverb states, "An invisible thread connects those who are destined to meet regardless of time, place, or circumstance. The thread may stretch or tangle, but it will never break." Originating from an informative speech assignment, Our Red Thread Connection is the story of how I and my 17 sisters have stayed connected during our 19 years, even though we have lived far apart. From our adoption day in the Chinese Province of Hunan, to going to college across the U.S., we have stayed together despite the odds. This research project focuses on the academic value of studying intercultural connections, explores the circumstances that joined us, and explains the importance of this cultural phenomenon that joined 18 young Chinese girls together. My sisters and their families are so meaningful in my life, and I am so fortunate to share our story with you. A red thread connection exists between everyone, and this presentation will reveal how you can find similar connections in your life.

Size Matters: Plus Size Representation in Fashion Media
COMM 4300: Senior Capstone
Poster Presentation at URD

Chloe M. Jones
Faculty Mentor: Dr. Matthew Boyd Smith

This work applied feminist and framing theories to critically analyze how Victoria's Secret and Aerie represent plus-size women in fashion media. In an already diverse society, these brands substantially influenced beauty standards, ideals, and societal perceptions. This study examines the use of language, imagery, and messaging, focusing on these brands' contributions to body image standards. By integrating feminist and framing theories, this analysis provides an intricate understanding of how these brands impact body positivity and inclusivity discourse in fashion media.

How Do Framing and Fanship Biases Impact the Consumption of Sports Media?

COMM 4300: Senior Capstone
Oral Presentation at URD

Nicole Klucharich
Faculty Mentor: Dr. Ambyre Ponivas

The growing accessibility to mass communication has put sports media at our fingertips. The instant and ever-present gratification we receive from sports media has its advantages and disadvantages. Factors such as fanship and framing may impact our interpretation of information. Previous research has found that the increase in social media usage has opened the window for parasocial relationship development among sports figures and consumers, which ultimately allows us to create attitudes and attributions towards those figures we have not met. This study is important because it examines the impact of fanship and framing on the interpretation process of different individuals, ranging from low to high fanship. The variables of fanship, parasocial relationships, attributions, attitudes, and framing were all evaluated. The major findings in this study should point to the concept that fanship protects higher fanship individuals more from the influences of framing than that to low fanship individuals.

Lollipops Make You Skinny?: Kim Kardashian and the Ethics of Influencer Advertisements on Instagram

COMM 4300: Senior Capstone
Oral Presentation at URD

Sarah N. Mele
Faculty Mentor: Dr. Matthew Boyd Smith

Influencers have taken over the world of social media, informing us about news, popular culture, lifestyle, and ourselves. Thus, influencers, when advertising brand deals or product promotions, impact what we buy, but this influence is not always positive. This contribution uses cultural studies and Marxist theory as a framework to investigate an advertisement done by one of the most popular influencers of this time, Kim Kardashian. Her brand deal with Flat Tummy Co. of appetite suppression lollipops upset most of her followers because of the promotion of toxic beauty standards. Kardashian's Instagram post became a microcosm of the broader issues ingrained within media culture and is an example of how influencers are constantly toeing the line between authenticity and transparency with profitability and improvement. This highlights an increased need for transparency and authenticity among influencers, as well as audience understanding of the potential harm that can occur from advertisements like this one.

"America's Most Controversial Decision": Cable News Reports on the Overturn of *Roe vs. Wade*

COMM 4300: Senior Capstone
Oral Presentation at URD

Rebekah K. Hubley
Faculty Mentor: Dr. Matthew Boyd Smith

Media biases are found within many cable news broadcasting channels. In relation to the overturning of *Roe vs Wade*, which occurred in June of 2022, multiple news channels such as Fox News, MSNBC, and CNN, engage in partisan media bias. In deciphering distinct biases within these news channels, comparative analysis is used to tie all three news channels together in how they reported on the overturning. I will be going through three distinct articles regarding the overturning of Roe, focusing mainly on the case study of a little girl from Ohio who was raped and forced to travel across state lines to obtain a necessary medical abortion. This story was highly controversial in the news, and all three news channels reported differently on the case. Due to Fox being conservative, MSNBC being liberal, and CNN being independent, this case study shows different reports on the same story; due to media bias, most of which is partisan. After determining the biases within each news channel, I will then discuss the different biases at play and how they are appealing and affecting audience members. The three main biases I will be looking at are the affective, information, and political biases. All three biases are intertwined throughout each story, making it more of an emotional, attention-grabbing appeal than an informational appeal. After noting these, I will discuss how the overturning is affecting America and the rest of the world, and how cable news broadcasting is choosing not to report on these real situations.

The Effect of Family Trauma on Closeness: The Transgenerational Transmission of Trauma.
CURE Project in COMM 3050: Family Communication
Oral Presentation at URD

Sarah N. Mele
Faculty Mentor: Dr. Jennifer Hallett

Trauma, and the ways in which it impacts families, can affect the closeness between family members. Drawing on literature about trauma transmission, family systems theory, and attachment theory, this study employs qualitative interviews with three generations within a single family to explore their experiences of trauma and its effects on closeness among the subjects. Results of the research showed that intergenerational transmission of trauma depends on the traumatic event, that different events are perceived as more or less traumatic, and that these perceptions can impact ratings of closeness. This research underscores the complexity of trauma's impact on family relationships and calls for further investigation into how different types of trauma influence closeness within families.

Representation, Colorism, and the New Hollywood
COMM 4300: Senior Capstone
Oral Presentation at URD

McKayla T. Milam
Faculty Mentor: Dr. Matthew Boyd Smith

Colorism is a pervasive social issue in Hollywood that impacts dark-skinned Black women as consumers and active audiences. Themes of mental/psychological health, physical health, social life, and professional life are discussed in relevance to colorism's harmful effects on heavily melanated Black women. *Gone With the Wind*, *The Imitation of Life*, *Martin*, *Black-ish*, and *Dear White People* are the visual texts that will be examined in the case study of this presentation. The analysis of these movies and shows will highlight the evolution of colorism in Hollywood throughout the years. In order to efficiently critique the complexities of Hollywood's multiple eras, a theoretical framework referred to as Black Feminist Standpoint Theory along with a methodology referred to as Cultural Studies will be utilized. The usage of this type of discourse analysis will help viewers of this presentation understand how media literacy impacts darker-complected Black women as a specific audience.

I'm Glad I Got My Girls

MRE in HONR 4101: Honors Thesis

Kristen J. Trice
Faculty Mentor: Dr. Matthew Boyd Smith

This honors thesis will discuss the differences and similarities of the tv show sitcoms *The Mary Tyler Moore Show* (CBS, 1970-1977) and *Living Single* (FOX, 1993-1998). The Mary Tyler Moore show follows recently single Mary Tyler, a white woman, as she moves to Minneapolis to start a new life for herself. The show premiered on CBS in 1970 and was groundbreaking as a sitcom had never been focused on a single woman before. *Living Single* follows a group of African American friends in their 20s as they go through life in Brooklyn; the show premiered on FOX in 1993. During the late eighties and early nineties, there was a surge in Black media, especially on the FOX network. *Living Single* was one of FOX's experiments to try and capture the Black audience. The sitcom style of following a group of friends had not been done to that extent in the black community before *Living Single*. The differences and similarities between *The Mary Tyler Moore Show* and *Living Single* can be seen in how each show addresses social progress and portrays cultural focus.

