26th Annual Symposium on Undergraduate Scholarship

6th Annual Graduate Research Forum

Ask. Think. Lead.

Capital University Scholarship Symposium 2022

April 20, 2022

Capital University
Capital University is a community of intellectual and creative connections, where research is a powerful part of the educational experience.

Today’s celebration of our annual Symposium on Student Scholarship is a point of distinction for our University community and the engaged, experiential learning at the core of a Capital education.

Even throughout the pandemic, transformative learning continued in a new and adaptive format. Together with their faculty mentors, our students have been encouraged to explore important questions and seek opportunities and solutions for bettering our world. To open their minds. To expand their thought processes. To challenge boundaries and to challenge themselves.

Look through this program and see the names and accomplishments of 207 undergraduate and graduate students who chose to engage in immersive learning. These students are evolving as thinkers and doers. They are learning to advocate for their work, become better communicators, clarify career goals, and build confidence.

None of this would be possible without the faculty mentors who have shared their time, expertise, and commitment to creating a transformative learning experience for all Capital University students. Their synergy between teaching and scholarship exposes students to new ideas and new ways of thinking, which allows them to create knowledge that will impact the world.

I am grateful and honored to be a part of this university and these amazing students!

David L. Kaufman
President
It is my privilege to welcome you to one of the most significant events of the academic year, the annual Symposium on Undergraduate Scholarship and Graduate Research Forum. The symposium illustrates the unique learning that occurs at Capital University. Students employ the skills and knowledge they have acquired inside the classroom and beyond, to ask and answer their own questions, to apply their knowledge to the worlds of discovery and application, and to demonstrate their curiosity and competence across the natural and social sciences, the Humanities, and the performing arts. Capital University students truly are scholars.

For 25 years, our institution has paused to gather and celebrate our students’ art, performances, and research. This year’s symposium begins with the Marye J. ’54 and Richard A. ’51, H’84 Boyd Undergraduate Research Symposium Keynote address, which will feature a virtual keynote panel discussion: “Engaging Students Across the University.” Discover the meaningful and engaging work that undergraduate and graduate students do at Capital and learn how you can get involved. Panelists include student development professionals and faculty from education, nursing, Trinity Lutheran Seminary, and Capital University Law School. On the second day of the symposium, students present their independent research and creative products during the virtual poster sessions and virtual oral presentations.

The presentations you will see are the product of hours of student work and intense collaboration with staff and faculty mentors. This type of one-on-one interaction between student and mentor promotes a special type of learning – learning of the highest order that can only happen at a place like Capital.

Moreover, mentored student interactions are highly predictive of student persistence and success.

Faculty and staff, thank you for all you do to help our students achieve the type of transformative learning that leads and inspires students to perform at such high levels.

Students, congratulations on all of your hard work and success.

Sincerely,

Joey S. Fournier, Ph.D.
Provost
The James L. and E. Marlene Bruning Undergraduate Research Award

In May 2007, James and Marlene Bruning established an endowment to fund a student award to support undergraduate research and scholarly projects at Capital University. The intent of this award is to support high-quality undergraduate research and scholarly presentations at professional academic conferences.

Caitlyn Hoffman is honored to be graduating from Capital University with a degree in Middle Childhood Education, with concentrations in mathematics and language arts. She is passionate about ensuring that all children have the opportunity to learn in a safe, supportive environment. In her spare time, Caitlyn loves movies and YA fiction novels. Caitlyn won the Bruning Award for her project titled Learning in the Time of COVID-19: A Comparative Analysis of Adopted Educational Practices. Caitlyn was mentored by Professor Olga Shonia.

Diversity and Inclusion Research Award

As an expression of Capital University’s mission, the Diversity and Inclusion Research Award recognizes student scholarship that advances our understanding of issues of diversity and inclusion.

Bree Chambers is a fourth-year Art Therapy major with a minor in African/African American Studies. In addition to maintaining roles as Student Government president and an affiliate of multiple student organizations, she enjoys research that spans the intersection of the arts, health, education, and social justice. Following graduation, she looks forward to continuing her studies at Teachers College, Columbia University’s M.A. in Curriculum and Teaching program, in pursuit of a career in children’s media writing. Bree won the Diversity and Inclusion award for her project titled Making Others See: Picture Book Illustration and Early Childhood Racial Literacy. Bree was mentored by Professor Timberlee Harris.

The Marye J. ’54 and Richard A. ’51, H’84 Boyd Undergraduate Research Symposium

Keynote Address – Tuesday, April 19

“The Leader We Wish We All Had is You”
Amy Stearns Acton, M.D., M.P.H.

Dr. Amy Acton is a licensed physician in Preventive Medicine and Public Health with more than 30 years of experience in executive leadership, philanthropy, public service, teaching, and advocacy. She served as director of the Ohio Department of Health on behalf of Gov. Mike DeWine at the beginning of the COVID pandemic. Dr. Acton led Ohio's early pandemic response and gained national and international recognition for her daily press briefings with the governor. She will share her leadership philosophy, lessons she has learned, and her belief that we each have the ability to be the leader that is needed in our community.

About the cover artist

Grace Dingess is a third-year student in Studio Art with a minor in Emerging Media. With these two education paths, she plans to pursue a career in design after graduating with specific interests in graphic design, branding, and social media. At Capital, Grace has gained immense creative confidence and problem-solving abilities and has experienced tremendous personal growth and acquired professional skills for the future. She is passionate about creating and finds beauty in the idea that form and function are united as one.
Correlation between Pesticide Use in Homes and the Onset of Panic Disorders
Lydia Adejumo, Emily Hutcheson, Crystal Miner

The Effects of Physical Differences in Streams at Three Creeks Metropark on eDNA of the Common Mudpuppy (Necturus maculosus)
Sahra Ahmed, Nate Hayslett, Camden Martin

Novice Nurses Readiness to Practice during Acute Events (Graduate Research Forum)
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Correlation between Body Mass Index and Annual Household Income
Matt Antonios, Vincent Caplin, Mujahid Abdel-Ghani

Students’ Perceptions of Soft Skill Development in Capital University’s Curriculum
Caitlyn Arheit, Madison France, Morgan Dotlich

The Development of Soft Skills Through Signature Learning Courses
Lorna Bailey, Kaylee Hart

Public Speaking at Capital University
Clarence Blaisdell, Sophia Billerman, Will Fortune

Development of Oral Communication Skills in Required Undergraduate Courses
Madison Breyley, Alicia Alexander, Destiny Schultz

Student-Led Recruitment of Bonner Leader’s Impact on Capital Community (Bonner Leader Program)
Makayla Brown

Genetic Diversity of Declining Gray Fox (Urocyon cinereoargenteus)
Jessica Camp

Prevalence of Antibiotic-Resistant Bacteria in the Environment
Jiavonni Campbell, Crystal Miner

All the World’s a Stage: Paula Vogel’s Indecent & How Theatre Serves a Community
Audrey Cann

The Process of Event Planning and the Aspects That Go Into It
Bryant Caporale, Luciana Kanowsky, Evan Frund, Parker Hesler

Soft Skills in Criminology Courses
Alex Carlson, Savannah Nyang

Correlations Between Infant Birth Weight, Prenatal Supplements & Smoking During Pregnancy
Regina Cetnarowski, Ella Clipner, Bradan Mast

Food Insecurity in Columbus, Ohio
Bree Chambers, Chance Conaway, Markia Millin, Samantha New, Liz Owens

Correlation Between Polychlorinated Biphenyls and Reproductive Hormone Levels of Men and Women
Caroline Cramblit

Examining Interventions for Youth Experiencing Homelessness: A Community Based Research Project with Huckleberry House
Mickala Cross, Campbell McCoy, Randy Nungester, Aubrey Trissel, John Wells

Effectiveness of Capacity Building in Distinction Mentoring Program (Bonner Leader Program)
Rebecca Desta

The Effect of Capital University’s Curriculum on Employability Skills
Cameron Elliott, Ben Hatfield, E. J. Santana, Evan Bowen

Primmer Outdoor Learning Center: A Guide for Engaging the Community Through Trees
Kaela Folatko

Attitudes Toward Interpersonal Skill Development in Signature Learning Courses
Madeline Gautreaux, Camila Vasquez, Nathan Gerber, Haley Moore, Daniel McCormack

Problem-Solving Development in Exercise Science
Social Media Usage, Productivity, and Optimism
Kat Getz, Mackenzie Pindro, Allison Ellis, Binda Kafley, Austin Yanichko

Analysis of Antibiotic-Resistant Bacteria in Collected Soil Samples
Nathan Gibbs, Mikey Collins, Benjamin Smith

Analysis of the Relationship Between Alcohol Consumption and Occurrences of Heart Attacks
Lake Harris, Lina Hourani, Ved Kohli

American Butternut (Juglans cinerea) Reintroduction at the Primmer Outdoor Learning Center
Ashley Harvey, Elizabeth Mak, Jason McColl

Correlation between Per- and Polyfluoroalkyl Substance Levels in the Environment and Dental Caries
Ashley Harvey, Gabi Lee, Ella Wielinski

Does Frequency of Sound Affect the Taste and Flavor of Candy?
Addison Hasselbach

The Need for Pediatric LGBTQ Education in the Hospital Setting (Graduate Research Forum)
Christine Heckler

Caitlyn Hoffman

Soft Skills: How Common Social Skills Relate to Anxiety and Depression Symptoms
Shukri Hussain, Les Argueta, Liv Jordan

Behavioral Assessment of Captive Red Pandas (Ailurus fulgens)
Emily Hutcheson

Preventing HAPIs Make Nurses Happy: An Integrative Literature Review of Reduction Methods Surrounding HAPIs
Cameron Hyde

Injury Prevention for Athletes
Randy Ith, Joe Thompson, Justin Luke

Human Interaction with the Environment Increases Instances of Antibiotic Resistant Bacteria in Soil
Karen Kanke

Women in Athletic Training
Kaitlyn Kilbarger, Kirsten Knight, Reagan Willoughby
Understanding the Effects of Social Media Usage on Academics, Procrastination, and Connection
Summer King, Hannah Fields, Cassie Oiler

Impact of Foot Traffic on Antibiotic Resistance in Pristine Untouched Soils and Heavily Trafficked Soils
Kirsten Knight, Christina Mickelson, Elizabeth Van Gundy

How Social Determinants Play a Role in Oral Health Inequalities Leading to Decayed Teeth and Gum Disease
Paris Knipp, Emma Fain, Zak Ohler, Breanna Vance

Butternut (Juglans cinerea) and American Chestnut (Castanea dentata) Trees at the Primmer Outdoor Learning Center
Gabi Lee, Emili Pavlovska, Garrett Montgomery

Student Perceptions of Mask Wearing in Classes
Yaocheng Li

Social Media and Self-Esteem
Taegan Meredith, Alivia Cheney, Abigail Bradford, Saida Hassan

Eastern Gray Squirrels (Sciurus carolinensis) Prefer Foods with Lower Tannins and Easier Consumption
Crystal Miner

The Importance of Concussions
Cal Moskal, Tiara Mapp, Nick Reber

Building Foundation: The Relationships between Bonner Recruitment and Grassroots Work (Bonner Leader Program)
Selah Ndouta

Capacity Building: Making the Foundation (Bonner Leader Program)
Chiamaka Okafor

Oral Communication in Capital University’s Curriculum
Sakshi Patel, Hope Alexander, Markia Millin

Monitoring Bird Populations in Clintonville, Ohio
Maria Pickerill

Common Mudpuppies (Necturus maculosus) Less Common at Historical Algal Bloom Sites in Central Ohio
Faith Ritchie, Olivia Humes, Alexa Poling, Rachael Rice

The Effects of Oral Zinc Supplementation on Pressure Injuries
Sarah Rosato

The Effects of Big Five Personality Traits and User’s Password Usage and Security
Jillian Russell, Hope Hensley, Isabella Schunn, Mckenzie Taylor, Campbell McCoy

The Entangle Project
Paige Shafer

Interactions between Social Media and Police Investigations
Taylor Short, Aubrey Trissel, Mickala Cross, Cheyanne McNichols

Urban Birds Not Affected by Presence of Decoy Owl
Benjamin Smith

Influence of Persuasion Methods Through Online Spaces
Kayla Stein, Vince Pecore, Hannah Rose, Yaocheng Li, Aubree Dulin

Dangers of Heuristics on Social Media
Lindsey Stumpp, Cynthia Carroll, Kassi McNeal

Separation of Cosmetic Preservatives Using High Performance Liquid Chromatography
Marin Taylor

The Importance of LGBTQ+ Community Centers in Appalachia (Bonner Leader Program)
Danielle Thrasher

Soft Skills in College Students
Emily Toops, Malaysia Jackson, Aby Londono

Social Interactions and Behavioral Analysis of Western Lowland Gorillas (Gorilla gorilla)
Paige Wallace

The Effects of High Protein Intake on Cardiovascular Health: Is Your Food Killing Your Heart?
Lauren White, Garrott Kennedy, Alex Rosshirt

Bonner Capstone: Orientation Guide (Bonner Leader Program)
Morgan Wiley

Accuracy of Gluten-Free Food Labeling in Europe and the Middle East Compared to the United States
Daryna Zaitseva, Sara Fathala

Did Hands-on Activities and Real-life Applications Improve Third Graders’ Success when Learning to Measure Volume?
Tiffany Zuelzke

Oral Presentations
1:30 p.m.