Approaching Stereotypes in Sitcoms: A Positive View on Negative Portrayals Using Genre Theory

Comm 4300: Senior Capstone
Oral Presentation at URD

Adelynn J. White
Faculty Mentor: Dr. Matthew Boyd Smith

Stereotypes are present in every type of media we consume. Through the lens of genre theory, every television show, film, and piece of literature is defined by a specific set of rules, elements, and definitions. These are not defined in a dictionary per se, but by society and its functions. Sitcoms are mainly defined in this sense as using stereotypes and humor. Through an extensive look at previous literature and an analysis of the representation of these stereotypes, this paper argues that stereotyping amid social issues has a positive effect on audiences. Three sitcoms with specific episodes in each are analyzed: *Modern Family*, *Abbott Elementary*, and *The Big Bang Theory*. Each show presents stereotypes of minority groups, and each of the characters essentially break out of their stereotypical molds.

Creative Writing

RESEARCH HIGHLIGHT!

CRWT 3507: The Longform Writing Project

A CURE project with Dr. Jen Julian

❖ **WHAT NEW PROJECT DID YOU IMPLEMENT THIS YEAR?**

Nine students in CRWT 3507: Developments in Prose took the first steps toward a longform narrative project (a novel, novella, or collection of linked stories). Students submitted a project proposal, developed a story plan, and drafted 20+ pages of new creative material.

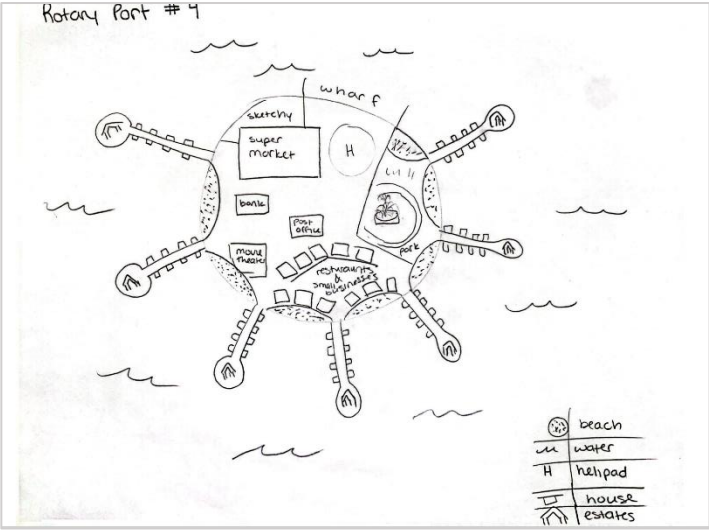
❖ **WHAT DID YOUR STUDENTS INVESTIGATE?**

Proposals named creative texts that each student thought exemplified narrative craft techniques they wanted to develop in their own project. Such techniques included: building narrative voice and tone, incorporating motifs and themes, effective worldbuilding, playing unconventionally with time or point of view, and generating tension, among others.

❖ **HOW DID YOUR STUDENTS SHARE THEIR WORK AND WHAT DID THEY DISCOVER?**

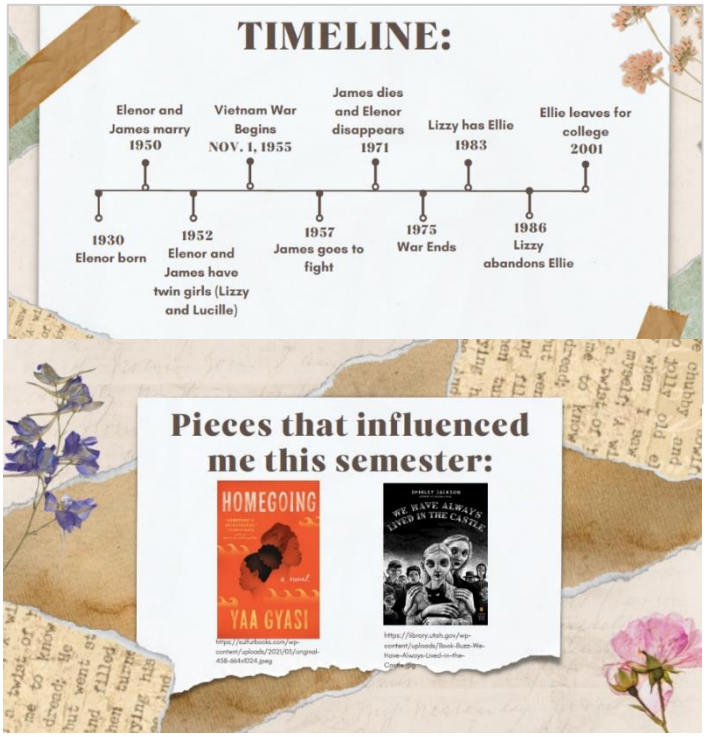
At the end of the semester, students presented their story plans to the class and received peer feedback. They were also required to write critical reflections to accompany their final draft material, citing creative texts as craft guides. In doing so, each student was able to better identify and articulate their own creative priorities.

STUDENT WORK



LEFT: A map drawn by English major **Allie Killer**, which she used to develop her story's sense of physical space. Allie's dystopian novel, *The Paradise Project*, drew inspiration from Ursula LeGuin's *The Left Hand of Darkness* in that it made use of invented archival records to craft tension and build story world. It also borrowed techniques from Charlotte Perkins Gilman's short story, "The Yellow Wallpaper," to craft an unsettling tone.

RIGHT: Slides from a story plan presentation by Creative Writing major **Laci Thompson**. Laci's novel project spans many years and involves complicated character dynamics within a family. She used Yaa Gyasi's novel, *Homegoing*, as a model to develop scene and sense of place. She was also compelled by the distinct, complex characters and conflicts at the heart of Shirley Jackson's novel, *We Have Always Lived in the Castle,* noting that she enjoyed how these characters raise thought-provoking questions for the reader about their motivations, many of which are left unanswered.



I Am Not My Father's Son: Poems

MRE in CRWT 4610: Creative Writing Capstone
Reading at URD

Addisyn J. Clapp
Faculty Mentor: Dr. Gale Thompson

This project explores the confessional poetry movement, and how the use of the lyrical "I" allows for the exploration of unfiltered personal experience and emotions that break away from the impersonality of previous poetry movements, focusing on the works of Sylvia Plath and Anne Sexton. It looks at the blending of the speaker and the poet, and how there seems to be a lack of privacy between the poet and the reader. This project traces how self-expression through the lyrical "I" has paved the way for contemporary feminist poetry by giving marginalized voices a space to express their emotions and lived experience. My manuscript is a companion to this essay that focuses on exploring religious trauma, lesbianism, and girlhood through the lyrical "I" and is influenced by confessional poetry. How much privacy are we allowed when we write about personal experiences? How do we write about past traumas and experiences without aestheticizing or minimizing them? How much of ourselves do we put in the poem?