Comparative Analysis of Direct to Consumer Genetic Testing Kits Amongst Identical Twins
Jiavonni Campbell, Nathan Gibbs, Christina Mickelson, Benjamin Smith

Media Project at Community Development For All People (Bonner Leader Program)
Jordan Banks

The Ugly Swan: Why “Magical” Movie Makeovers are Harmful to Female Agency
Lexi Anderson

Discrimination Against Transgender Inmates
Lindsey Stumpp

What Difference Does Instruction Make? Reading Comprehension
Allison Nunnally

The Intersection of Reasonableness and Cultural Competency in Law School: Applying 8 CFR § 208.31 for LGBTQ Latinx Individuals Seeking Asylum or Facing Removal (Graduate Research Forum)
Emily Asher

Making Others See: Picture Book Illustration and Early Childhood Racial Literacy
Bree Chambers
Effects of Buffered Chlorine Dioxide on the Oral Microbiome Found in Saliva
Karen Kanke
Battelle 115

The HITEC Foundation: A Social Media Plan
Liz Christian, Josh Conturo, Ellie Madison, Alyssa Burley, Deanna Fry
Battelle 126

Intersectionality and Ecofeminist Theory in Acercándonos a Gaia
Ella Brickman
Blackmore Library 110

The Comparative Homicide Rates Between the United States and Other Industrialized Nations
Angelina Booher
Blackmore Library 115

What Difference Does Instruction Make? Rhyming Pairs
Aly Rogers
Learning Center 102

The Characteristics of C-Suite Leaders: Leading in Times of Uncertainty
Elijah Danilecs
Learning Center 103

The Racial Inequity Comprehension Index: Reflections on Youth Racial Literacy
Bree Chambers
Learning Center 202

A Proper Plan Prevents Poor Performance: An Advocacy for Athletic Training
Kaleb Thompson
Battelle 115

Immersive Event Planning with Franklin County Recreation
Kaela Folatko, Maria Pickerill, Mya Menefield, Will Cooley, Danielle Thrasher, Jordan Banks, Austin Copley
Battelle 126

The Animated Woman
Olivia Fisher
Blackmore Library 110

How Bonner Students are Impacted by the Bonner Leader Program (Bonner Leader Program)
Cidney Jones-Lawson
Blackmore Library 115

Food as Kin in Robin Wall Kimmerer’s Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants
Maxwell Zawatsky
Learning Center 102

Convolution as Synthesis
Liam Knoll
Learning Center 103

Candace Parker’s TED Talk Analysis
Armani Dortch
Learning Center 202

Concussion Awareness
Tyauna Walker, Anna Root, Abby Gischel
Battelle 115

PR Immersion – HITEC Foundation Video Collaboration
Jordan Willis, Ashley Wireman, Anya Vanasdale, Travis Williams
Battelle 126

The Duality of Womanhood in “I Give You My Eyes”
Gabriella Schnaidt
Blackmore Library 110

Leaving My Mark on the Community (Bonner Leader Program)
Amelia Ruggles
Blackmore Library 115

A Feminist Analysis of St. Augustine’s Confessions
Ella Brickman
Learning Center 102

The Philosophical Implications of Alternate History
Matthew Longfellow
Learning Center 103

Thru-Hiker Culture on the Appalachian Trail
Maria Pickerill
Learning Center 202

Gaming & The Pick Me Girl Culture: An Evaluation of Video Games and Their Impacts on the Male Gaze
Kokila Varadarajan
Blackmore Library 110

Trapped and Vulnerable: An Analysis of the Protections Against Staff-on-Inmate Sexual Victimization in Federal Prisons
Aubrey Tillman
Blackmore Library 115

An Exploration of Adverse Childhood Experiences and the Cognition of Hope
Ethan Scheck
Learning Center 102

The Church and the Farm: Stories About the Importance of Farm Ministry
Jillian Russell
Learning Center 103

Ohio's Impact on the Election of the President and the Impact of Ohio Presidents on the Office of the Presidency
Cameron Wene
Learning Center 202
ABSTRACTS

Abstracts are listed in alphabetical order by the first author’s name.

Correlation between Pesticide Use in Homes and the Onset of Panic Disorders
Lydia Adejumo, Emily Hutcheson, Crystal Miner
Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Kerry Cheesman, Biological & Environmental Sciences

Pesticide use within homes has been shown to be a detrimental aspect in many areas of human health, as shown throughout previous reports; pesticides can have an extremely negative effect on the lives of humans. Previous reports focused on how pesticides can harm individual’s mental health with a special focus on depression and suicide. The current project is based on finding the correlation between professional and non-professional handling of pesticide use in homes and how it relates to mental health panic disorders. We used the National Health and Nutrition Examination Survey (NHANES) to find data from 1999 to 2004 on panic attacks and pesticide-use in homes. Correlations between the use of pesticides and panic attacks are currently being compared and analyzed. Analysis may lead to a better understanding of the issue, and suggest ways for people to use pesticides to reduce exposure that may result in panic attacks.

The Effects of Physical Differences in Streams at Three Creeks Metropark on eDNA of the Common Mudpuppy (Necturus maculosus)
Sahra Ahmed, Nate Hayslett, Camden Martin
Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Christine Anderson, Biological & Environmental Sciences

The Necturus maculosus or the common mudpuppy is a species used as an indicator of the health of aquatic ecosystems. The populations are decreasing due to their sensitivity to physical factors within their environment. This study focuses on the physical difference of water sources and investigates the impact it has on the presence of mudpuppy environmental DNA (eDNA). Through the process of filtration, DNA extraction, spectrophotometry, conventional PCR, and Real-Time PCR (qPCR), we tested for the presence of Mudpuppy eDNA at Three Creeks Metropark. The results of qPCR indicated the presence of mudpuppy DNA at all eight sites and both of the field controls. There were slight trends in increased presence of mudpuppy DNA as water depth and temperature increased. There was no significant association between pH and the amount of DNA detected. To avoid inaccuracies, a thorough protocol was followed, however this study, like any scientific research, was prone to contamination and other errors, and so the results are not completely reliable. Future work should focus on decreasing possible sources of contamination in the field and lab. Understanding how mudpuppies are affected by anthropogenic changes and alterations of natural environments may be promising in assessing the sustainability of ecosystems.

Novice Nurses Readiness to Practice during Acute Events (Graduate Research Forum)
Rebecca Anderson
Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Katheryn Fernandez, Nursing

Transition from student nurse to real-world novice nurse is known to be a challenging transition. Novice nurses struggle to apply theoretical learning and unprepared inexperienced nurses have increased risk for mistakes. Higher education institutions must investigate additional ways to decrease the theory to practice gap. This literature review examined newly licensed nurses’ preparation for acute situations. Throughout the articles reviewed, many themes emerged where novice nurses felt unprepared for acute events, subtle changes, failure to rescue, multiple patient load, caring for a patient ‘alone’ and quality of clinical experience. Identifying these themes from the literature is key to improving prelicensure nursing education. Duchscher’s (2008) Process of Becoming: The Stages of New Nursing Graduate Professional Role Transition Theory and Meleis’s Transitions Theory were used for the conceptual or theoretical framework. The literature review has highlighted areas for educational improvement to assist with preparation for one of the most challenging transitions in a nurse’s career. Colleges, universities, and healthcare institutions must continue to partner with students through novice nurses to ensure adequate next generation nurses to care for our population.

The Ugly Swan: Why “Magical” Movie Makeovers are Harmful to Female Agency
Lexi Anderson
Oral Presentation: Blackmore Library 110 // 1:30 PM
Mentor: Dina Lentsner, Conservatory of Music; Stephanie Saunders, Languages & Cultures

The recurrence of the “magical makeover” or “Beautiful All Along” trope throughout popular cinematic works has perpetuated the norm of women altering their appearances in order to be deemed desirable and acceptable. According to this premise, mundane objects such as a pair of glasses and a ponytail can retrait the innate beauty of a woman. This presentation argues that the “Beautiful All Along” trope, commonly embodied by mainstream cinema, is harmful to the modern woman’s self-image, confidence, and agency, as it perpetuates the false notion that women must change in order to be valued. In her book, Fantasies of Femininity: Reframing the Boundaries of Sex (1997), Ussher addresses the societal pressures on women’s appearances and behaviors. Through the application of Ussher’s theoretical framework, I examine popular films such as The Princess Diaries (2001), She’s All That (1999), The Devil Wears Prada (2006), and The DUFF (2015) to explore the purpose and subsequent damage of transformation scenes to female agency. This analysis confirms that the “Beautiful All Along” trope creates a significant detriment to female autonomy by a harmful indoctrination of the idealized body narrative.
**Correlation between Body Mass Index and Annual Household Income**

Matt Antonios, Vincent Caplin, Mujahid Abdel-Ghani

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM  
Mentor: Kerry Cheesman, Biological & Environmental Sciences

Annual household income in the U.S. is shown to affect individuals’ health. Body mass index (BMI) is one of the variables used to determine whether one is obese or not. According to the Center for Disease Control (CDC), BMI is an individual’s weight in kilograms divided by the square of height in meters. This study was conducted to see if there is a correlation between lower household income ($20,000) and BMI. The National Health and Nutrition Examination Survey (NHANES) is a study that has been used for statistics on health and demographics in the United States since 1999, including statistics on BMI and annual household income. The application SAS viewer was used to collect the data from NHANES and Excel was used to graph the data. The process of analysis and drawing conclusions is currently ongoing. The conclusions that we hope to draw may help with assessing community health issues and access to healthier options and in the end lead to a lower rate of obesity.

**Students’ Perceptions of Soft Skill Development in Capital University’s Curriculum**

Caitlyn Arheit, Madison France, Morgan Dotlich

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM  
Mentor: Andrea M. Karkowski, Psychology

Employability skills are non-technical, generic, core, or professional skills to enhance work readiness of college graduates (Jackson et al., 2013). Soft skills are a branch of employability skills that focus on emotional and social skills, rather than cognitive skills. Soft skills are important because they are highly sought out by employers over technical and job-specific skills. The purpose of this study was to measure students’ perceptions of their soft skill development through Capital University’s curriculum. We conducted a survey at Capital University assessing undergraduates’ perceptions of their soft skill development. We hypothesized that Capital’s curriculum contributes to the development of undergraduate soft skills. This study allowed us to analyze students’ perceptions of their ability to use soft skills that they developed through the classes that they have taken at Capital University. College graduates who have excellent soft skills are likely to be more successful in their careers.

**The Intersection of Reasonableness and Cultural Competency in Law School: Applying 8 CFR § 208.31 for LGBTQ Latinx Individuals Seeking Asylum or Facing Removal** (Graduate Research Forum)

Emily Asher

Oral Presentation: Learning Center 103 // 1:30 PM  
Mentor: Melinda Molina, Law

How people travel through Central America to reach the United States border is an important journey. Understanding why an individual would undertake such an endeavor is equally important when determining the reasonableness of any fear in returning to their home country. Awareness for an individual’s perspective requires developing cross-cultural competency. With a shift in the legal profession that intentionally addresses bias and discrimination in our justice system, law schools need to explore the meaning and importance of cultural competency. Through legal and public policy research, I developed a practical activity focused on being aware of another’s perspective. I discovered that multiple Central American countries have laws against LGBTQ individuals, and I found that the objective reasonableness standard provides an opportunity to discuss cultural differences. My research surveys an immigration law about reasonable fear determinations and highlights real-life LGBTQ Latinx individuals who faced deportation. The goal is to help students develop cross-cultural competency through critical thinking and class discussion. While offered through the lens of legal studies, this activity is adaptable for other educational settings. With the call for improving DEI, and with law schools now required to do so, my research provides a ready-made lesson to implement into the curriculum.

**The Development of Soft Skills Through Signature Learning Courses**

Lorna Bailey, Kaylee Hart

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM  
Mentor: Andrea M. Karkowski, Psychology

This project focused on the development of soft skills, which are non-technical skills that benefit post-college employability. These skills can be apprehended through effective teaching and practice within Signature Learning courses. The purpose of this project was to see how communication skills can encourage a stronger development of soft skills that can be directed towards post-graduate employability. We surveyed Capital University undergraduate students enrolled in psychology and social science courses. We expected to find that students would report that effective communication skill are critical for the development of soft skills. The importance of our work is to establish the understanding of good communication and how soft skills are relevant to employability, which can strengthen college graduates’ career success.
the important employability skill. Can help faculty develop methods for working with students to build anxiety related to public speaking changes across their time in college. Students and sophomores. Understanding how students’ comfort and percentage should be higher for juniors and seniors than for first year students. We hypothesized that first year students and sophomores would report more anxiety and less comfort with public speaking than juniors and seniors. We also expected that students would report approximately half of the classes that they take require oral presentations – this percentage should be higher for juniors and seniors than for first year students and sophomores. Understanding how students’ comfort and anxiety related to public speaking changes across their time in college can help faculty develop methods for working with students to build this important employability skill.

The focus of this project is the Youth Development Program at Community Development For All People (CD4AP). The project includes teaching social media lessons to students in the program via a promotional video created for the Youth Development Program. The goal was to expand the scholar’s knowledge on social media while also creating a video that improves retention and enrollment rates. Both the educational aspect and the video play an important role in the Youth Development department and the university community. Almost all students today use some form of media, and it is important for them to be aware of how that media works and the impact it can have. This project focused on the social issue of the lack of educational resources in certain communities. The promotional video shows the university community the opportunities there are to volunteer. The promotional video also could be shown to Capital University’s first-year Bonner Leader students to demonstrate the work that they can do with CD4AP.

Although violent crime rates in the United States have generally decreased since the 1990s, the issue of our heightened homicide rate compared to other industrialized nations remains problematic. According to the United Nations Office on Drugs and Crime, the United States’ homicide rate in 2018 was 5 per 100,000 people, compared to Japan’s rate of 0.3 and Australia’s rate of 0.9 (United Nations). I examine this issue through a sociological lens and consider such factors as economic inequality and increased gun ownership in the United States. I performed an integrative literature review, incorporating a comparative analysis of homicide rates and gun policies in the United States, Australia, and Japan, with a special focus on assault weapon usage in the United States. I concluded that implementing a stronger gun restriction policy in the United States could reap major benefits. Japan and Australia’s gun policies demonstrate that when enforced properly, gun restrictions can lead to thousands of lives saved and greater trust between police and citizens. My work contributes to the field of criminology by providing policy recommendations as well as educating the public on how our increased gun ownership is contributing to the problem.

Employability skills are those which are not job-specific, but rather are considered to be non-technical or basic, applicable to all industries (Cassidy, 2006). Within employability skills, the soft-skills category has been found to be the most important to employers when they consider hiring recent college graduates (Finch et al., 2013). Soft skills include oral communication skills. The purpose of our study was to evaluate students’ perceptions of oral communication skills being taught in Signature Learning courses. We conducted a survey of Capital University students regarding their opinions on the methods of skill development in their classes. We predicted that students would rate the courses that employed group discussions and peer questioning highest for effectiveness in skill development. This research examines how undergraduate students at all levels perceive their development in oral communication skills, which are a vital asset to employers. These skills and the self-recognition of them contribute to students’ abilities to enter the workforce following graduation.
A Feminist Analysis of St. Augustine’s Confessions

Ella Brickman
Oral Presentation: Learning Center 102 // 3:00 PM
Mentor: Liam O’Loughlin, English

St. Augustine’s Confessions is one of the most popular Christian books of all time, as well as one of the earliest examples of an autobiography. With over 1,500 years of scholarship existing on Augustine, it seems as though every opinion one could have on him has already been stated. He is lauded for being one of the founders of Western philosophy; he is praised for being one of the most important writers in Christianity and has been given the title “Doctor of the Church.” In the twentieth and twenty-first centuries, many feminist scholars have scorned Augustine for being “sexist” and “anti-feminist.” The traditional spectrum of scholarship on Augustine is incomplete. By using a combination of feminist literary theory and addressing matters of authorial intent and historical context, this presentation will give a new perspective of context and nuance to the study of Augustinian literature by analyzing Augustine’s relationships with women (particularly those with his mother and his mistresses) while also taking historical context and cultural differences into account.

Intersectionality and Ecofeminist Theory in Acercándonos a Gaia

Ella Brickman
Oral Presentation: Blackmore Library 110 // 2:00 PM
Mentor: Stephanie Saunders, Languages & Cultures

Acercándonos a Gaia, a collective put together by a group of female Costa Rican poets, explores themes of environmental issues and femininity and womanhood. Ecofeminism, along with the subsequent ecofeminist theory, is a growing sub-branch of feminist theory. It combines feminism with ecology in a way that enriches the literary tradition of both fields. The interior niches of ecofeminism are presented within Acercándonos a Gaia. Both the original Spanish poems and their translations reveal details of the individual authors’ relationships with their country, the Earth, and humanity. The poems are crucial to continuing the scholarly conversation on our understanding of femininity, Costa Rican culture, ecology, and how all these individual pieces fit together and interact internationally. Analyzing the poems through ecofeminist theory allows for the poems to be read through all these interpretive lenses at once. This paper addresses all of these areas as contributions to literature, and it furthers the understanding of the impact literature has on our worldview. The implications of this research push for further widespread translation of women-written poetry and further exploration of literature focusing on environmental issues, both of which are vital issues affecting the world today.

Student-Led Recruitment of Bonner Leader’s Impact on Capital Community (Bonner Leader Program)

Makayla Brown
Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Tristen Davis, Student & Community Engagement

Having college student-led programs has an immense impact on the community throughout the university as well as on the students themselves and the work they do. The more directly involved in a project people are the more they care. Through reviewing the best interview strategies, what it means to be a leader and the importance of understanding different cultures when interviewing, I applied findings from those articles to an upcoming interview process for the next set of interviews for Capital University’s Bonner Leader Program. I then used statistical analysis to compare the data of retention rates and overall Bonner student satisfaction within the program before and after the application of new interview skills. Having the upper-class Bonner students continue to be the leads during the interviews and selection process, the Bonner Leader Program will continue to thrive and make a positive difference in the communities that have direct relationships within the university’s community engagement staff and students.

Genetic Diversity of Declining Gray Fox (Urocyon cinereoargenteus)

Jessica Camp
Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Christine Anderson, Biological & Environmental Sciences

Gray fox (Urocyon cinereoargenteus) populations have been in severe decline over the past 20 years in Ohio. The goal of this study was to determine if Ohio gray foxes are currently in need of a management plan due to a possible inbreeding depression from a decline in population sizes. A total of 53 extracted gray fox DNA samples from 22 Ohio counties were obtained and amplified in multiplex reactions at six different microsatellite loci using Qiagen’s Multiplex PCR kit. The products were confirmed on 3% agarose gels and then genotyped in a DNA sequencer. Results to date showed that observed heterozygosity (HO) and expected heterozygosity (HE) were 0.723 and 0.734, respectively, and the level of inbreeding (FIS) was 0.051. These preliminary findings suggest that genetic variation is moderate to high and inbreeding is low. Future work includes screening additional loci, genotyping samples at those loci, and dividing samples into a priori subpopulations to better estimate diversity and inbreeding within the state. This work advances our understanding of the endangerment status of U. cinereoargenteus populations in Ohio and will help to determine if a management plan is necessary to conserve the species.
Comparative Analysis of Direct to Consumer Genetic Testing Kits Amongst Identical Twins

Jiavonni Campbell, Nathan Gibbs, Christina Mickelson, Benjamin Smith

Oral Presentation: Battelle 115 // 1:30 PM
Mentor: Kerry Cheesman, Biological & Environmental Sciences

The purpose of this study was to evaluate Direct to Consumer (DTC) genetic testing kits to determine inter-test reliability with identical twins. Based on prior research in this lab, which suggests that data between test providers can be highly variable, we hypothesized that twin data would follow this inter-test trend and exact ancestry percentages within a set of twins would be nearly identical. The DTC companies of interest included Ancestry.com, 23andMe, and MyHeritage. A total of 10 participants, 6 females and 4 males representing different ethnic groups, took the three independent DTC tests for ancestry lineage. Collection procedures specified by each company were used. Results for each participant are being compared across companies, with similarities and discrepancies in related categories being noted. Preliminary data support the hypothesis, with large discrepancies between companies but exact percentages between twins. Should variations in data within a set of twins be found, these would cast further doubt on the reliability of DTC testing methods for use in identifying ancestry.

Prevalence of Antibiotic-Resistant Bacteria in the Environment

Jiavonni Campbell, Crystal Miner

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Kerry Cheesman, Biological & Environmental Sciences

Antibiotics are primarily used to kill bacteria that cause infection. They are used in humans as well as in domesticated animals. Antibiotic resistance occurs when the bacteria in a body becomes resistant to the antibiotics taken. It was hypothesized that soil that is in an area with more human or animal traffic has more antibiotic resistance because soil that is around people or animals has been in more contact with antibiotic-resistant bacteria and/or the antibiotic itself. For this research, soil samples were taken from a large nature center in California, one from a high-impact trail and one from a low-impact area. Each sample was diluted and plated with either no tetracycline (an antibiotic), 3% tetracycline (tet), or 30% tet. There was no antibiotic resistance seen on the 30% tet plates for any samples. In the sample from a low-impact area 0.18% of bacteria showed resistance to 3% tet. The sample from a high impact trail showed 6.11% antibiotic resistance to the 3% tet. It is therefore concluded that humans and domesticated animals do have an impact on the environment by shedding antibiotic-resistant bacteria.

All the World’s a Stage: Paula Vogel’s Indecent & How Theatre Serves a Community

Audrey Cann

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Joshua Borths, Chad Payton, Conservatory of Music; Jens Hemmingsen, Chemistry; Stephanie Gray Wilson, Psychology

Theatre is an art form with the capacity to enact real change in our communities. Because of the variety of themes drama explores, it holds up a mirror to life, critiques proceedings within it, and holds space for human catharsis. This begs a responsibility for theatrical practitioners to tie-in community outreach to create a more enriching show, to harness the true power of this art form. In this project, I produced and directed Indecent. I created a directorial concept, cast actors, designed a rehearsal plan, found costumes, sets, lighting, and sound, all while organizing community outreach projects (talkbacks/service projects/campus engagement) complementary to the show’s themes of LGBTQ+ rights and the history of Yiddish theatre. I conducted interviews with audience members both directly after the performance and a half-semester check-in to measure how the themes resonated with them in the moment, and later, how they noticed changes appear in their lives since. Upon analyzing the results, it was obvious that Indecent caused a ripple effect, leading audiences to change their lives. Tangible changes occurred because of the powerful intersection between theatrical performance and community programming. This project demonstrates that theatre has the ability, and therefore responsibility, to benefit others.

The Process of Event Planning and the Aspects That Go Into It

Bryant Caporale, Luciana Kanowsky, Evan Frund, Parker Hesler

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Lois Foreman-Wernet, Media

The world that we live in involves events of many different sizes, occasions and locations. We are planning and executing a formal dance organized with Franklin County Recreation, a program of the Hattie Larlham Foundation. We are working with individuals who have intellectual and physical disabilities to create an experience that they will never forget. We have divided our class into three committees: decorations, food and beverage, and facility coordination and communication. After researching the organization, clients and the event planning process, we are full-fledged planning and managing the event, which culminates on April 1st. We are hosting the event in the Koinonia Center of Trinity Lutheran Seminary. During this project we are learning about the complicated logistics that go into planning a professional event. Our work carries a lot of importance to the individuals with intellectual and developmental disabilities. It has been a very touching experience working with them, but it also makes it even more important that we are thorough and diligent in all aspects of the planning process.
the importance of taking prenatal supplements, as well as the negative
birth weight. This research study is an attempt to educate women on
gestation and use of prenatal vitamins) and compared this to infant
2017-2020 to statistically analyze maternal health (smoking during
health and nutritional data of millions of Americans. The current
Health and Nutrition Examination Survey (NHANES) assesses the
during pregnancy, and the weight of the infant at birth. The National
and the weight of the infant at birth, along with mothers who smoked
between women who took prenatal vitamins during their pregnancy
more significant. This study was designed to examine correlations
maternal health in relation to the infant’s birth weight has become
important components within prenatal supplements. The use of
Prenatal vitamins are supplements that provide daily vitamins and
minerals to expecting mothers and help supply the growing baby
with essential nutrients. Folic acid, iron, and calcium are the most
important components within prenatal supplements. The use of
prenatal vitamins has become a common practice to benefit the overall
health of the fetus. Over the course of many decades, the study of
maternal health in relation to the infant’s birth weight has become
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health and nutritional data of millions of Americans. The current
study utilized the NHANES database during the years 2007-2008 and
2017-2020 to statistically analyze maternal health (smoking during
gestation and use of prenatal vitamins) and compared this to infant
birth weight. This research study is an attempt to educate women on
the importance of taking prenatal supplements, as well as the negative
effects that smoking during pregnancy can cause.

In his 1959 work “The Sociological Imagination”, C. Wright Mills
articulated both the defining characteristics of and bridges between
“personal troubles” and “public issues”. Students in SOC 360 Social
Problems in the fall of 2021 examined this principle through the
lens of hunger and food insecurity within the Franklin County region.
Through the ascertaining of a local understanding of this phenomenon
(“personal troubles”), we were then able to recognize the national
context of food insecurity (a “public issue”) and enact change within
the systems that uphold it. In partnership with First English Lutheran
Church, we collected over 200 non-perishable food, clothing and
personal hygiene products to substantiate the church’s Blessing
Box ministry. In addition to providing tangible supplies, this project
afforded us the opportunity to participate in community dialogues,
educate the campus network on hunger and food insecurity and gain
experience in the execution of donation drives. We received feedback
complimenting the project as an overwhelming success due to its
practical application of the principles of sociology.

Soft skills, defined as attributes that help an individual work well with
others in a variety of environments, have been increasingly recognized
as essential skills in the workplace, often exceeding the importance
of hard skills in the eyes of employers (Finch et al., 2013). In
conducting this research, we examined the extent of development of
five soft skills in six undergraduate courses of the criminology major
at Capital University, and gauged the confidence that the participants
have in their ability to use such soft skills. We distributed a 40 item
survey to undergraduate criminology students. The survey included
questions regarding their demographic information and questions
pertaining to each of the soft skills within the six criminology courses.
We hypothesized that soft skills are developed well within each of the
criminology courses, and that students, overall, are confident in their
use of soft skills. Such research is important in the improvement of the
content and syllabi of criminology courses, as this research provides
student perceptions of the development of soft skills in each of the
courses.

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birth weight. This research study is an attempt to educate women on
the importance of taking prenatal supplements, as well as the negative
effects that smoking during pregnancy can cause.

Correlations Between Infant Birth Weight, Prenatal Supplements & Smoking
During Pregnancy
Regina Cetnarowski, Ella Clipner, Bradan Mast
Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Kerry Cheesman, Biological & Environmental Sciences

Food Insecurity in Columbus, Ohio
Bree Chambers, Chance Conaway, Markia Millin, Samantha New, Liz Owens
Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Sherry Mong, Sociology & Criminology

Soft Skills in Criminology Courses
Alex Carlson, Savannah Nyang
Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Andrea M. Karkowski, Psychology

Correlations Between Infant Birth Weight, Prenatal Supplements & Smoking
During Pregnancy
Regina Cetnarowski, Ella Clipner, Bradan Mast
Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Kerry Cheesman, Biological & Environmental Sciences

Making Others See: Picture Book Illustration and Early Childhood Racial
Literacy
Bree Chambers
Oral Presentation: Learning Center 202 // 1:30 PM
Mentor: Timberlee Harris, Art

Children’s books are foundational to young children’s conceptual
development, providing both benefits for early literacy and immense
potential for growth in understanding of social issues. However, little
research exists regarding the role of illustrations, specifically, in the
promotion of this understanding. Through this project, I dissected how
children’s books employ focus, narrative, color, medium, symbolism,
size and scope, style and character to convey messages regarding the
themes of 1) diversity, 2) race and 3) racism. In doing so, I have not
only ascertained which semiotics are most effective in communicating
social messaging, but have reflected upon my own experiences of
racism through artmaking. I first completed a literature review of
sources relevant to the value of picture books, role of illustrations, and
childhood cognitive development in tandem with the aforementioned
themes. I surveyed 18 of the leading children’s books within these
themes for artistic commonalities. Finally, I wrote and illustrated
my own picture book, which will be outlined via a thesis paper and
presented at a student art show. Understandings resulting from
this project may aid in practitioner identification of racial trauma,
developing directives that address this, and increasing cultural
competency.
The Racial Inequity Comprehension Index: Reflections on Youth Racial Literacy

Bree Chambers

Oral Presentation: Learning Center 202 // 2:00 PM
Mentor: Katie Sasser, Psychology

Marked perhaps most notably by the murder of George Floyd in the spring of 2020, America has transitioned into a period of heightened racial awareness. While activists have been hard at work in the implementation of current policy change, educators, psychologists and children’s media developers have concerned themselves with the racial literacy of the next generation. Though research beginning in the early 1980s has suggested that infants through preschoolers possess racial awareness (and even some instances of bias), little dedicated study has emphasized their ability to identify racial injustice. Through a manual of demographic inventories, narrative tasks and projective drawing assessments, this testing battery seeks to answer the question “to what degree do children aged 4-14 understand racial inequity?” Inspired by the techniques and methods of education, psychology and art therapy, the assessment utilizes children’s preferred communication modalities for maximum effectiveness. While the manual has yet to undergo formal implementation, its scoring guidelines have been carefully curated to reflect behavioral, cognitive and effectual understanding amongst young children. With this information, individuals in fields of curriculum development or those regularly engaging with the effects of racial trauma on youth may more adequately develop need-meeting resources to address underlying deficits.

The HITEC Foundation: A Social Media Plan

Liz Christian, Josh Conturo, Ellie Madison, Alyssa Burley, Deanna Fry

Oral Presentation: Battelle 126 // 2:00 PM
Mentor: Lois Foreman-Wernet, Media

Students in Public Relations Immersion (PR 494) worked with local integrated communications agency, Fahlgren Mortine and HITEC, to create a social media plan and content ideas. The HITEC Foundation is a non-profit foundation that aims to close the gap in Hispanic leadership in the technology field through awarding scholarships, providing mentorship, and creating internship opportunities for involved students. The goals of the project were to: 1) expand awareness of the HITEC Foundation and the benefits it provides to college students and 2) to increase donations. The focus of the project was to aid the HITEC Foundation in consistently telling its story in a way that familiarizes and connects potential donors to its cause. Through research and creative thinking and design, this team mapped out a strategy to help the HITEC Foundation improve its Facebook and LinkedIn presence, while also re-introducing its Instagram account. We also provided HITEC with a content calendar with sample content and copy. This project not only benefits HITEC and Fahlgren Mortine, but it also allows us as students to gain real-world social media planning as part of a class.