Imagery: The Backbone of Poetry

MRE in CRWT 4610: Creative Writing Capstone
Reading at URD

Genevieve L. Roy
Faculty Mentor: Dr. Gale Thompson

This essay explores how imagery affects every part of poetry and the balance between showing and telling. It takes a look at tone, voice, language, and pacing in terms of how imagery can enhance all of them. It shows how summary is also important and should work together with imagery to open up room for every other craft element. Poets like Mary Oliver, Elizabeth Bishop, Wallace Stevens, and A. Van Jordan are used as examples of how imagery can be used to benefit a poem as a whole. *Childhood Creatures* is a companion manuscript that focuses on the imagery of childhood, whether dark, nostalgic, or both. How do our family members' choices affect us long term? How does that change how we see the world as adults? Is it okay to want to indulge in our childhood innocence to escape? How does one deal with the awkward transition between childhood and adulthood? *Funding provided by the YHC Undergraduate Research Program.*

Education

Attitudes Towards Mathematics in Elementary Students
MRE in HONR 4101: Honors Thesis
Oral Presentation at URD

Sarah M. Teague
Faculty Mentor: Dr. Susan F. Krebs

This honors thesis examined a myriad of influences contributing to a negative attitude towards mathematics among elementary students. This study was composed of a literature review and a survey where elementary students were asked about their feelings towards mathematics. By scrutinizing existing research, the review of the literature provided a comprehensive understanding of the challenges faced by young learners in embracing mathematics. The primary goal of this study was to identify factors and explore potential remedies through the implementation of curiosity-based interventions. In a school in rural northeast Georgia during the fall of 2023 and the spring of 2024, a sample of 26 elementary school students in kindergarten (13 students) and second grade (13 students) experienced curiosity-based math instruction and activities for five weeks. While students' post-intervention responses regarding their math ability did not differ by statistical test, observing the students' reactions to different approaches to the material was educational. Future research should continue to explore effective strategies for fostering a positive and engaging mathematical experience during the crucial early education years.

English

"It's All Nonsense. It's Only Nonsense.": Catherine Barkley's Reality in Ernest Hemingway's *A Farewell to Arms*.
Course Project in ENGL 4997: Ernest Hemingway, Senior Capstone
Oral Presentation at URD

Kody J. English
Faculty Mentor: Dr. Eloise Whisenhunt

Ernest Hemingway's novel *A Farewell to Arms* has been the subject of critical debate due in large part to Catherine Barkley's role. Traditionally, the critical argument surrounding her character can be divided into two camps. The first identifies Catherine as a mere sexual object who lacks agency and/or depth. Since the 1980's, however, Catherine's role has been put forward as having agency beyond Frederic. The critique of Catherine that I am presenting aligns more with recent critiques. I contend that Catherine's role is to serve as a catalyst for change, growth, and movement through her crafting the world of fantasy for herself and Frederic. To escape the harsh reality of the real world, specifically the world of horror that WWI created, Catherine Barkley crafts an idealistic world for her and Frederic to live in outside of reality. She, therefore, not only has agency; she has authority.

A Shift in Language in *Mi Revalueshanary Fren*: How the Afro-Caribbean Diaspora Changed the Scope of the English Language in the United Kingdom
CURE Project in ENGL 4996: Postcolonial Literature, Senior Capstone
Oral Presentation at URD

Joel C. Whittingham
Faculty Mentor: Dr. Daniel Helbert

The current study explores how Linton Kwesi Johnson's collection of poems "Mi Revalueshanary Fren" was a driving force giving a voice in the arts to the Afro-Caribbean Diaspora in the United Kingdom, and how this ultimately changed the dialects of the United Kingdom especially in culturally diverse areas. LKJ's "dub-poetry" has a musical element, which influenced how his use of Patois/Jamaican creole was received and adopted by many different people around the U.K. The influences from Caribbean culture—which included LKJ's dub poetry using Jamaican Creole vernacular—allowed record shops to appear, pushing Reggae music to the people of the U.K, birthing new types of music such as Jungle, Garage, and also Grime, seen as one of the U.K's first authentic cultural exports in decades. With the popularity of LKJ's dub-poetry and its musical elements, we see how his work significantly influenced the evolution of the English language since the diaspora's introduction to UK society.

Objectification in Mary Shelley's *Frankenstein*

Course Project in ENGL 3405: Women in Literature, Senior Capstone

Larkinn-Rose Rainwater
Faculty Mentor: Dr. Ruth Looper

Mary Shelley's *Frankenstein*'s protagonist Victor Frankenstein objectifies everyone around him; however, more specifically his Creature, and because of his narcissistic traits/behavior, he feels that he is the "victim" of the Creature's actions. From Frankenstein's perspective, the Creature reflects Frankenstein's inner turmoil and selfish desire. The two characters are reflections of each other, desiring what the other has. This paper will explore how Victor Frankenstein's objectification impacts himself and the people around him, particularly the Creature, how Milton's *Paradise Lost* also presents the Creator/creation narrative, and the consequences of Frankenstein's selfish decisions. *Frankenstein*'s perspective is a mirror ball, and it reflects how both God and Frankenstein objectify their creation and how that objectification reflects on the Creator and the Creature.

The Reality of Double Consciousness: An Analysis of WEB Dubois

Course Project in ENGL 4997: African American Literature to 1900
Poster Presentation at URD

Lenyatta Walker
Faculty Mentor: Dr. Matthew Bruen

The objective of this presentation is to clarify the concept of double consciousness that was addressed and coined by W.E.B. Dubois in his book *The Souls of Black Folks*. This research will explain the synchronization of the black mind with American society. I will touch on black patriotism, whitewashing, and mental disposition by using photographical, historical, and literary evidence. The goal of this lecture is to explain double consciousness and how it still affects African Americans' day-to-day lives.

The Spiritual Awakening that Led to Nat Turner's Rebellion

Course Project in ENGL 4997: African American Literature to 1900
Oral Presentation at URD

McKayla T. Milam
Faculty Mentor: Dr. Matthew Bruen

There are moral complexities to Nat Turner's reasoning behind one of the most barbaric rebellions in American history. Challenging the contradiction surrounding the glorified White Christian God is why this particular rebellion is rarely addressed. Yet, the presentation of this essay further explains exactly why that is. The deciphering of multiple religious concepts such as prophecy, spirituality, and biblical context is used in this presentation to better understand Turner's actions through his perspective. In order for this to have been conducted properly, analysis of the figurative language used throughout most of Turner's confession aided in decoding his letter. His infamous letter utilized a great quantity of esoteric imagery to describe the signs shown to him through communication with religious entities. Inspecting the nuances of Turner's decisions will showcase how heavily influential the Anglo-Saxon Christian faith was and still is in the United States in regard to oppression.

History

RESEARCH HIGHLIGHT!

HIST 4997: Introduction to Museum Studies

with Jacqueline Bruen

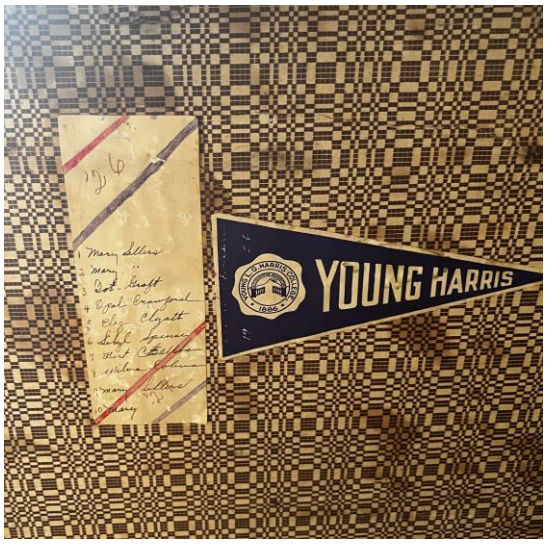
❖ **WHAT NEW PROJECT DID YOU IMPLEMENT THIS YEAR?**

Young Harris College was recently gifted a local farmhouse which included the majority of the household furnishings as well as some antique farm equipment in the barn. The gift of this property set up the perfect location to teach a class on Museum Studies and provide hands-on instruction about cataloging objects and designing an exhibition. The Cherry Farmhouse dates back to the late 1800s or early 1900s and was occupied by members of the Cherry Family from 1910 until 1976, when the descendants of the family used it as a 2nd home and gathering spot for family reunions. The class included classroom instruction as well as instruction at the Cherry Farm.