Correlation Between Polychlorinated Biphenyls and Reproductive Hormone Levels of Men and Women

Caroline Cramblit

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Kerry Cheesman, Biological & Environmental Sciences

Polychlorinated biphenyls (PCBs) are synthetic organic chemicals used in various industrial and commercial settings. Over many decades PCBs have found their way into the environment and have been shown to cause severe health defects in both animals and humans—specifically reproductive health defects. This study was designed to examine correlations between PCBs and the reproductive health of both men and women. The National Health and Nutrition Examination Survey (NHANES) assesses the health and nutritional status of millions of Americans. It combines interviews and physical examinations of participants on a two-year cycle, beginning in 1999. The NHANES database is being used to statistically analyze the PCB levels in human blood samples over twenty years and compare them to reproductive hormone levels of both sexes. To date, this research has found no significant correlation between the levels of PCBs in the blood and the levels of sex hormones in both men and women. Most individuals have both detectable levels of PCBs and hormones in their blood, however the setup of NHANES inhibits tracking results for each individual. This ongoing study will provide a further understanding of the impacts of PCBs on public health and help design further research with the NHANES database.

Examining Interventions for Youth Experiencing Homelessness: A Community Based Research Project with Huckleberry House

Mickala Cross, Campbell McCoy, Randy Nungester, Aubrey Trissel, John Wells

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Stephanie Gray Wilson, Psychology

Youth homelessness is a complex and significant social problem affecting communities around the world, including Columbus, Ohio. Youth experiencing homelessness are at an increased risk for adverse mental and physical health outcomes. Experiencing homelessness as a young person has negative effects on housing stability, life-skills development, and engagement in risky behaviors into adulthood. Huckleberry House is non-profit organization in Columbus that supports youth experiencing homelessness and families in crisis. They provide a crisis center, counseling services, temporary and transitional housing, and outreach programs. The Advanced Psychology Practice class at Capital University has collaborated with Huckleberry House on a community based research project to understand and evaluate their clients’ outcomes. Huckleberry House clients complete an Outcomes Questionnaire to evaluate their mental health status and the Casey Life Skills assessment to determine their understanding of the behaviors and competencies needed to achieve their long-term goals. An analysis of the responses from these assessments illustrates the effectiveness of the Huckleberry House’s intervention programs. The results from this project will allow a better understanding of the challenges faced by homeless youth and the effectiveness of specific intervention programs.
Effectiveness of Capacity Building in Distinction Mentoring Program

Rebecca Desta

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Tristen Davis, Student & Community Engagement

The purpose of this project was to study how capacity building has positively impacted the Distinction Mentoring Program. The Distinction Mentoring Program is for 7th and 8th grader student at Mifflin Middle School. Research literature about capacity building was used to analyze the different forms of capacity building and how capacity building can be used in the Distinction Mentoring Program to create a better environment in the future for students. Through the Distinction Mentoring Program, students discover more about themselves and the world around them through interaction with mentors. These interactions create positive impact to help students reach their fullest potential and to experience self-discovery. Each week, the students and mentors meet for about 45 minutes in a classroom and explore various topics through group discussions, small mentoring groups, and hands-on activities. The students in the program have benefited from their experience. My results show that capacity building has had positive effects on the students’ experiences in the program. The mentoring program is evolving as it examines how capacity building can lead to positive change.

Candace Parker’s TED Talk Analysis

Armani Dortch

Oral Presentation: Learning Center 202 // 2:30 PM
Mentor: Sharon Croft, Communication

In November 2021, Candace Parker – NCAA champion, Olympic gold medalist, and WNBA champion – stepped onto the TEDWomen stage in Palm Springs, California to share her thoughts on how to go against society’s expectations to achieve your goals. In less than four months, Parker’s presentation, “How to Break Down Barriers and Not Accept Limits,” has received more than 1.1 million views. In Parker’s presentation, she says, “Barrier breaking is about not staying in your lane and not being something that the world expects you to be. It’s about not accepting limitations.” I conducted a rhetorical analysis of Parker’s TED Talk. Influenced by Christopher Tindale's 2011 article, “Character and Knowledge,” I examine Parker’s social character and the audience’s response to her presentation. In my project, I argue that the strong positive response that Parker’s TED Talk has received is linked to her ability to display, through verbal and nonverbal choices, her expertise in a way that leads the audience to feel more connected to her and her topic. Finally, in this project, I address how her different identities (African American, female, athlete, leader, mother) broaden her audience appeal and enhance her credibility, making her speech even more powerful.

The Effect of Capital University’s Curriculum on Employability Skills

Cameron Elliott, Ben Hatfield, E.J. Santana, Evan Bowen

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Andrea M. Karkowski, Psychology

Employability skills can be defined as skills that are needed and required in the workforce such as the ability to work and cooperate with others, problem solve independently, and succeed and grow in whatever field college graduates choose to specialize in. These skills are critical for social and economic development within workforces today. The purpose of our research project was to observe how Capital University's curriculum prepares students for their careers. Our online survey used a measure of employability skills by Rosenberg et al. (2011). We expected to find that Capital University's curriculum positively prepares students for their respective work field and for future employers. This research is important because college graduates need to be able to have the basic yet essential employability skills such as team skills, leadership skills and qualities, and learning skills and strategies.
Immersive Event Planning with Franklin County Recreation

Kaela Folatko, Maria Pickerill, Mya Menefield, Will Cooley, Danielle Thrasher, Jordan Banks, Austin Copley

Oral Presentation: Battelle 126 // 2:30 PM
Mentor: Lois Foreman-Wernet, Media

Immersive learning experiences require students to synthesize the knowledge they have learned in the classroom with real-world skills. At Capital University, Experiential Learning opportunities ensure students build employability skills for use after graduation. The goal of this project was to gain experience in the field of event planning through hands-on experience extending beyond the classroom. This project is a continuation of an over 5-year partnership with Franklin County Recreation through the planning and implementing of a spring formal dance. This organization provides high-quality programs for people with intellectual and developmental disabilities to facilitate community connection. Prior to the planning stage, extensive background research was compiled on the client organization, its members, and the event planning process. On Friday, April 1, 2022, this dance was held in Capital’s Koinonia Center. Components of this Fiesta Formal-themed event included strategic planning of catering, music, activities, entertainment, giveaways, and more. The classroom was divided into three committees to execute this event: decorations, food and beverages, and facility coordination and communication. Findings illustrate the importance of catering to your client’s unique needs when planning events. The contribution of this work is to gain the skills to implement immersive event plans through Capital University Experiential Learning.

Primmer Outdoor Learning Center: A Guide for Engaging the Community through Trees

Kaela Folatko

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Christine Anderson, Biological & Environmental Sciences

Educating and connecting future generations to the environment has been shown to lead to a greater potential positive impact on the environment. The goal of this research was to further develop Primmer Outdoor Learning Center as a means for engaging students and the community through the creation of Pine Trail and Walnut Trail tree signage and an expanded Primmer tree guide. This is also the first-ever data collection on Primmer trees, establishing baseline data for connecting future students to Primmer. Newly planted tree measurements consisted of new growth (cm), total height (m), and GPS coordinates. Mature tree measurements consisted of DBH (cm), crown spread (m), and GPS coordinates. Preliminary findings show that new growth in the trees planted last fall range from 4.0-11.0 cm and the DBH of mature trees range from 17.5-69.0 cm. Future directions of data collection will include annual lead growth and clinometer height measurements. The contribution of this work is to make Primmer a place for the public to engage through activities with newly planted trees, mature trees, and the Primmer tree guide since the Eastern Deciduous forest is the second most complex ecosystem in the world.

The Animated Woman

Olivia Fisher

Oral Presentation: Blackmore Library 110 // 2:30 PM
Mentor: Stephanie Saunders, Languages & Cultures; Dina Lentsner, Conservatory of Music

Animated movies and TV shows are a fundamental part of the twenty-first century childhood experience, holding a significant power in the messages they are conveying to children. Scholars almost unanimously agree that media negatively affects girls' self-image and perception of others’ bodies (Rowe). In recent years some shows have begun to push for more diversity in its characters with one such show being the critically acclaimed Netflix show She-Ra and the Princess of Power. The protagonist of the show, Adora, is a brave, competitive, and noble warrior and is true to her own values. Young girls are pressured by society to look and act a certain way but characters like Adora defies a stereotypical feminine girl narrative while still expressing her femininity. This project investigates the transformations of the female protagonists' images and embodiments in the show She-Ra and the Princess of Power as a manifestation of self-realization, which, ultimately, challenges societal concepts of body and gender, which, in turn, promotes diversity and inclusion.

Attitudes Toward Interpersonal Skill Development in Signature Learning Courses

Madeline Gautreaux, Camila Vasquez

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Andrea M. Karkowski, Psychology

Interpersonal skills are skills that enhance college graduates' work-readiness (Jackson et al., 2013). These skills fall into several categories such as oral communication, interpersonal communication, teamwork, and peer review. Interpersonal skills are imperative to the successful advancement of college graduates into the workforce. The purpose of our study was to understand the attitudes of students about developing interpersonal skills in Signature Learning courses. Capital University students were surveyed online. We hypothesized that students who are of higher rank (third, fourth, and fifth year students) had more positive attitudes towards the development of these skills in core classes opposed to those who are of lower rank (first and second year students). This study promotes understanding of students’ attitudes about the development of interpersonal skills as they progress through Signature Learning classes. This study also allows faculty to see what teaching techniques students believe are successful for the development of interpersonal skills.
Problem-Solving Development in Exercise Science
Nathan Gerber, Haley Moore, Daniel McCormack
Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Andrea M. Karkowski, Psychology

The employability skill of problem-solving is the act of creating solutions for situations. In Exercise Science, it is necessary for employees to have developed problem-solving skills because of the number of situations they will encounter in the field. Problem-solving ability allows student to use other competencies they possess like creativity or determination. We wanted to see how students pursuing an Exercise Science major were developing problem-solving skills. This study was conducted using an online survey, which contained a problem-solving inventory. We expected that upper-level students (juniors and seniors) would have learned more problem-solving skills and had sharper understandings of problem-solving than lower-level students (first year students and sophomores). Our work highlights whether classes sufficiently taught undergraduate students the skills necessary to excel in their work area.

Social Media Usage, Productivity, and Optimism
Kat Getz, Mackenzie Pindro, Allison Ellis, Binda Kafley, Austin Yanichko
Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Nicholas Van Horn, Psychology

It is unclear if Covid-19-related deficits in optimism have been detrimental to people's productivity. Previous research shows that social media has a negative effect on optimism. Furthermore, those with lower levels of optimism tend to have a lower productivity level than those with brighter outlooks on the future. Additional research suggests that limiting daily social media usage may lead to improved well-being, in turn increasing optimism. However, it is not clear which factors of social media use, such as time spent online versus the content itself, might account for this effect. For the present study, an online assessment measured participant optimism, productivity across a variety of metrics, and the extent of time spent on social media. We expect to find a negative correlation between optimism and productivity, in line with previous findings. Additionally, our results will help reveal the extent to which social media habits further modify this relationship. Understanding the role of these factors in student populations is critical to limiting negative future impacts. Our results will help current and future generations balance frequent technology use, as further advancements and adoptions in telecommunications services are expected to increase.

Analysis of Antibiotic-Resistant Bacteria in Collected Soil Samples
Nathan Gibbs, Mikey Collins, Benjamin Smith
Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Kerry Cheesman, Biological & Environmental Sciences

Antibiotics have various uses in different settings, from curing harmful bacterial infections in humans to increasing efficiency and yield of cattle used in commercial agriculture. Overuse of antibiotics in any setting can subsequently lead to the growth of antibiotic-resistant bacteria, causing problems for those who rely on antibiotics for medical or agricultural purposes. We aimed to study antibiotic resistance by investigating soil from the Chattahoochee Nature Center (GA), as part of the Prevalence of Antibiotic Resistance in the Environment (PARE) project. Two soil samples were obtained, one from a high-traffic foot path and one from a pristine environment away from the human pathways. Samples were diluted, then placed on McConkey agar plates containing up to 30 μg/ml of the antibiotic tetracycline. Of the bacteria grown from the high-traffic sample, 7.05% were resistant to tetracycline, whereas only 0.014% of the pristine soil bacteria were resistant. It appears that humans have an impact on spreading antibiotic-resistant bacteria into the environment around us.

Analysis of the Relationship between Alcohol Consumption and Occurrences of Heart Attacks
Lake Harris, Lina Hourani, Ved Kohli
Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Kerry Cheesman, Biological & Environmental Sciences

A heart attack, or myocardial infarction, occurs when the flow of oxygen-rich blood is decreased or stopped significantly, causing the myocardium to become damaged. The ingestion of alcohol is known to have deleterious effects on human health. This study examined the relationship between alcohol use and the occurrence of heart attacks. The National Health and Nutrition Examination Survey (NHANES) is a database used to access data and documentation in many different aspects of human health in the United States. NHANES surveys millions of individuals in order to provide statistically significant data. Currently, data from the years 2011-2018 are being analyzed to find any correlation between alcohol consumption and heart attacks. Findings from the NHANES data analysis may confirm a link between the heavy use of alcohol and the onset of heart attacks that affects thousands of Americans every year. This can help further educate the public on the possible health risks of alcohol use.
**American Butternut (Juglans cinerea) Reintroduction at the Primmer Outdoor Learning Center**

Ashley Harvey, Elizabeth Mak, Jason McColl

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM

Mentor: Christine Anderson, Jim Slyh, Biological & Environmental Sciences

American butternuts (*Juglans cinerea*) are a species of walnut trees that were used for thousands of years, but due to a harmful fungal disease called butternut canker, the butternut population has been declining across the country. Because of this, the goal was to study the reintroduction of these trees at Capital University’s Primmer Learning Center in Logan, OH. The purpose of this project was to test for the allelopathic effects that surrounding grass can have on the growth of the butternuts. For half of the trees, fencing was replaced with grass. For the other half of the trees, this did not occur. We conducted our project in fall 2021 by measuring trunk diameter, leaf growth, new growth, total height, infections, and the distance between the trunk and the grass, of each of the twelve butternuts. Contrary to what we predicted, our results showed there was actually more overall growth on the butternuts with grass than those without. Conducting research on this topic gives better feedback for how the butternuts should be cared for at Capital University’s field research site and also allows for future investigators to continue to monitor the trees for growth and signs of disease.