❖ **WHAT DID YOUR STUDENTS INVESTIGATE?**

The students investigated the items in and around the farm property and worked in small groups to catalog the objects and put together a cohesive virtual exhibition. The students learned how to handle historical objects and how to document them for both insurance and preservation purposes. The students also learned how to ask questions about what they can learn from an object and how the same group of objects can be put together in different ways to tell different stories.

❖ HOW DID YOUR STUDENTS SHARE THEIR WORK AND WHAT DID THEY DISCOVER?



The students in the class were split into three groups to put together virtual exhibitions utilizing items found at Cherry Farm. Each group told a different story that connected to the house and the Cherry Family. One group focused on the role of women in rural communities and highlighted items associated with female labor including an ironing board, wood burning stove, and an apron. Another group focused on the life of Frank Cherry, who grew up in the home and then owned it until 2002. There were many items focused on Frank Cherry's life on display in the house including his trunk from when he was a student at Young Harris College, his report cards as a high school student and from Young Harris College, and a newspaper clipping announcing his wedding. The final group focused on the Americana décor and connected the love of the rural country with that of love for the nation. All three groups presented their exhibitions as talks at Undergraduate Research Day.

Mid-20th Century Life for Women in Rural North Carolina

Percy J. Ahlgrim, Skylar R. Allison, Kennedy R. Couch, and Molly B. Holland

Women throughout history are often forgotten, especially in rural areas where their lives revolved around ensuring their family stayed clean, fed, and clothed. At the Cherry Farm in North Carolina that was donated to Young Harris College, we were able to see a peek into the everyday routine of women and girls who made their lives within the confines of a three-bedroom, one-bathroom house. The house sits empty now, but it used to house multiple children and then even more grandchildren. We were able to examine objects as small as cookbooks and personal bibles to things as large as gas stoves and cribs, while also being able to walk through the various areas of the Cherry family's farm. In our exhibit Mid-20th-Century life for Women in Rural North Carolina, we strived to bring to light the stories of women that have gone untold, along with emphasizing the importance of telling these small histories of daily life decades ago.

The Life of Frank Cherry

Payten Calvert, Mya Halverson, Kristen Trice, and Lenyatta Walker

This current exhibit explores Frank S. Cherry's early life ranging from the 1900's to the 1940's. The exploration of Frank Cherry's time as a student at Young Harris College will be enlightened upon and as well as his youth residing on the Cherry Farm in Hayesville, NC. His adolescence depicts his transition from living in a rural area to building a life as an educated man.

Love of Country: The Interconnectedness of the Historical Love for America and the Country Lifestyle

Georgia K. Miller, Kevin A. Petty, Mckenna E. Peaster, Daniel R. Michie, and Edith T. Ledford

This presentation shows the interconnectedness of a country's lifestyle and love of America with items from the Cherry home. As the landscape of the Cherry Farm prospered, so did the family. Frank Smathers Cherry, son of John Russell Cherry, grew up in the home and was a part of a family and community that cultivated a love for the country in a rural lifestyle. This American way of living inspired this young man and many others like him to join the army during World War II and to serve and protect the nation, family, and lifestyle that he valued. This is a similar narrative for many Americans in the rural Southeastern United States during World War II, especially in this area of North Carolina, and is evident in the decorative style and other items found at the Cherry Farm. This family's home and contents display a love for the nation and care for the land. As the land prospered and developed, so did they. This presentation will explore the lifestyle that was so ingrained in rural Southeastern America.

Pocahontas: The Truth to the Colors of the Wind

Course Project in HIST 3059: Colonial America to 1763
Oral Presentation at URD

Skylar R. Allison
Faculty Mentor: Dr. Leah Burnham

When one hears the name 'Pocahontas' one most likely thinks of the Disney princess who experienced a whirlwind romance with a British man named John Smith. The true story is much more sinister, with a twelve-year-old indigenous girl being used as a pawn by both her family and the European colonizers. What happened with her and Smith is often misconstrued and it seems to be because the romanticization makes it much easier to swallow than the harsh truth of colonization and the genocide of Native Americans. *Pocahontas* was a prime example of the attempt to whitewash the history of the United States to idealize the so-called 'American dream' that started with European colonization. To tell Pocahontas' true story, I deconstruct the narrative set by those looking to desensitize colonialism and its effects on her legacy in my presentation.

The Case of Alison Balfour

Course Project in HIST 3013: Witch Hunts 1400-1800
Oral Presentation at URD

Percy J. Ahlgrim
Faculty Mentor: Dr. Matt Byron

Alison Balfour, also known as Margaret Balfour, was tried for witchcraft in 1594 in Scotland. Thirty-one years earlier in 1563, the Scottish Witchcraft Act was established, which made witchcraft punishable by death. This case occurred due to Patrick Stewart, the second Earl of Orkney's paranoia, which ultimately resulted in the torture-induced confession that led to Alison Balfour being implicated and accused of witchcraft. Furthermore, this case reveals how torture-induced confessions took precedence over claims of innocence prior to one's execution, as well as how easy it was to implicate someone of witchcraft. This was the case for Alison Balfour, as after confessing due to torture, she publicly recanted her confession and pleaded innocent. However, Balfour was still executed for witchcraft on December 16, 1594, at the Gallows Ha' in Kirkwall. Thus, looking more into this case could reveal the impact of how torture-induced confessions affected innocent people, namely women in Scotland during the time of the Scottish Witchcraft Act of 1563.

The Bideford Witches

Course Project in HIST 3013: Witch Hunts 1400-1800
Oral Presentation at URD

Lily A. Buxton
Faculty Mentor: Dr. Matt Byron

In August of 1682, Temperance Lloyd, Susannah Edwards, and Mary Trembles, three women from Bideford, England, were executed under charges of witchcraft. The trial and execution of these women became notable as they were the last people accused, tried, and put to death on charges of witchcraft in England. Given their status as the last witch trials and executions in England, the women's stories gained historical significance under the common title of " The Bideford Witches" or "The Devon Witches." Though these women and their stories are often referred to in reference to the role of witchcraft in seventeenth-century English society, little is commonly known regarding the details and significance of the events which occurred prior to, during, and after their trials in particular. Further looking into the details of these events could reveal more information regarding the impact of religion, speculation, and fanaticism on English society during the seventeenth century, specifically as it pertains to women. It could also give insight as to how fear of witchcraft affected individuals within specific communities, how witchcraft became such a prominent part of life during the time period, and why it is that the three women listed above were the last to be hanged.

Richard III: An Exploration of his True Character and the Fate of his Nephews

Course Project in HIST 4990: Historiography
Oral Presentation at URD

Georgia K. Miller
Faculty Mentor: Dr. Matt Byron

This study is an exploration of Richard III and the fate of his nephews, the "Princes in the Tower." Richard ruled England from 1483 through 1485. He faced many challenges that weakened his authority, but he was a strong advocate for the common man. Even so, his villainy is considered fact. One of the key elements to this characterization of Richard is the fate of his two young nephews. Historians form two schools of thought: orthodox and revisionist. Orthodox historians' views are often formed closest to the event and are the most common. Revisionist historians have new ideas about history, whether from new evidence or new interpretations. These interpretations development more recently, or well after the original and accepted view of history. Many scholars have looked at the evidence over the past several centuries regarding the fate of the boys. Orthodox historians point towards a version of Richard who was a villain and murderer. Revisionist historians believe Richard's character was distorted and that he may not have been the one to cause the young boys' death. The truth about the princes could lead historians to the truth of Richard's character.