**Correlation between Per- and Poly-fluoroalkyl Substance Levels in the Environment and Dental Caries**

Ashley Harvey, Gabi Lee, Ella Wielinski

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM

Mentor: Kerry Cheesman, Biological & Environmental Sciences

Per- and poly-fluoroalkyl substances, commonly referred to as PFAS and PFOS, are long-lasting chemical compounds found in drinking water, food, packaging, and household items. These sources provide multiple pathways for PFAS/PFOS to be introduced to the human body. Prior research suggests the idea that PFAS/PFOS have an association with decreased bone mineral density, which may lead to increased susceptibility to dental caries. The structure of dentin is similar to the structure of bone since both odontoblasts and osteoblasts have similar mechanisms of bone formation and mineralization. The National Health and Nutrition Examination Survey (NHANES) was used to analyze the number of coronal caries found in areas of the mouth including molars, premolars, canines, and incisors. The data collected for coronal caries are being compared to the PFAS/PFOS levels in the environment to search for correlations from the years 2015-2018. The outcomes of this study will lead to an improved understanding of the association between oral health and PFAS/PFOS levels in the environment.

**Does Frequency of Sound Affect the Taste and Flavor of Candy?**

Addison Hasselbach

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM

Mentor: Kimberly Heym, Biological & Environmental Sciences

Hearing, vision, and touch are often studied separately. After all, why would taste have anything to do with the ability to hear? Charles Spence, from Oxford University, found that the low rumbling sound of an airplane reduces the ability to taste the sweetness of sugar. This study aims to expand the knowledge base by looking at the influence of two pitches: low and high, on both sweet and sour flavor modalities. Students were asked to rate the caramel flavor and sweetness of Werther’s® original candy OR the lemon flavor and sourness of Lemonhead® candy as they listened to two sound clips, one low pitched and one high pitched. Preliminary results suggest that 60% of subjects (n = 15) reported that pitch affected the sweetness of Wether’s candy while 73% reported a pitch effect on the intensity of the caramel flavor. Results were more impressive with the Lemonhead sour candy as 95% of subjects (n = 19) reported that pitch affected the sourness of the candy while 74% reported an effect of pitch on flavor intensity. This work is important to the airline industry, as they work to understand the influence of sound on the flavor of in-flight meals.

**The Need for Pediatric LGBTQ Education in the Hospital Setting** (Graduate Research Forum)

Christine Heckler

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM

Mentor: Katheryn Fernandez, Nursing

As a pediatric nurse, I have seen an increase in supportive patient signage on Nationwide Children’s campus and on social media platforms for the hospital. Yet, pediatric patients that identify as LGBTQ+ have higher rates of suicide, obesity, sexually transmitted diseases, homelessness, and substance abuse problems in comparison to their heterosexual and cis-gender counterparts (Walia et al., 2019). The purpose of this project is to bring to light the ongoing struggles this specific group of pediatric patients face when seeking healthcare. I conducted a literature review. Databases searched included PsycInfo, ProQuest, and CINHAL. The key words used to search the databases included: pediatrics, LGBTQ, and nursing education. Papers (n = 7) were selected for this project. The findings for this project revealed that in the LGBTQ+ pediatric population there are fears in the healthcare system: biases, stereotypes, discrimination, unknowledgeable providers, lack of empathy, etcetera. Healthcare workers should strive to use a patient’s identified gender expression and views on sexuality. Nurses should strive to provide safe, open, and optimal care to the LGBTQ+ pediatric patient.

Caitlyn Hoffman
Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Olga Shonia, Education

Due to the COVID-19 pandemic, schools around the state of Ohio and nationwide were forced to regroup to continue education of their students in online asynchronous or hybrid formats. This paradigm shift of the current zeitgeist has left many stakeholders (teachers, administrators, students, and their families) struggling to effectively adjust to this new reality, and emancipate traditional in-person practices and expectations (Ferdig et al., 2021). The purpose of this research case study is to examine challenges as well as opportunities of the hybrid/online models of learning that have become the alternative to traditional in-person delivery during the COVID-19 pandemic (March 2020 - present). To achieve that, we distributed a survey instrument grounded in the framework of the Ohio Standards for Teaching Profession (2005) to the identified key stakeholders (teachers for this portion of the study) in various school districts in central Ohio—rural, urban, and suburban. Participants from other states were recruited via snowball sampling (Stake, 2010; Mills, 2018). Qualitative analysis of the collected data was performed, identifying major themes, and analyzing best practices and pitfalls to avoid to make recommendations for educators, administrators and policy makers as they embrace and navigate new instructional models and new learning environments.

Soft Skills: How Common Social Skills Relate to Anxiety and Depression Symptoms

Shukri Hussain, Les Argueta, Liv Jordan
Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Andrea M. Karkowski, Psychology

Employability skills can be found and developed in many different ways. Employability skills include “listening skills, writing skills, academic performance” (Finch et al., 2012) and these should be developed through college classes. Unfortunately, college students are at high risk for depression and anxiety, which can inhibit learning. The purpose of this project was to find whether there is a relationship between employability skills and symptoms of anxiety and depression. We conducted our research by surveying students about their depression, anxiety, and employability skill development. We hypothesized that symptoms of anxiety and depression are inversely related to employability skill development. This work is important because it helps get a better view on what anxiety and depression are and how they might relate to college student skill development.

Behavioral Assessment of Captive Red Pandas (Ailurus fulgens)

Emily Hutcheson
Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Christine Anderson, Biological & Environmental Sciences

Red pandas (Ailurus fulgens) are an endangered species with most living within captivity. An observational study of the behavioral trends of Ailurus fulgens was conducted to understand the differences in behavior regarding location, sex, and age of the subjects. It was hypothesized that behaviors would differ in regards to location and age, but not sex. An ethogram depicting the common behaviors of this species was created in order to complete a scanning observational study of the captive specimens in three zoos with one female and one male in each. The different behaviors were categorized into eight different types: solitary, food related, social, off exhibit, locomotive, non-locomotive, keeper interaction, and visitor interaction. Throughout this study, sex did not affect the amount of time individuals spent performing certain behaviors, but location was significant. It was also found that older red pandas were more likely to engage in solitary and non-locomotive behaviors compared to younger ones. Red pandas exhibit high cub mortality in the wild, and so additional observational studies should be conducted in zoos to provide additional information to aid in the protection of those individuals left in the wild.

Preventing HAPIs Make Nurses Happy: An Integrative Literature Review of Reduction Methods Surrounding HAPIs

Cameron Hyde
Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Jean Scholz Mellum, Nursing

While adequate data exist concerning the treatment of hospital associated pressure injuries (HAPIs), few studies discuss prophylactic measures and the need for implementation into standard nursing care. The purpose of this work was to compare various types of pressure injury prevention methods and explain which method best supports a widespread evidence based quality improvement effort by nurses and support staff. Using an integrative literature review with evidence collected in the last 10 years and only from nursing databases, data were compiled from 7 studies to reveal different prevention methods successful in HAPI reduction. Prophylactic measures that were implemented were demonstrated as effective in preventing pressure injuries in hospitalized patients. The most effective measures were physical barriers, staff education, bi-hourly turning protocols, and heel elevation devices. Physical barrier prevention techniques were the most effective but costly preventative measure. There is a need for research to distinguish between physical barrier types that would reduce costs and improve outcomes for patients. Nurses and support staff should attend to HAPI reduction methods due to the potential for increased positive outcomes for patients and decreased overall healthcare costs to those affected.
In every sport there is an implied risk of injury which athletes must accept, and athletic trainers have the responsibility to ensure athletes are in their best competing condition. The purpose of our research was to decipher how to effectively reduce the chances of injury in athletic settings. Athletic injuries are preventable when there is a sports injury prevention program performed before the athletic sport begins and during the season. We’ve addressed the importance of this issue by going to West Jefferson High School and talking to all health classes to discuss effective ways to prevent injuries. We showed them statistics and collected research to make them aware of how important this issue is and we hope they discuss this information with other classmates and athletes. From the information gathered it is clear that implementing a sports injury prevention program is necessary to reduce risk of injury. Some interventions that should be considered are plyometrics, proprioceptive training, neuromuscular training, bracing, conditioning, and strength training. Overall, all athlete populations should adopt these ideals and implement them to reduce risk of injury.

**How Bonner Students are Impacted by the Bonner Leader Program** (Bonner Leader Program)

**Cidney Jones-Lawson**

Oral Presentation: Blackmore Library 115 // 2:30 PM
Mentor: Tristen Davis, Student & Community Engagement

The primary focus of my capstone project was to increase visibility for Capital University’s Bonner Leader Program. The Bonner Leader Program helps Bonner students connect their academic studies to work in the community. I created videos for the marketing team to post on the Bonner Leader Instagram. These videos focused on the experiences Bonner students have had in the program. The videos also highlighted what the Bonner students do at their sites so that incoming students can get a better understanding of what they will do as a Bonner student. My capstone project impacts the Capital University community by increasing Bonner student’s presence on campus showing students who are already on campus a better idea of what Bonner students do. A lot of people have heard of the Bonner Leader Program, but they do not understand what it is. By making a video that explains the Bonner Leader Program’s role on campus, students will know of another opportunity they can have on campus. This will increase people’s knowledge of social justice issues within the community, that the Bonner Leader Program directly reacts to.

**Injury Prevention for Athletes**

**Randy Ith, Joe Thompson, Justin Luke**

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Benjamin Pester, Health & Sport Sciences

The oral cavity is a niche that hosts hundreds of species of bacteria. Some bacteria are a normal part of a healthy body while others cause disease. Dental diseases, specifically tooth decay and periodontal disease, are prevalent in developed and undeveloped countries and are preventable. Regular removal of harmful bacteria is considered essential for good oral hygiene. Besides regular brushing and flossing, adding a bactericide mouthwash can help keep pathogenic bacteria from quickly repopulating the mouth. Buffered chlorine dioxide (ClO₂) mouthwash was previously shown to destroy three harmful species while having little to no effect on two commensal species on biofilms. The current study tested the effect of ClO₂ on bacteria in saliva. Five selective media were used to identify bacteria in saliva samples from ten randomly selected subjects. Growth was compared on plates with and without 1% ClO₂. Selected colonies were sub-cultured for DNA extraction and PCR was performed to sequence bacteria to confirm species. The results from this study will look to identify presence or absence of specific types of bacteria affected by 1% ClO₂ on bacteria in saliva.

**Effects of Buffered Chlorine Dioxide on the Oral Microbiome Found in Saliva**

**Karen Kanke**

Oral Presentation: Battelle 115 // 2:00 PM
Mentor: Jennifer Larson, John Mersfelder, Biological & Environmental Sciences

Overuse of antibiotics has caused certain species of bacteria to become resistant, causing major health concerns. It is important to identify the extent to which antibiotic resistance has spread and where it continues to spread. The database, Prevalence of Antibiotic Resistance in the Environment (PARE), contains information about antibiotic-resistant bacteria (ARB) in soil samples from different areas in the US. The current study tested for the presence of ARB in soil samples from three nature centers and compared the results with the PARE database. This study assessed whether areas with high human and pet traffic (primary trails) have more instances of ARB than areas with low or no traffic. For each nature center, 12 samples were taken – six from primary (high impact) trails and six from pristine (low impact) areas. The center in Georgia showed a statistically significant variation between high impact areas and low impact areas (p = 0.0275), indicating the spread of ARB. This nature center has loose soil with high moisture content. Samples from nature centers in Colorado and California, where soil on primary trails is dry and hard, were not statistically different. More work is needed to identify environmental factors that encourage the growth of ARB.
Understanding the Effects of Social Media Usage on Academics, Procrastination, and Connection

Summer King, Hannah Fields, Cassie Oiler

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Nicholas Van Horn, Psychology

Social media use has been shown to negatively interfere with students’ academic performance, such as not completing homework and attending class, as well as lowering overall academic confidence. However, social media may also act as a general source of distraction from everyday academic life, creating a sense of disconnectedness that might demotivate student effort. The purpose of this study is to understand the circumstance under which social media consumption influences academic procrastination and distraction, and how this psychological distance detrimentally disconnects students from their work, lowering academic performance. A survey will measure respondents’ social media usage habits, procrastination, and personal connectedness with their academic performance and efforts. We expect findings will show how social media use contributes to quality of academic performance, as influenced by its depersonalizing tendency. A key factor in student success is intrinsic motivation and a sense of purpose. The present study will provide valuable insights into how social media can undermine an individual’s personal connection to their work, leaving schoolwork to feel like an irritant interfering with their time online.

Impact of Foot Traffic on Antibiotic Resistance in Pristine Untouched Soils and Heavily Trafficked Soils

Kirsten Knight, Christina Mickelson, Elizabeth Van Gundy

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Kerry Cheesman, Biological & Environmental Sciences

Antibiotics such as tetracycline are useful in helping people avoid bacterial infection, but their overuse in both people and animals has led to an increase in antibiotic-resistant bacteria being shed into the environment. In this study the effects of human and pet foot traffic in a large nature center was evaluated to determine the incidence of tetracycline-resistant bacteria in the soil. Samples were taken from Chattahoochee Nature Center (GA), one sample from a high-traffic trail and one from an area where there should be no traffic. The samples were diluted up to 1/10^6; 200μL of the appropriate dilutions were placed on petri dishes with either no tetracycline, 3% tetracycline, or 30% tetracycline. The plates were incubated, colonies were counted, and the CFU per gram of soil was calculated. Results showed that tetracycline-resistant bacteria were absent (0.00%) in the low foot traffic soil and present (1.71% of total bacteria) in the soil collected on the high impact trail. It is reasonable to conclude that the presence of humans increases the amount of resistant bacteria in soil. This brings awareness to the impact antibiotic resistance has on our ecosystems, and that what we do as individuals makes a difference.

How Social Determinants Play a Role in Oral Health Inequalities Leading to Decayed Teeth and Gum Disease

Paris Knipp, Emma Fain, Zak Ohler, Breanna Vance

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Kerry Cheesman, Biological & Environmental Sciences

In the United States, poor oral health tends to serve as a symbol of social inequality. Poor oral health can also be linked to many other health conditions and diseases. Making oral healthcare easily accessible for individuals, regardless of social determinants, is essential. The National Health and Nutrition Examination Survey (NHANES) gathers data on thousands of participants through health interviews and physical examinations. Data collected are organized into a national database, making health data easily accessible for researchers. The present study utilized NHANES databases between the years of 2009 and 2018 to collect oral health and demographics data. Statistical analyses are being used to identify trends in demographic factors and potential impacts on oral health. Using NHANES, the goal is to view how social determinants affect the overall oral hygiene of individuals. This study aims to determine if there are any disparities in the outcomes of oral health. This would allow for further investigation into why there are these disparities and could open up the discussion on differences in health care quality between race, income, and gender. Addressing how to fix these disparities would help level the playing field of oral health.
**Convolution as Synthesis**

Liam Knoll

Oral Presentation: Learning Center 103 // 2:30 PM

Mentor: Chad Loughrige, Conservatory of Music

Convolution is a function derived from two given functions by integration which expresses how the shape of one is modified by the other. In audio this is used to apply the characteristics of one audio capture, an impulse response, to an input audio signal. Within audio this has been commonly used to recreate analog processes or complex acoustic properties of a space since 1985. The purpose of this project is to understand the process intuitively to be able to perform/synthesize two signals with the intention to be multiplied to create a planned output. This was done by isolating each variable within each audio signal, adjusting, observing, and evaluating their effects. The result is a formulated workflow to best use the technique for these goals, adding a new method with its own quirks to the many unique forms of synthesis and modulation.