Did Foreign Powers Support the Confederacy During the American Civil War?
Course Project in HIST 4990: Historiography
Poster Presentation at URD

Austin Sever
Faculty Mentor: Dr. Thomas Stearns

When most Americans think of the American Civil War, they think of it as an internal, domestic conflict between the Union and the Confederacy. However, several foreign powers—including Great Britain, France, Spain, and Russia—were intently watching, if not trying to intervene in, this war. The scholarship on this subject, specifically relations with the Confederacy, continues to evolve over time. This project focuses on the change in scholars' positions and the two camps that have formed. The first one, the orthodox school of thought, believes that foreign governments had a strong anti-Confederacy outlook. They opposed supporting the Confederacy because of the failure of King Cotton to sway government officials, divisions in class, and slavery. In rebuttal to the orthodox theory, some scholars have formed the revisionist school of thought to combat orthodox theories. The revisionists believe that class and slavery were not factors and that instead, the support for new markets and dismantling the Union's democratic bedrock pushed them to advocate for the Confederacy. Scholars from both theories bring forward excellent points and use substantial evidence to support their positions. This project intends to contrast the two points of view and the reasons they give.

Agnus Sampson, a Witch's Story: How an Unlikely Woman Became the Center of King James VI's Quest for Power
Course Project in HIST 3013: Witch Hunts 1400-1800
Oral Presentation at URD

Morgan E. Tidwell
Faculty Mentor: Dr. Matt Byron

Witch Hunts were prominent in Scotland during the 1650s, especially in coastal North Berwick, a short distance from Edinburgh. Some of the most influential European witch hunts occurred here. Agnus Sampson, a respected midwife became the center of one such witch hunt. Sampson became entangled in a highly political power play orchestrated by King James VI that would alter history and tragically end her life.

Mathematics

Solving Logic Games with Optimization and Applications
Course Project in MATH 4996: Special Topics in Math
Oral Presentation at URD

Lillian Hidalgo
Faculty Mentor: Dr. Alexander Barnes

This research aims to show the practical applications of linear optimization as well as study the techniques used to solve such problems. Mathematical optimization is a method used to achieve the most optimal outcome in a mathematical model. After a short introduction to optimization and explanation of the objective function and constraints needed to set up each problem, a familiar logic puzzle (Ken-Ken) will illustrate the basics. A manufacturing application problem will be modeled, discussed, and a solution presented with ties to other applications and adjustments.

Music

The Romantic Duets of Jason Robert Brown: A Study and Performance

Musical Performance at URD

McCormick M. Anderson (with performance by Casey Harris and Reagan Rowland)
Faculty Mentor: Gina Dropp

Jason Robert Brown is an American composer/lyricist who has established himself as one of the leading writers of contemporary musical theatre. He is the composer/lyricist for shows including *Parade*, *The Last Five Years*, *Bridges of Madison County*, *13*, and *The Connector*, in addition to releasing two solo albums. This study examined Brown's style specifically through his romantic duets. These songs are considered by many to be his greatest, and they possess a lot of similarities in their musical composition and in terms of their plot devices. This study culminated with a presentation of some of these similarities using a variety of musical examples, followed by a performance of the song "One Second and a Million Miles" from *The Bridges of Madison County*, with Senior BFA Musical Theatre Majors Casey Harris and Reagan Rowland.

YHC Wind Ensemble Performance.

Musical Performance at URD

Sarah M. Carver, Ella S. Casey, Anthony M. Stevenson, and Callie M. Atkinson
Faculty Mentor: Cheryl M. Star

To explore the varied repertoire for small ensembles, we chose traditional woodwind quintet music then adapted it to fit our available instrumentation: two flutes, clarinet, bass clarinet, and saxophone. We will present a fifteen-minute concert that includes a traditional march from the concert band repertoire, a classical chamber music concerto, and more.

Outdoor, Sport, & Recreation Studies

Looking through the Lens of a Woman: Women's Confidence in Leadership Positions in Outdoor Contexts
MRE in ODRS 4980: Independent Study (Questions That Matter)
Poster Presentation at URD

Janie A Jones
Faculty Mentor: Dr. Joseph Pate

The purpose of this presentation is to share preliminary understandings of women's confidence levels in leadership roles within outdoor contexts. By using qualitative methods and approaches such as narrative inquiry and ground theory (Emerson, 2001), the aim of this project was to explore and better understand experiences behind this phenomenon. Through the use of a constructivist worldview (Creswell, 2023) this poster examines open-ended, interpretive, and inductive-styled inquiry. Qualitative Inquiry reveals the complexity of lived experiences and is important as it provides different and unique ways to study and understand the world around us. This poster demonstrates an examination of different research approaches and how they might be used to explore the lived experiences of women in leadership roles within outdoor contexts. Through my immersion in qualitative inquiry approaches, I share about the origin of this question, its relevance, diverse methodological approaches and orientations, as well as various research experiences explored, preliminary findings, and future directions of this study.

Crafting a Conceptualization of Passionate Activities: Actualizing a Life Well-lived
MRE in ODRS 4980: Independent Study (Questions That Matter)
Oral Presentation at URD

Julia C. Fleming
Faculty Mentor: Dr. Joseph Pate

This presentation demonstrates my exploration of foundational processes important to research and inquiry. My focus was on learning new ways of understanding and gathering data through various methodological approaches. Accessing research and literature grounded in positive psychology that explores experiences that provide meaning, fulfillment, and purpose, this presentation conceptualizes "passionate activities" and their value for a life well-lived. The intention of this project was to examine passionate activities and to discover how they influence and potentially impact our daily lives, personal growth, and creative drive. Through exploring various qualitative methodologies, this research investigated personally relevant and significant experiences informed by narrative inquiry, grounded theory, and social media content analysis to consider biopsychosocial factors associated with passionate activities. As a result, this experience and exploration aims to provide a nuanced understanding of passion, highlighting passionate activities as a potential therapeutic tool and offering its role in fostering positive personal development. The findings may contribute to a broader conceptualization of sought after and revered meaningful lived-experiences, as well as the relevance and value of passionate activities in one's life and their transformative significance.
Funding provided by the YHC Undergraduate Research Program.

Philosophy

How Comic Books Exhibit Philosophy
Course Project in PHIL 4998: Comics and Philosophy
Oral Presentation at URD

Molly B. Holland
Faculty Mentor: Dr. Chris Lay

Comic books serve the same purpose as any other media source might, so looking at them through a philosophical lens—rather than as a form of entertainment—can give someone a chance to explore concepts that may not have been available before. In my paper, I demonstrate how comic books portray revenge and further show that revenge does not solve problems. The comics mentioned within this paper were *Batman: The Killing Joke*, *House of X/ Powers of X*, and *Immortal Hulk*. Furthermore, these were used as a vehicle to convey sub-concepts within revenge such as the danger of revenge, the consequences of generational revenge, and walking away from revenge. I connect comics to the anime *Naruto* and illustrate how both ultimately illustrate that revenge does not lead to closure.

Psychology

RESEARCH HIGHLIGHT!