**Butternut (Juglans cinerea) and American Chestnut (Castanea dentata) Trees at the Primmer Outdoor Learning Center**

Gabi Lee, Emili Pavlovska, Garrett Montgomery

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM

Mentor: Christine Anderson, Biological & Environmental Sciences

Butternut Trees (*Juglans cinerea*) have been affected by a disease called the butternut canker for over 50 years, and American Chestnuts (*Castanea dentata*) have been impacted by the chestnut blight disease for over 100 years. The goal of this research was to compare the growth while looking for any infections from the diseases of immature trees recently planted at the Primmer Outdoor Learning Center in Logan, Ohio. This was the first project to collect data on these newly planted trees at the site. In fall 2021, we measured overall height, growth, and diameter of 12 Butternuts and two American Chestnuts while looking for visible infections. Results showed no significant differences in growth and no evidence of any diseases for any of the two species of trees. In the future, we will monitor the growth and note any infections or resistance to the diseases, while hoping to plant more American Chestnuts at the study site. Other researchers are investigating the possibility of cross breeding resistant tree tissue with the two tree species. It is important to conserve and restore these native species to prevent their decline in deciduous forests across Ohio and USA.

**Student Perceptions of Mask Wearing in Classes**

Yaocheng Li

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM

Mentor: Andrea M. Karkowski, Psychology

For the last two years, mask-wearing has been commonly required by colleges and universities. Mask wearing has the potential to influence the ways faculty teach and how students learn in the classroom. The purpose of this study was to examine students’ perceptions of how mask wearing affects them in the classroom. This research also examined whether cognitive and personality variables are related to students’ responses to mask wearing. Students completed a survey containing the Adaptability Scale (Martin et al., 2013), the Student Learning Experiences Scale (Besser et al., 2020), and two other scales to measure students’ reaction to Face-to-face learning versus remote learning. In addition, I examined deidentified grade data comparing student grades prior to the COVID pandemic, during the first year of the pandemic, and during the second year of the pandemic. I hypothesized that students would report a decreased learning experience due to mask wearing. I also expected that grades during the first year of the pandemic would be lower than prior to the pandemic and in the second year of the pandemic. Understanding student response to mask wearing in learning environments can inform methods to limit negative effects that mask wearing might have on learning.

**The Philosophical Implications of Alternate History**

Matthew Longfellow

Oral Presentation: Learning Center 103 // 3:00 PM

Mentor: Andy Carlson, History

The 1960s in the United States was a time period where great hope led to great despair. The Philosophical Implications of Alternate History is a historical analysis of an alternate outcome of some of the tumultuous events of the decade, such as the assassinations of John F. Kennedy and Martin Luther King, Jr. This hypothetical timeline engages with three questions: (1) what might have happened, had these tragedies not occurred; (2) how these events contributed to our present political and cultural landscape; and (3) what we can learn by imagining alternate scenarios. My findings from analyzing these three questions resulted in Vigilant Conservation Theory (VCT), which argues that solving societal problems quickly ultimately leads to less consequences. In both historical and present-day examples, I conclude that when tangible issues aren’t dealt with, culture and society come into question as well. With VCT in mind, I posit that if we solve the tangible problems of today, we will diffuse cultural flashpoints and, in doing so, build consensus instead of division. I also observe and emphasize the importance of having a unifying national myth when envisioning our future and discuss whether an alternate history can serve this function.
More time is spent on social media than ever before. Face-altering filters on various platforms are increasingly accessible, as well as the ease of using outside editing applications to alter photos to meet stereotypical beauty standards. This study examined the relationship between time spent on social networking sites (SNS), the use of photo filters, and the combined effect on self-esteem. Specifically, Instagram, Snapchat, and TikTok were chosen due to their particular focus on photo and video sharing. An online survey was administered to measure frequency of SNS use, a variety of usage habits linked to negative mental health outcomes, and photo editing behaviors and observations. The Rosenberg Self-Esteem Scale was used to assess self-esteem levels among participants. Expected results are likely to implicate TikTok with the greatest impact on self-esteem due to its popularity. Further, accessibility and exposure to filters will likely be predictive of their use, along with a tendency to create unrealistic body image and self-esteem issues. The desire to conform to typical beauty standards is common, and this is facilitated by the use of photo editing and face-enhancing filters. With their heightened use, it is important to examine the effects these practices have on individuals’ mental health.

Eastern Gray Squirrels (Sciurus carolinensis) Prefer Foods with Lower Tannins and Easier Consumption

Crystal Miner

Previous research has focused on the food preferences and foraging behaviors of different species of squirrels. The goal of my project was to see if squirrels would choose the foods that saved them the most time to consume. This allows for more knowledge about the types of food that Eastern Gray Squirrels (Sciurus carolinensis) prefer. This project was conducted in Fall 2021 by placing corn and peanuts in front of a birdfeeder containing sunflower seeds on Willow Lane in Circleville, Ohio. Data were collected by making visual observations and recording what foods the squirrels chose during six sessions for a total of four hours and ten minutes. This study showed that squirrels tended to prefer sunflower seeds, which are low in tannins, over corn and peanuts. They also selected peanuts out of the shell more, compared to peanuts in the shell and corn. This suggests that they also prefer to eat the types of foods that take the least amount of time and energy to open and consume. This allows them to eat more in a shorter period of time. This study contributed to our knowledge of the types of foods that squirrels prefer in the months before winter.

The Importance of Concussions

Cal Moskal, Tiara Mapp, Nick Reber

Over the last 50 years there has been a significant increase in the prevalence of concussions, a mild traumatic brain injury, in collegiate sports. As of 2013, 6% of all soccer related injuries were concussions and have since continued to steadily increase due to the popularity of the sport. To increase the awareness for the diagnosis, treatment, and prevention of concussions we developed a presentation for the Capital University women’s soccer team. The presentation lasted 20 minutes, including 5 minutes for questions and discussion, and provided basic knowledge to help identify, prevent, and treat concussions. The athletes and coaches are now better educated on the importance of concussion prevention, diagnosis, signs, symptoms, and treatment to understand the severity of brain injuries and reduce the risk in the future. It is essential that athletes and coaches continue to learn and understand the severity of concussions to aim to decrease the number of mild traumatic brain injuries every year.

Building Foundation: The Relationships between Bonner Recruitment and Grassroots Work (Bonner Leader Program)

Selah Ndouta

Building a stronger foundation for Capital University’s Bonner Leader Program through recruitment has played an important role in how I navigate my experience and goals of grassroots organizing. Choosing the right individuals and coordinating the best ways to move the program forward to provide community engagement has been a long term goal of mine during my years as a Bonner student and during my summer of service. True community engagement is developing stronger relationships with the needs of those we serve through providing people who both serve and learn. Without consistency and sourcing people to help accomplish this goal, the relationship between Bonner students and the areas we work in becomes stunted. Through this capstone, I show the parallels among the mission of the program, the impact of the work we do at our sites through my Freedom School experience, and the connection of this work with grassroots organizing.
What Difference Does Instruction Make? Reading Comprehension
Allison Nunnally
Oral Presentation: Learning Center 102 // 1:30 PM
Mentor: Nisreen Daoud, Education

How can we define the ability to read and in what ways can we support struggling students? The purpose of this research was to investigate why a student with a learning disability on an Individualized Learning Plan, IEP, was having such a hard time with reading comprehension. Using an action research approach, explicit instruction was used to learn unknown vocabulary words in short stories to gain further knowledge about her ability to decode and recall. Repeated readings, along with explicit instruction, was utilized in order to support her abilities in order to assist in comprehension and recall of characters, settings, and plots. A pre and post story mapping exercise was used to collect data. The data were used to analyze why she was having such difficulty. The findings suggested that simply being able to decode words had no bearing on her comprehension skills. This was evident in her struggles to understand story plots, despite being able to easily decode words. As a result, being able to simply decode words is not the only skill needed for reading comprehension. This is important for schools and teachers to consider when teaching vocabulary and working on reading comprehension with all students.

Capacity Building: Making the Foundation (Bonner Leader Program)
Chiamaka Okafor
Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Tristen Davis, Student & Community Engagement

“Without a solid foundation you’ll have trouble creating anything of value.” This work serves to show the work being done by a team called the Bonner Recruitment Team (BRT) for the Capital University's Bonner Leader Program to grow in capacity. The purpose of capacity building in the Bonner Leader Program is to fill each cohort to its full potential. This will allow for the program to serve its community in the way that this national program was originally intended for. This will also create for the full needs of the community to be met. This was accomplished by action research starting from the March 2021 and shows the steps that were taken to engage with students and the process for selecting those who will serve in the program. This work is important because not only is it helping the community, but it is providing students with an opportunity to be leaders reaching out a helping hand. Focusing on setting the foundation will also help to promote the longevity of the Bonner Leader Program here at Capital University.

Oral Communication in Capital University’s Curriculum
Sakshi Patel, Hope Alexander, Markia Millin
Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Andrea M. Karkowski, Psychology

Employability skills are generic skills that improve a job applicant’s readiness for the workforce (Jackson et al., 2014). The purpose of this study was to determine how students felt about Capital University’s curriculum in developing their oral communication skills before the students transferred into the workforce. We surveyed Capital University students using Gray and Murray's (2011) oral communication scale. We hypothesized that Capital University's students did find the overall curriculum helpful in developing their oral communication skills and that the skills that students developed at Capital University aligned with previous research pertaining to oral skills for employability. This research shows how well Capital University students feel that the overall curriculum develops their oral communication skills to better equip them for the challenges of the workforce. This is important because oral communication is often the first skill that gets assessed by recruiters and employers during job interviews. These data can be used to assess how well Capital University students are prepared for the workforce.

Monitoring Bird Populations in Clintonville, Ohio
Maria Pickerill
Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Alan Stam, Biological & Environmental Sciences

Ohio has 433 native bird species, however, not all these birds stay in Ohio year-round. It is important to understand what species of birds are in Ohio at what points of the year. This project monitored bird species at four sites in Clintonville, OH to see whether the species in the area vary as the temperature increases. Birds in the area were inventoried to see whether the general population of birds increased from winter to spring. For the research, four sites in Clintonville were visited weekly with 15 minutes spent per site. Once at the site, temperature and weather conditions were recorded. Additionally, all birds seen and heard at each location were recorded. Over the eight-week period, a better understanding of the birds that live in Clintonville during the winter and spring was gained. 
In spring 2021, I participated in the Semester-A-Trail program at Emory and Henry College in Emory, Virginia. Modeled after study-abroad programs, this outdoor academic program offers students a chance to enrich their college experience by immersing themselves in a cultural environment beyond their home campuses. Semester-A-Trail provides college students the preparation and support that they need to hike the Appalachian Trail. For my research project about this experience, I employed an ethnographic method described in the writings of Carbaugh (2015). Specifically, I analyzed the communication patterns (rituals, rules, terminology) that hikers used to make sense of the experience. Concepts that I explored in my project include “hiker midnight,” “slackpacking,” “blazing,” “trail names,” and “trail magic.” I also had in my analysis interviews with other hikers, excerpts from my own online-blog, and photos from the trail. This project helped me better understand interpersonal and intercultural communication concepts such as community identity, culture shock, transformative rituals, and creating a “third culture.”

Global population decline of amphibians establishes a need for investigating the causes of such rapid decline including disease, toxicity, and habitat degradation. The common mudpuppy (Necturus maculosus) has permeable skin which makes it easy for water pollutants to get directly into their bloodstream. Our study focused on the possible effect of harmful algal blooms on the mudpuppies at two specific sites, Buckeye Lake and Alum Creek, in Central Ohio. Environmental DNA (eDNA) collection, filtering, and DNA extraction were conducted at four locations at each site in the Fall of 2021. Additionally, spectrophotometry, conventional PCR, agarose gel electrophoresis, and real-time qPCR were used to calculate the presence and quantity of mudpuppy eDNA in samples across sites. Results showed a higher concentration of mudpuppy eDNA at Alum Creek as opposed to Buckeye Lake, where historically, there have been high levels of algal blooms. The results should be taken with caution because of possible contamination, and future work should investigate ways to minimize contamination during filtering in the lab. These data may be used for further research at Buckeye Lake to determine the presence and quantity of the common mudpuppy population since amphibians are declining across the state.

Pressure injuries are a common occurrence in patients in acute care settings and long-term care settings. Many pressure injuries are hospital-acquired conditions that are monitored frequently under the quality and safety realm of clinical practice. Zinc is used not only as an external barrier to protect skin, but now many are using oral zinc to expedite wound healing. I searched the scholarly literature to identify whether this was beneficial to patients and the healing of their pressure injuries. The results show that oral zinc does not produce any statistically significant differences in wound healing. The purpose of this research was to reveal whether oral zinc was beneficial to expediting the wound healing in patients with pressure injuries. The literature used in this project included randomized controlled experiments/trials, systematic reviews, literature reviews and educational articles using online databases like Elsevier, EBSCOhost, and Medline. This project was done as a review of literature to find the most recent studied data concerning the effect of oral zinc on pressure injuries/wound healing. An individual experiment was not done by this author, online literary critique was the primary goal of this project. This is beneficial to healthcare and future research. The presentation will be poster-based.
**Leaving My Mark on the Community** (Bonner Leader Program)

**Amelia Ruggles**

Oral Presentation: Blackmore Library 115 // 3:00 PM  
Mentor: Tristen Davis, Student & Community Engagement

According to a research paper titled, The impact of disease on family members: A critical aspect of medical care, “One of the greatest burdens on family members of patients is the financial cost to the family. This can include treatment costs, transport to appointments, and the cost of hiring a caregiver.” The purpose of my capstone was to raise money to ease some of those financial burdens. At When Pigs Fly, a resale shop, I worked to create gift baskets with items that were donated and raffled them off. The funds that were raised, were donated to The Piggyback Foundation. The Piggyback Foundation helps maintain a sense of normalcy during times of serious illness. I conducted my capstone last semester and my basket raffles raised $1,159.40 for the Piggyback Foundation. This directly affected the Norwalk community because those funds went directly to the families. Additionally, through completing this capstone, I was able to bring in a new partnership between Capital University and The Piggyback Foundation. In conclusion, this capstone is significant and important because it highlights the ways in which an organization works to combat the financial barriers numerous families face at the expense of seeking adequate healthcare.