Relationships between Attitudes and Experience of BDSM and Experimental Pain Response

An MRE Project with Ashley Palmateer

- **WHAT FIRST SPURRED YOUR INTEREST IN THIS TOPIC? WHAT INITIAL STEPS DID YOU TAKE TO BEGIN THE RESEARCH PROCESS?**

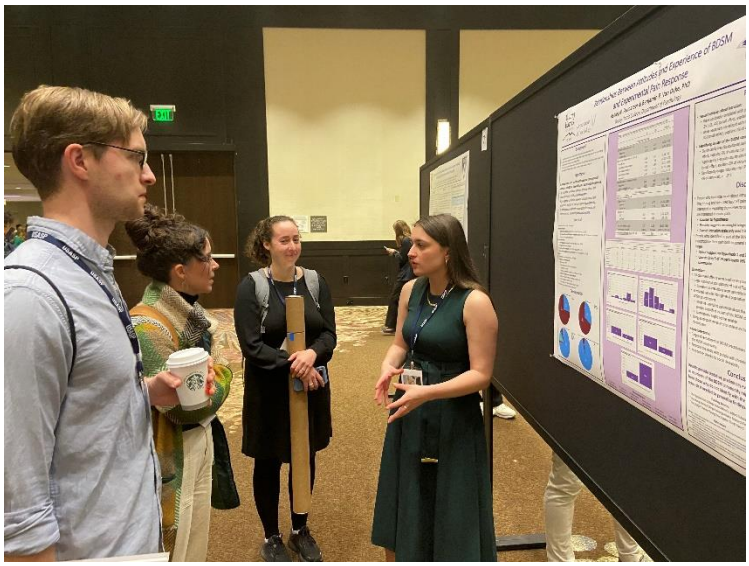
My project originally emerged from an assignment in Dr. Van Dyke's Psychology of Pain class. In this course, we were required to lead discussions on various pain-related topics, and I was tasked with exploring the intersection of pleasure and pain. The assignment involved analyzing an article on this subject and examining an additional article selected by Dr. Van Dyke.

Despite our expectation that this topic would be well-researched, I struggled to find supplementary articles beyond the one Dr. Van Dyke provided.

Faced with this challenge, Dr. Van Dyke and I saw an opportunity to explore an under-researched area within the field of pain and pleasure. I began by delving into the sparse existing literature on this topic and identifying gaps that warranted further investigation. This process led us to formulate our research topic: "Relationships Between Attitudes and Experiences of BDSM and Experimental Pain Response."

❖ WHAT WAS MOST CHALLENGING TO YOU ABOUT THIS PROJECT?

The project encountered several challenges along the way. Initially, it was funded by the Appalachian College Association's Ledford Scholar Research Program, which had a strict deadline requiring results by November 2023. Dr. Van Dyke and I began working on the project during the summer with the goal of submitting our IRB application and starting the research by the first day of class. However, we faced delays with the IRB approval process, which pushed the start of our research to mid-September. Additionally, we could only begin collecting data once our research assistants were trained and available. Fortunately, we were able to reopen the study to collect more data before the conference in Seattle. Despite this, time remained a significant challenge throughout the project.



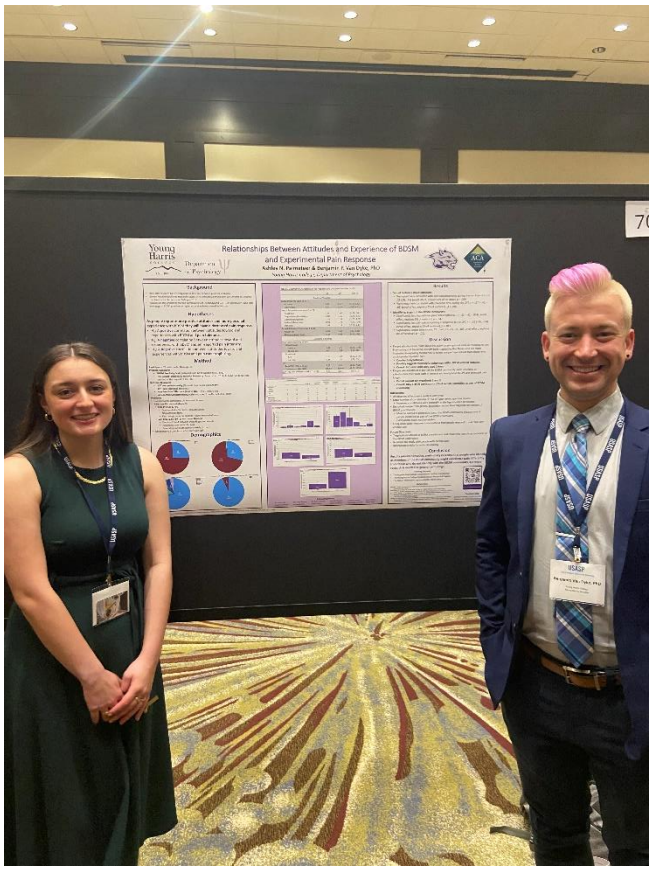
❖ WHAT WAS IT LIKE PRESENTING YOUR WORK AT A PROFESSIONAL CONFERENCE?

Presenting at a professional conference was one of the most rewarding experiences I had at Young Harris College. It offered me the chance to connect with leading experts in the psychology of pain field and network with a wide range of professionals. Engaging with these individuals not only sparked fresh ideas for my research but also opened the door for potential collaborations. It was incredibly gratifying to discuss my research with enthusiastic attendees, address their questions, and receive insightful feedback and suggestions. Additionally, feedback from fellow presenters provided valuable guidance on the next steps in my academic journey and what to expect before entering graduate school.

Beyond the professional growth, the conference allowed me to explore a new city with an amazing mentor, witness the results of our hard work, and further fueled my excitement to continue my research.

❖ WHAT ADVICE DO YOU HAVE FOR STUDENTS WHO WANT TO GET INVOLVED WITH RESEARCH AT YHC?

Research can be both tedious and immensely rewarding. If you ever have the chance to delve into a research project on any subject, seize it—you never know where it might lead you! The process of research not only deepens your understanding and skills but also opens doors to unexpected opportunities and discoveries. Embracing the challenges and uncertainties of research can lead to personal growth, professional advancement, and a sense of accomplishment that is truly fulfilling. Even if you end up not getting the results that you wanted or expected, there is so much hidden inside the 'mistakes.' So, take every chance to explore, question, and investigate, for each research experience has the potential to shape your future in remarkable ways.



Ashley and her poster presentation, along with faculty mentor, Dr. Benjamin Van Dyke.