**The Church and the Farm: Stories About the Importance of Farm Ministry**

**Jillian Russell**

Oral Presentation: Learning Center 103 // 3:30 PM  
Mentor: Wray Bryant, Religion & Philosophy

Let me tell you a story. This story is about Farm Ministry and why it is important for churches and other organizations to implement Farm Ministry in their communities. Farm Ministry is defined as a church that uses agricultural practices to expand their worship community by finding creative ways to “do church.” This presentation explores these topics and also looks into the impact that storytelling has on Farm Ministry. In this presentation, one will be able to hear the stories from established Farm Ministries and be inspired to create their own. This thesis examines three stories from Farm Ministries in Northwestern Ohio. Farm Ministry takes the traditional idea of church and helps to make the experience more interactive and tactile because in the last decade the length of a person’s attention span has dropped significantly. Some church leaders are looking for unique and interactive ways to do ordinary things. Farm Ministry does just that. Farm Ministry has potential not only to draw in people who are looking for interactive ministries, but also to help to increase both church membership and agriculture membership. From this, one is able to inform the public on agricultural matters and apply a religious lens to this knowledge.

**The Effects of Big Five Personality Traits and User’s Password Usage and Security**

**Jillian Russell, Hope Hensley, Isabella Schunn, Mckenzie Taylor, Campbell McCoy**

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM  
Mentor: Nicholas Van Horn, Psychology

With the rise of online technology usage, individuals are faced with a growing need for password creation and management to secure their social media accounts, banking information, and more. When faced with increasing account credentials to manage, many individuals ease cognitive load by resorting to poor security practices, such as using the same password across multiple sites. Despite warnings from security researchers, some individuals avoid best practices in favor of convenience. The goal of the present study is to assess the relationship between bad password practices and the characteristics of those that engage in them. Specifically, this study examines personality types and password usage. Undergraduates completed personality and password habit assessments. A risk assessment was designed to measure participant security practices. Personality traits were used to evaluate the role that individual differences play in account management strategies. Results are expected to show that password creation and usage is related to specific personality types. Depending on where one falls on the Big 5 personality trait scale, one will be more aware of their password risk. The findings of this survey will provide more information regarding the impact of personality types on password usage and security.

**An Exploration of Adverse Childhood Experiences and the Cognition of Hope**

**Ethan Scheck**

Oral Presentation: Learning Center 102 // 3:30 PM  
Mentor: Stephanie Gray Wilson, Janette McDonald, Psychology

Abuse, neglect, and poverty are easily observed in the society we live in. These experiences can be measured by observing Adverse Childhood Experiences (ACEs) that commonly occur (Felitti et al., 1998). Individuals that have traumatic experiences can continue to exhibit the characteristics of hope (Saint Arnault & Sinko, 2019). Hope can be defined as a personal inner desire or knowing that there is the potential to improve the situation that someone is currently in or situations that may occur in the future (McDonald, 2007). Previous research has shown that having experienced a high number of ACEs is related to many factors that are seen in a difficult life. It was hypothesized that as a person experiences a greater number of ACEs, they will have a lower Hope Scale score. The relationship between these two factors was explored through a survey and interviews. It was found that an increase in ACEs was negatively correlated with the Hope Scale score ($r = -0.272$, $p = 0.000$). This finding supported the hypothesis in the study and elevates understanding of Adverse Childhood Experiences and hope theory by presenting the results of a mixed-method study to observe ACEs’ effects on the lives of individuals.
The Duality of Womanhood in “I Give You My Eyes”

Gabriella Schnaidt

Oral Presentation: Blackmore Library 110 // 3:00 PM
Mentor: Stephanie Saunders, Languages & Cultures

The film, I Give You My Eyes, directed by Spanish director Icíar Bollaín explores the dynamics within a marriage characterized by domestic violence and the reality of the scarcity of safe spaces in Spain. The film is rooted in cinematic feminist theory, showcasing a realistic image of females through examining the world of Pilar and her intertwining relationships. The movie illuminates two rival feminine ideologies that are in play within abusive marriages and the consequences of their duality, specifically the polarity between logic and emotion. The logical move being to get out of the abusive situation, whereas the emotive desire is to stay because of the love in the relationship. When Lenore Walker’s cycle of violence theory is applied to the narrative it is clear how the constant tango between the two perpetuate the three phases of the theory: tension building, violent episode, and remorse. Employing Walker’s theory to the film illuminates a manner to cope with the tension and a permanent way out of the cycle of violence. Consequently, passion is the identified avenue of liberty for women. One’s individual passion paves a way to escape societal pressure, forms a space for discernment, and creates lasting relationships.

The Entangle Project

Paige Shafer

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Sherry Mong, Sociology & Criminology

The Entangle Project is a joint effort between the First English Lutheran Church (FELC) and Capital University. The purpose of the project is to bring the communities of Columbus together to discuss consequential social topics. Such discussions are important because the study of social problems considers not only the objective “material and psychic suffering” caused by social problems, but also the subjective nature of these problems as they impact individuals’ lives (Eitzen et al., 2018). Through collaboration with our Community Partner, we reviewed literature and current news to construct questions on topics including voting rights, democracy, and poverty. The Entangle conversation was conducted through a dialogue via Zoom due to the Coronavirus Pandemic. The discussion allowed individuals of multiple backgrounds to find common ground and hear each other’s personal struggles and perspectives about social problems. Through this community-engaged project, individuals were exposed to the views of others and were able to share their own. It was our hope and goal that everyone leaving the discussion gained a better understanding of the social problems affecting our community.

Interactions between Social Media and Police Investigations

Taylor Short, Aubrey Trissel, Mickala Cross, Cheyanne McNichols

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Nicholas Van Horn, Psychology

With increased news exposure on social media platforms, there has been a rise in user-led involvement in police practices. Cases that are more popular on social media historically show trends of being solved faster than those that do not get the public’s attention. This study aims to analyze the relationship between missing persons cases and the prevalence of the investigation on social media. A questionnaire will be given to study social media usage and user behavior regarding police investigations. Pre-existing data provide information about whether high-profile police cases were solved and, if so, the pace at which they were. Additional existing data from Wikipedia and Google Trends will be used to gauge the popularity of cases on social media. These data are predicted to show that police cases with a higher rate of popularity on social media will be solved more quickly and with greater success than cases without. Results from this study can be used for a variety of reasons, including revealing the benefits or risks of incorporating social media in police practices and encouraging communities to launch self-led investigations in order to help solve cases more efficiently.

Urban Birds Not Affected by Presence of Decoy Owl

Benjamin Smith

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Christine Anderson, Biological & Environmental Sciences

Various methods of bird deterrents have been used to prevent birds from eating crops. Raptor decoys, specifically owls, are often seen on boat docks to keep gulls away, but the effect of decoys in a different environment has not been well studied. The rationale behind the study was to see if owl decoys are effective bird deterrents in urban environments. The hypothesis was that the presence of a decoy predator such as an owl would act as a deterrent to birds while feeding due to perceived predation risk. The study was conducted on November 10-12, 2021 on Capital University's campus located in Bexley, Ohio. Two feeders, one with bird seed mix and another with suet, were placed 2 meters apart and corn was scattered on site. After twelve 15-minute viewing sessions over three days, three Carolina chickadees (Poecile carolinensis) were observed in the presence of the owl decoy. No birds were observed during the observation periods where no owl decoy was present. Based on the data collected, the hypothesis was rejected, and future work with decoys should be discontinued or reevaluated to investigate more productive deterrents. This would allow urban spaces to better control nonnative species.
Influence of Persuasion Methods Through Online Spaces
Kayla Stein, Vince Pecore, Hannah Rose, Yaocheng Li, Aubree Dulin
Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Nicholas Van Horn, Psychology

With the rising spread and diversity of online informational resources, people are unknowingly exposed to a variety of persuasive tactics, such as guilt, shaming, framing effects, and group identification. It is unclear what kind of influence these factors have, especially when considering the modulatory effect of individuals' personal beliefs and prior knowledge. This study investigated how such characteristics of the messenger shape how viewers perceive information, and how their decisions are altered. Participants were shown one of four videos, constructed to contain an identical message presented with different persuasive tactics. Following the video presentation, an assessment was used to measure participants’ impression of both the topic and presenter, including their commitment to action, level of trust in the presenter, and level of intolerance to those that would hold dissimilar viewpoints. Results are expected to show participant reactions will be influenced systematically by the rhetorical approach of the messenger, even leading to contradictory stances dependent on how the information was presented. Due to the growing impact of online news, understanding the tactics used by sources can help to increase media literacy and act as a guard against blind trust in duplicitous sources, reducing further spread of misinformation.

Discrimination Against Transgender Inmates
Lindsey Stumpp
Oral Presentation: Blackmore Library 115 // 1:30 PM
Mentor: Sherry Mong, Sociology & Criminology

While transgender individuals are obtaining widespread recognition and increased acceptance in United States society, those who have been incarcerated are facing stigmatization and discrimination at heightened levels. While incarcerated, transgender people face improper housing, a lack of proper medical care and mental health treatment, unequal treatment by officers, and verbal, physical, and sexual assault by both guards and inmates. Approximately 16 percent of transgender inmates have been sexually assaulted by officers and approximately 24 percent have been sexually assaulted by other inmates (Redcay et al., 2020). I conducted a critical analysis of existing literature that documents the stigma and discrimination faced by this population. Implementation of existing policy is almost nonexistent and only used in specific circumstances. The Prison Rape Elimination Act (PREA) is one example of many policies created to prevent sexual assault – specifically for the lesbian, gay, bisexual, transgender, queer/questioning, and others (LGBTQ+) communities – but has failed due to lack of implementation. With 1 in 6 transgender adults in the United States having been sent to jail or prison (Trimble, 2018), the need for increased policy and implementation of existing policy is a crucial step to ensuring the rights of transgender inmates.

Dangers of Heuristics on Social Media
Lindsey Stumpp, Cynthia Carroll, Kassi McNeal
Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Nicholas Van Horn, Psychology

Fake news with political biases has become highly prevalent in today’s social media world and as a result, has led to dangers such as confusion and doubt of accurate information. Growing public awareness has placed a cognitive burden on individuals trying to make sense of the information landscape. The purpose of this study is to investigate whether awareness provides protection against one’s own political biases when assessing the validity of news online. To further investigate these ideas, a series of simulated news article blurbs were created surrounding several political topics. An accompanying survey was conducted to measure participants’ reading time, preference to continue reading and share the news articles, and their perceived factual accuracy. Results reveal that awareness alone is not enough to combat the effect of confirmation bias and heuristics. Further, participant reading time of article blurbs affects judgments regarding the legitimacy of articles on social media. The continued rise of false information online makes these results relevant for individuals and organizations alike and may reveal that awareness alone is not enough to combat misinformation online.

Separation of Cosmetic Preservatives Using High Performance Liquid Chromatography
Marin Taylor
Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: William Clark, Chemistry

Preservatives are common additives in water-containing products, such as cosmetics, that function in preventing bacterial and fungal growth, thus increasing shelf-life. Chemical species often used for this purpose are various alkyl parabens, benzyl alcohol, and benzoates. These compounds, particularly parabens, are advantageous for use in cosmetics because they are odorless, tasteless, and do not affect the color of products. The aim of this project was to adapt an existing UHPLC method for the separation and determination of cosmetic preservatives for use in HPLC. Three common cosmetic preservative standards were used to optimize this method, and then the method was applied to three cosmetic products containing those preservatives. The method was able to be optimized for HPLC, and allowed for the detection of preservatives in cosmetic products. The detection of these preservatives is important because they have been linked to variety of diseases and conditions.
The Importance of LGBTQ+ Community Centers in Appalachia (Bonner Leader Program)

Danielle Thrasher

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Tristen Davis, Student & Community Engagement

This project created a business model to establish an LGBTQ center in the Mid-Ohio Valley (MOV) region of Appalachian Ohio and West Virginia. The proposed LGBTQ Center of MOV will provide engagement within the local LGBTQ+ community and resources to LGBTQ+ populations in an area that lacks resources for these populations. Resources will include access to healthcare, education, and housing. The center will be a physical space for LGBTQ+ identifying individuals to be affirmed in who they are. The business model creates a process for incorporation, formation of the board of directors, and a comprehensive five-year plan for business administration. The estimated 186 LGBTQ+ community centers in the United States support the most vulnerable populations within the LGBTQ+ community, including youth, gender diverse individuals, and those living with HIV/AIDS. Through these safe spaces, the LGBTQ+ community has been able to prosper. However, only one LGBTQ+ center currently exists in West Virginia, which has the highest population of transgender individuals per capita. It is important for these individuals to have a space where they feel validated and uplifted. As the MOV is a generally ignored region of the country, the center aims to provide more spaces for these individuals.

A Proper Plan Prevents Poor Performance: An Advocation for Athletic Training

Kaleb Thompson

Oral Presentation: Battelle 115 // 2:30 PM
Mentor: Benjamin Pester, Health & Sport Sciences

In athletic training, the evaluation of an injury is categorized by four parts: subjective, objective, assessment, and plan (SOAP). The subjective is what the patient describes, while the objective is what the athletic trainer finds. The assessment is the athletic trainer’s estimation of what the injury is, and the plan is what the patient will do to make the injury better. The latter is the most important part; identifying an injury doesn’t matter if there is no plan to make it better. High school athletes do not have the education to treat themselves properly, nor do they have their own facilities to do so. One ankle sprain can cost $30,000 to treat comprehensively out of pocket, but an athletic trainer has the ability to treat that same injury, plus dozens of others, multiple times for just their salary and supply costs. Athletic trainers are essential to create plans for athletes’ injury management. This study included research on the financial impact of injuries, a summary of the knowledge required to treat injuries, an advocacy to local high school students as to why the plan is the most important part of the evaluation, and why athletic trainers are needed overall.