Relationships between Attitudes and Experience of BDSM and Experimental Pain Response
Ledford Scholar Project, Presented to the US Association for the Study of Pain
Oral Presentation at URD

Ashley N. Palmateer
Faculty Mentor: Dr. Benjamin Van Dyke

Little research has investigated the fine line between pleasure and pain, such as in bondage-discipline, dominance-submission, and sadism-masochism (BDSM), and how pleasurable aspects of consensual erotic pain could be used to cope with clinical pain. This study aims to investigate and understand how attitudes toward and practice of BDSM are related to experimental pain response. We hypothesized that participants who report more positive BDSM attitudes and more BDSM experience would report lower pain catastrophizing and pain intensity and demonstrate higher pain tolerance than participants with more negative attitudes and less experience. After completing self-report questionnaires, participants completed a cold-pressor task (CPT; 2-4 degrees Celsius) and monofilament sensory testing using 300g (6.65) von Frey filaments in a counterbalanced order. Results were analyzed using Pearson correlations. The results of this research could provide insight into how individuals develop different relationships to pain, including how they learn to decatastrophize, tolerate, or even enjoy it. *Funding is provided by the Appalachian College Association Ledford Scholars Program and the YHC Undergraduate Research Program.*

BDSM Pain Behaviors and Pain Response
MRE Project in PSYC 4501: Empirical Research Senior Seminar & PSYC 3996: Independent Psychological Research
Poster Presentation at URD

Amaya N. Smith, Lauren E. Cooper, and Ashley N. Palmateer
Faculty Mentor: Dr. Benjamin Van Dyke

This study evaluated how specific behaviors practiced during bondage-discipline, dominance-submission, and sadism-masochism (BDSM) relate to how a person responds to experimentally induced acute pain. BDSM includes erotic practices potentially involving consensual pain. We are striving to understand the relationships between the specific BDSM behaviors a person practices such as biting, scratching, hair pulling, allowing themselves to be controlled by their partner, etcetera, and their pain response. We hypothesized that those who participate in BDSM behaviors that allow their partner to expose them to pain as well as those who allow their partner to dominate them, give them rules or regulations, or provide corporal punishment would report lower pain intensity and demonstrate higher pain tolerance to experimental pain testing. The participants of this study were at least 18 years or older and were asked to complete an anonymous online survey prior to completing two experimental pain

tests in a counterbalanced order (a cold-pressor task at 2-4 degrees Celsius and a sensory test using a von Frey filament). The findings from this study might provide insight into the specific BDSM behaviors and practices that are most helpful for coping with clinical pain. *Funding provided by the Appalachian College Association Ledford Scholars Program and the YHC Undergraduate Research Program.*

The Relationship between Personal Characteristics and BDSM Attitudes and Behaviors
MRE Project in PSYC 4501: Empirical Research Senior Seminar & PSYC 3996: Independent Psychological Research
Poster Presentation at URD

Brailey N. Barmore, Lorin E. Tidick, and Ashley N. Palmateer
Faculty Mentor: Dr. Benjamin Van Dyke

This study examined how self-reported levels of dispositional empathy, adult attachment-related anxiety and avoidance, and personality traits relate to attitudes and experiences of bondage-discipline, dominance-submission, and sadism-masochism (BDSM). BDSM refers to consensual erotic practices that may involve physical or psychological control and/or pain. We aim to understand the relationships between empathy, adult attachment, and personality traits and how individuals feel about BDSM and to what extent they participate in BDSM practices. We hypothesized that participants who report higher levels of empathetic emotions, agreeableness, conscientiousness, neuroticism, and attachment-related avoidance would have more negative attitudes towards BDSM practices and would engage in them less often and that participants who report higher openness, extraversion, and attachment-related anxiety would have more positive attitudes toward BDSM practices and engage in them more often. The participants for this study were adults who were at least 18 years old. The participants were asked to complete an anonymous online survey as part of a larger study on BDSM attitudes, practices, and response to pain. We believe that empathy, adult attachment, and personality traits will be important predictors of adult sexual attitudes and behaviors, which might predict willingness to engage in more diverse coping behaviors for pain. *Funding provided by the Appalachian College Association Ledford Scholars Program and the YHC Undergraduate Research Program.*

How Lifestyle Factors Predict Stress, Anxiety, and Academic Performance Among College Students

CURE Project in PSYC 3112: Research Methods and Statistics II
Poster Presentation at URD

Brailey N. Barmore
Faculty Mentor: Dr. Benjamin Van Dyke

This study examined how lifestyle factors, such as employment and social media use, are related to college students' stress, anxiety, and academic performance. Considering student employment, I hypothesized that the more hours that a student reports working at employment would predict higher levels of stress and anxiety and poorer academic performance. I also hypothesized that the more hours a student reports spending time using social media would predict higher levels of stress and anxiety and poorer academic performance. The sample for this study was Young Harris College students who are at least 18 years of age. I collected data for this study through an anonymous online questionnaire. If my hypotheses are supported, we will see a relationship between how lifestyle factors, specifically employment and social media use, negatively relate to performance in school. *Funding provided by the YHC Undergraduate Research Program.*

Relationship Between Eating Breakfast in the Morning and Academic Performance among College Students

Course Project in PSYC 3112: Research Methods and Statistics II
Poster Presentation at URD

Avery R. Brusa
Faculty Mentor: Dr. Benjamin Van Dyke

We have all heard that breakfast is the most important meal of the day. Eating a decent breakfast in the morning helps regulate one's metabolism and energy for the day. In this study, I examined the relationship between eating breakfast in the morning and academic performance among Young Harris College students. To execute this study, we provided an anonymous online questionnaire to YHC students who are at least 18 years of age. This study collected data on how often they ate breakfast and analyzed how they performed academically. I hypothesized that the frequency of eating breakfast will be positively correlated to academic performance, meaning that those who eat breakfast more often will have higher academic performance. If my hypothesis is correct, this information could be used to encourage students to eat breakfast in the morning more often. *Funding provided by the YHC Undergraduate Research Program.*

Relationship between Horror Movie Consumption and Anxiety Levels

Poster Presentation at URD
CURE Project in PSYC 3112: Research Methods and Statistics II

Sara Helm
Faculty Mentor: Dr. Benjamin Van Dyke

College students invest effort into finding ways to eliminate anxiety we may feel from classes, work, etc. Some of these methods of managing anxiety may include activities for entertainment. My research examined the relationship between students' self-reported anxiety and how often they choose to watch horror films. This question will be answered through an anonymous online survey as part of a larger study for a course-based research experience. The predictor variable of my study was the reported frequency of watching horror movies, and my criterion variable was level of general anxiety. I hypothesize that the students who report watching more horror movies will report being less anxious. I hope this study will inspire future research studies on other aspects of student mental health. *Funding provided by the YHC Undergraduate Research Program.*

The Relationship Between Sleep Quality and Academic Performance among Undergraduate Students

CURE Project in PSYC 3112: Research Methods and Statistics II
Poster Presentation at URD

Lorin E. Tidick
Faculty Mentor: Dr. Benjamin Van Dyke

This study aims to examine how sleep quality is related to overall academic performance among undergraduate college students. Academic performance is a major stressor for college students, requiring substantial mental energy and sometimes resulting in students compromising their sleep. Sleep is involved in regulating mood, immunity, brain function, and memory performance. We hypothesized that college students that report better sleep quality will report better academic performance compared to those who reported poorer sleep quality. The participants for this study were students at Young Harris College who are at least 18 years old. The participants completed an anonymous online survey about sleep and academic performance variables, including self-reported GPA and midterm grades. This study will provide insight on how having improved sleep quality can be beneficial for undergraduate college students' academic performance. *Funding provided by the YHC Undergraduate Research Program.*

How Studying and Socializing Behaviors Relate to College Student Quality of Life

CURE Project in PSYC 3112: Research Methods and Statistics II
Poster Presentation at URD

Skyler Wolf
Faculty Mentor: Dr. Benjamin Van Dyke

The goal of this study is to examine a student's quality of life by comparing different social and studying behaviors. This study was conducted through the use of an anonymous, online survey as a part of a course-based research experience. Specifically, my section examines how studying habits affect academic performance and how socializing behaviors relate to the overall stress and anxiety of a student. My hypothesis is that students who study in a group for longer will have a higher academic performance. My other hypothesis is that students who have more interactions with peers will have lower stress and anxiety. If my hypothesis is supported, then students will have a better understanding of ways to try and improve their habits. *Funding provided by the YHC Undergraduate Research Program.*

Effects of Crowd Noise on Athlete and Non-athlete Experimental Pain Response

Course Project in PSYC 3996: Psychology of Pain
Poster Presentation at URD

Julia C. Fleming and Leigha M. Whittle
Faculty Mentor: Dr. Benjamin Van Dyke

Evidence shows that athletes and non-athletes respond to and tolerate pain differently. Compared to non-athletes, athletes are surrounded by different crowd noises regularly, which research shows affects their performance. However, there is little research on the effects of crowd noise on athletes' and non-athletes' pain and how it may impact potential response to an injury. The goal of the present study is to better understand how psychological and social-environmental variables interact with athletic status in predicting response to pain and injury. We hypothesized 1) that athletes will have higher pressure pain threshold (PPT) and report lower pain than nonathletes and 2) that athletes' PPT, pain ratings, and pain catastrophizing will be less affected by the type of crowd noise than non-athletes. The participants in this study were 7 athletes and 9 non-athlete college students over the age of 18. Participants were randomly assigned to one of two conditions. All participants initially completed baseline pressure pain testing using an algometer in the absence of crowd noise. Then, depending on their random assignment, participants completed pressure pain testing in the presence of positive and negative crowd noise in a counterbalanced order. Even though none of the results were significant, effect sizes generally suggested that athletes experienced higher PPT (large effect) and lower pain ratings (small effect). To address the limitation of small sample size, future research should replicate this study with more participants. *Funding provided by the YHC Undergraduate Research Program.*

A Review of the Relationships between Inmates' Experiences in U.S. Prisons and their Mental Health and Reintegration into Society

MRE in PSYC 4500: Senior Review Literature Seminar
Poster Presentation at URD

Isaiah E. Green
Faculty Mentor: Dr. Benjamin Van Dyke

According to the U.S. Department of Justice, the goals of the correctional system include rehabilitation, reintegration, and retribution. However, research has provided little evidence to support the idea of rehabilitation and reintegration. In fact, evidence suggests that the rate at which released prisoners reoffend is quite high. This rate is much higher in those with mental illnesses. Incarceration rates have been on a rise in the United States over the past 20 years. With that rise, more prisoners are experiencing mental health diagnoses or are placed into the system with mental illness already present. The neglect and lack of proper treatment interferes with the inmates' opportunity to rehabilitate and properly reenter society. The research question of my study is what are the relationships between inmates' experiences in U.S. prisons and their mental health and reintegration into society? In this review, I will present what I have learned through thorough research about the prison system and explain the consequences of incarceration on inmates who have mental health diagnoses. I will explain the neglect of fundamental needs such as medication, medical screening, and intervention, and how these factors prevent inmates with mental health diagnoses from properly reintegrating into society. My review will cover the recidivism of the inmates with mental health diagnoses and propose solutions that may provide helpful insight in lowering the recidivism rates. *Funding provided by the YHC Undergraduate Research Program.*

Theatre

The Insectarium: A Play in One Act
Course Project in CRWT 3603: Creative Writing in Drama
Reading at URD

Kit Horsley
Faculty Mentor: Dr. Jen Julian

From left to right: Mason Nunes, Gina Dropp, Kit Horsely, Owen Malone, and Justin Spano

Henrik Ibsen once stated in regard to *A Doll's House*, "The wife in the play ends up by having no idea what is right and what is wrong; natural feelings on one hand and belief in authority on the other lead her to utter distraction." Inspired by the themes in *A Doll's House* and the behaviors of insects, I crafted my short one act play *The Insectarium*. In *The Insectarium*, the protagonist, Indie, works as an apprentice for an Insectarium. She is married to Joseph, a wealthy CEO, who cares for her every financial need. Indie's world is changed when she meets Jude, a young artist with a love for illustrating insects. The two start an affair, and tensions build. For this presentation, I would like to do a staged reading of my play in Dobbs Theatre featuring actors from the college.

Interdisciplinary Research

Researching and Publishing Personal Video Stories of World War II Service Members from the Pacific Theatre: Saipan, Guam, and Tinian.
Interdisciplinary Research: History, Communication Studies
Oral Presentation at URD

Austin Sever, Brianna Dalton, Johnathan Green, Jason Anderson, and Joseph Gilbert
Faculty Mentor: Dr. Richard Stafford

This research project and the subsequent video productions on USAAC service members stationed in or along the Pacific Ocean during World War II highlights the human contributions, knowledge, and personal talents of those flying and servicing B-29 Super Fortress aircraft. From 1944 to 1945, the service history of these men showcases a range of campaigns from Guam and the Northern Mariannas Islands in the vast Pacific Ocean, to the far east in India and China, to the Japanese mainland. These stories—from men as young eighteen years old—show the resilience and courage displayed by their selfless acts of valor. The expedient designing, manufacturing, and testing of the B-29 dramatically changed the outcome of World War II. This research project explores and acknowledges the efforts of these individuals, who were simultaneously doing their own research daily in a machine whose strengths and weaknesses were unknown. Following thorough research on each person, videos are produced dedicated to individual airmen in their memory for their families free of charge. Some of the servicemen featured include James Edward, Ed Lawson, Joe Tamplen, Malen Powell, and James Stafford. An extensive process leads to the production of these videos including script writing, voice-over recording, photography and film researching, and video editing. These videos are part of a continual effort to remember the Greatest Generation and the contributions they have made.

NOTE: Funding and other costs associated with this research project are paid for by the parent non-profit organization (500th Bomb Group NPO) and its media name: B29Central.org, Dick Stafford, Ph.D. is CEO/President in a non-paid, volunteer capacity. There is no money generated from the Memorial Video Series, families are provided the video for free, there is no corporate sponsor, no advertising, and no pay for clicks on Youtube.com or any other website or organization. This organization has a fifty-year history, including 17,000 members in the 1980's with substantial funds for projects to advance the stated goals. Students are provided a small paid internship/stipend for their time, just as other undergraduate research assistants and graduate assistants are in other college and university institutions.

United States Department of Agriculture Forest Service Blue Ridge Ranger District GIS Internship: Mapping Special Use Permits and an Immersive Experience

Internship Experience
Poster Presentation at URD

Taylor G. Thomas
Faculty Mentor: Dr. Marguerite Coyle

The Blue Ridge Ranger District (BRRD) within the Chattahoochee-Oconee National Forest (CONF) covers over 357,000 acres across six counties in northeast Georgia. The Forest Service's mission is to "sustain the health, diversity, and productivity of the nation's forests and grasslands to meet the needs of present and future generations." The number of Special Use Permits (SUPs) for activities such as bike races and forest visitors has recently increased. The amount of disturbance forest ecosystems can endure before adverse impacts result is limited (carrying capacity). The current approach to assessing SUP impacts does not account for the cumulative effects of multiple projects over time. One internship objective was to help map the SUPs using GIS (Geographic Information Systems) to help USFS staff in their daily work and assess carrying capacity. Another objective was to shadow and accompany various USFS employees in field and office activities to learn new skills and gain experience. To meet these objectives, I worked independently and with guidance from YHC instructors and USFS mentors, trained in GIS, learned to map a route and display the intricacies of GIS programming, troubleshot and navigated mapping challenges, worked with tabular data, developed an approach using existing routes to map SUPS. In addition, I went on several outings and volunteer days to learn more about the Blue Ridge Ranger District standards. I worked with a Trails and Wilderness Manager, a Timber Sales and Logistics Coordinator, a District Ranger, a District Drone Pilot, and a Volunteer Coordinator. *Thanks in part or entirely to the generous donation from The Nichols Family Environmental Internship.*

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