Trapped and Vulnerable: An Analysis of the Protections Against Staff-on-Inmate Sexual Victimization in Federal Prisons

Aubrey Tillman

Oral Presentation: Blackmore Library 115 // 3:30 PM
Mentor: Laura Kane, Sociology & Criminology

Sexual abuse of inmates is widely regarded as a part of prison culture. An institution where there are clearly identified official and unofficial power hierarchies provides the power imbalance necessary in an environment where this type of violence and abuse is widespread and underreported. Sexual violence allegations are largely handled internally which often leads to allegations being dismissed or swept under the rug (Stern, 2019). This presentation provides a critical analysis of the current literature regarding the efficacy of the Prison Rape Elimination Act of 2003 (PREA) to prevent the sexual victimization of inmates as perpetrated by correctional staff in federal prisons. It also addresses proposed remedies for the increasing issue of sexual victimization, primarily of female victims, in correctional facilities. I hypothesized that while PREA has the intention of protecting inmates from sexual victimization, the execution leaves gaps in the protections for prisoners. This presentation addresses a fundamental issue within the prison system and how it fails to protect the population under the care of the Federal Bureau of Prisons.

Soft Skills in College Students

Emily Toops, Malaysia Jackson, Aby Londono

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Andrea M. Karkowski, Psychology

Soft skills are one of the most important employability skills that help college graduates gain employment. Soft skills allow individuals to work well with others, apply knowledge to problem solve, and thrive in many different work environments. The purpose of this research is to determine how Signature Learning classes provide students with soft skills that later prepare them for job opportunities. We conducted a survey with questions based on how Signature Learning courses help students improve their soft-skills. We expected that when faculty use group work and projects then students improve their ability to listen, communicate effectively, and work well with peers. This study is important because soft skills are vital for success in a career. Having effective soft skills establishes wellness in the workforce and shapes college graduates to be more qualified for future job opportunities.
The video game industry, historically male-centric, often represents female characters with unrealistic bodies and beauty standards. This project examines the impact of idealized depictions of women's bodies on young women's self-image and their negotiation of the male gaze, by studying the behavior of these communities on social media and examining its relationship with the respective video games. I maintain that, with the popularization of gaming culture, the fantasy-focused depictions of women are being propagated, thus fostering damaging internalized expectations. While there is a prevalence of males in the gaming industry's workforce and the consumer body, due to the pandemic-related restrictions, the number of female gamers has risen to almost 50% (Engelberg, 2019). Despite this shift in consumer demographics, video games continue to focus on catering to the male audience, which is reflected in their depiction of female characters. For example, games such as Grand Theft Auto, Apex Legends, and Smite, include characters with physical features and body types conforming to the stereotypical male fantasy, thus engendering a more pressurized context for women-gamers. This research considers the relationship between gaming culture and the male gaze and argues for the importance of realistic and inclusive depictions of women in video games.

**Concussion Awareness**

**Tyana Walker, Anna Root, Abby Gischel**

Oral Presentation: Battelle 115 // 3:00 PM  
Mentor: Benjamin Pester, Health & Sport Sciences

As student athletes begin to advance in their athletic career their risk of injury increases. These risks increase due to the level of competition increasing from little league to high school. Concussions have grown to become an important topic when discussing life threatening injuries. Both the child and the parents may not be fully aware of the heightened risk of getting concussions as the child progresses through their career. A concussion can be detected and diagnosed from multiple types of injury. These different mechanisms create a need for athletes, especially those transitioning into higher contact sports, to be aware of what can cause a concussion and what signs and symptoms are associated with said injury. Our group traveled to St. Matthews school and taught the eight grade class about concussion awareness. With the use of different resources, this presentation conveyed the importance of understanding the mechanisms of injury and the symptoms associated with concussions, as well as ways to possibly prevent one from happening.

**Social Interactions and Behavioral Analysis of Western Lowland Gorillas (Gorilla gorilla gorilla)**

**Paige Wallace**

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM  
Mentor: Christine Anderson, Biological & Environmental Sciences

Western Lowland Gorillas (Gorilla gorilla gorilla) are a critically endangered subspecies of gorilla found in the rainforests of west Africa. Their populations have declined by 60% in the last few decades. Most research regarding wild gorilla species is conducted through indirect studies of their diet or nesting sites, so captive studies are important in guiding conservation efforts. For this research project I observed three individual gorillas from one troop at the Columbus Zoo and Aquarium. The individuals I focused on were mother, Cassie, father, Ktembe, and their 18 month old Jamani. I conducted focal ethograms on each, marking their observed behavior(s) every 30 seconds within a half an hour period. This was repeated another day at around the same time for a grand total of 180 minutes for each of the three subjects. Through this study I found that the adult gorillas spent the majority of their time eating, and Jamani, the infant gorilla, spent most of her time playing with toys or other gorillas. Coupled with other studies of captive and wild Western Lowland Gorillas, these findings could be used to better understand how this species budgets their time, and differences in behavior between infant and adult individuals.

**Ohio's Impact on the Election of the President and the Impact of Ohio Presidents on the Office of the Presidency**

**Cameron Wene**

Oral Presentation: Learning Center 202 // 3:30 PM  
Mentor: Suzanne Marilley, Political Science

The presidency is affected greatly by the individual US states through both the electoral power of the state and the candidates a state has sent to the office. Ohio has held significant influence in both of these categories. The state's population size throughout its history has allowed it to hold a large number of electoral votes and the state has been one of the strongest predictors of the next president. Its geographical and political make-up allows it to remain a swing state ensuring that it is not reliably one party, further increasing its influence. Its geography reflects various regions of the nation producing a wide and diversified spectrum of political beliefs. Ohio's presidents have shaped the office into what it is today through their various actions and behaviors. By evaluating these presidents, political scientists can see how the position has evolved over time specifically in terms of civil service, presidential succession, and the nation's place on the world stage amongst other additions. By examining the presidency through a state lens, political scientists are able to further dissect how other states can become electoral powers as well as how certain states have shaped national politics and the American political system.
The Effects of High Protein Intake on Cardiovascular Health: Is Your Food Killing Your Heart?

Lauren White, Garrott Kennedy, Alex Rosshint

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Kerry Cheesman, Biological & Environmental Sciences

Protein is essential for a well-rounded and balanced diet. High protein diets have become more prevalent in recent years to improve muscle growth and lose body fat. In this study, the intake of different levels of protein and the effects on cholesterol levels are being studied. Cholesterol is a lipid used to produce hormones in body cells. High cholesterol can be detrimental to health as it may increase the risk for heart-related issues such as heart attack and stroke. This study looks at a correlation between high cholesterol levels and high protein intake. Data were collected from the National Health and Nutrition Examination Survey (NHANES). A total of 57,801 participants were surveyed over a span of 10 years for their daily protein intake amounts and cholesterol levels. These data are being analyzed to determine any correlation between protein levels and levels of cholesterol. This is important for those who eat high protein diets such as athletes trying to build muscle or those trying to lose weight who may need to weigh its effects. This study may show whether or not this type of diet is a detriment to heart health as protein intake increases.

Bonner Capstone: Orientation Guide (Bonner Leader Program)

Morgan Wiley

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Tristen Davis, Student & Community Engagement

The focus of my capstone was to build a foundation for future Capital University Bonner Leader Program interns. Bonner student interns have external and internal roles within the program and are a primary contact for the program. The Bonner Leader Program class of 2022 is the first to graduate from the program and this project helps create a base for the future of the program. I developed the Bonner student orientation and kept in mind event logistics, program requirements, sessions and experience with community partners, and team building within the cohort and with students currently in the program. I documented my work and the resources I used to help the next intern smoothly transition into further planning. Bonner students come from many different places so during initial orientation meetings we educate students about privilege and bias. Some students may have privileges and biases they are not aware of, so it is important to discuss and challenge these privileges and biases before working with the community. I included members of the Capital University community to help orient the new Bonner students, which helps to connect the new students to professors and can provide a foundation for content students will learn within their first year.

PR Immersion- HITEC Foundation Video Collaboration

Jordan Willis, Ashley Wireman, Anya Vanasdale, Travis Williams

Oral Presentation: Battelle 126 // 3:00 PM
Mentor: Lois Foreman-Wernet, Media

This project demonstrated the importance of collaboration across different disciplines in the communications field. The purpose of this project was to give students experience working with a client in a creative medium. In partnership with the integrated communications agency Fahlgren Mortine and the non-profit HITEC Global, students in the class worked in two groups, one to manage social media and one to create videos to populate these pages. The video group conducted research into the mission and practices of the HITEC Foundation and combined this information with interviews from people impacted by aid from the HITEC Foundation to make a series of videos urging the public to donate to HITEC. These videos featured an emotional appeal to support the HITEC Foundation in its mission. This project reinforced video as a legitimate and strategic tool in the world of PR and marketing, and it is an example of how video and other media are becoming increasingly useful and important in both of those fields. The experience overall benefitted both the non-profit organization and the students.

Accuracy of Gluten-Free Food Labeling in Europe and the Middle East Compared to the United States

Daryna Zaitseva, Sara Fathala

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Kerry Cheesman, Biological & Environmental Sciences

For those with gluten intolerance, especially with Celiac disease, avoid gluten cross-contamination and must be skeptical of the gluten levels in food products advertised as “gluten-free”. Previous work in this lab has shown that roughly 32% of labeled “gluten-free” products in the United States (n = 223) have more gluten in them than is allowed by law (68% were properly labeled). The current study was designed to investigate the reliability of “gluten-free” food labels in the international consumer marketplace and to compare the accuracy of these labels with those previously reported for the United States. A total of 74 samples labeled “gluten-free” were obtained from grocery stores in Europe and the Middle East. A Nima Gluten Sensor was used to determine if gluten content was 20ppm, the maximum allowed by the European Commission and local Middle Eastern produce, for a total of 74 samples labeled “gluten-free”. Of the 74 samples tested, 68 (92%) were confirmed to be “gluten-free” (&lt;20ppm). When European and Middle Eastern samples are compared to those from the United States, it appears that the food from these parts of the world are more accurately labeled than those from the United States.
Food as Kin in Robin Wall Kimmerer's Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants

Maxwell Zawatsky

Oral Presentation: Learning Center 102 // 2:30 PM
Mentor: Liam O'Loughlin, English

Using the concept of environmental justice from ecocriticism, this presentation will argue that Robin Wall Kimmerer's Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants urges kinful interactions between human beings and plants—particularly those used for food. This argument expands Robert Dale Parker's definition of environmental justice, which focuses on human power imbalances on racial, economic, and national lines, to include justice along the human/non-human binary and encourages respectful and reciprocal relations between human beings and food used for consumption. After distinguishing between these different environmental justice frameworks, I closely analyze three examples of human/non-human interaction from Kimmerer's non-fictional text, a hybrid text that combines Kimmerer's training in the sciences and her extensive knowledge of Indigenous practices. My analysis—combining close textual analysis with historicization—details how reciprocal interactions with food suggest more ethical approaches to the land. This ethical approach, while grounded in small moments from an individual's memoir, poses outsized consequences: a non-commodified relationship to nature challenges our current environmental practices that are slowly killing the earth and all those inhabiting it.

Did Hands-on Activities and Real-life Applications Improve Third Graders' Success when Learning to Measure Volume?

Tiffany Zuelzke

Poster Presentation: Capital Center Fieldhouse // 11:30 AM - 1:00 PM
Mentor: Hoyun Cho, Nisreen Daoud, Carmen Dixon, Education

The purpose of this research was to examine how 3rd graders learned measurement using hands-on activities and real-life applications. Many researchers in Mathematics Education showed hands-on teaching methods and student-centered activities improved students' success in a learning environment. The research question was did hands-on activities and real-life applications improve third graders' success when learning to measure volume? In a diverse third-grade classroom located in Groveport, Ohio, a unit measuring the mass and volume of liquids was taught using hands-on materials like scales and beakers in the classroom, and students explored mass and volume of liquid through math centers. This study involved 19 students who knew little to nothing about measurement. The difference between similar pre-and post-assessment scores revealed that students learned information and skills involving measurement through hands-on activities and centers. The class average from the pre-assessment to the post-assessment improved by 54%. The students were also engaged in activities and motivated to learn through hands-on or real-life experiences based on the smiles from the students throughout this measurement unit. It is important as a teacher to improve students’ learning, and success every single day, which means sometimes teaching in untraditional ways to meet the needs of all the students.
The following Capital University students were accepted to present their research at the 36th National Conference on Undergraduate Research to be held virtually, April 4-8, 2022.

**Caroline Cramblit**
Mentor: Kerry Cheesman
*Correlation between Polychlorinated Biphenyls and Reproductive Hormone Levels in Men and Women*

**Elijah Danilecs**
Mentor: Keirsten Moore
*The True Characteristics of C-Suite Leaders: Leading in Times of Uncertainty*

**Sara Fathala, Daryna Zaitseva**
Mentor: Kerry Cheesman
*The Reliability of “Gluten-free” Labels Found on International Food Products in Comparison to Samples from the United States*

**Caitlyn Hoffman**
Mentor: Olga Shonia

**Karen Kanke**
Mentor: Kerry Cheesman
*Human Interaction with the Environment increases instances of Antibiotic Resistant bacteria in Soil*

**Delanie Nahikian**
Mentor: Laura Boser-Kane
*Undeserving of Protection: Stigma as a Factor in the Victimization of Female Sex Workers*

**Gabriella Schnaidt**
Mentor: Stephanie Saunders
*The Duality of Womanhood in “I Give You My Eyes”*

**Madeline Woodruff**
Mentor: Jon Stadler
*Mathematics of Juggling with Bounded Heights*

**Maxwell Zawatsky**
Mentor: Liam O’Loughlin
*Food as Kin in Robin Wall Kimmerer’s Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teaching of Plants*
Cora Ams  
Mentor: Andrew Ryker  
Qualified for National NATS Semi-Final Vocal Competition  
Performance at Great Lakes Region NATS Vocal Competition, Honorable Mention (Lower Musical Theatre Treble)

Sasha Antonyuk  
Mentor: Chad Payton  
Performance at Ohio NATS Vocal Competition, Honorable Mention (First Year Classical Treble)

Audrey Cann  
Mentor: Chad Payton  
Performance in Tosca Chorus, Opera Columbus

Coshel Caudill  
Mentor: Andrew Ryker  
Qualified for National NATS Semi-Final Vocal Competition  
Performance at Great Lakes Region NATS Vocal Competition, Third Place (First Year Classical TBB)

Treston Haines  
Mentor: Dione Bennett  
Qualified for National NATS Semi-Final Vocal Competition in both categories  
Performance at Great Lakes Region NATS Vocal Competition, First Place (Lower Musical Theatre TBB)  
Performance at Great Lakes Region NATS Vocal Competition, Honorable Mention (Second Year Classical TBB)  
Performance at Ohio NATS Vocal Competition, Honorable Mention (First/Second Year Classical TBB)

Jace Nguyen  
Mentor: Chad Payton  
Performance at Ohio NATS Vocal Competition, First Place (Third/Fourth/Fifth Year Classical TBB)  
Performance on Ohio NATS Masterclass with Dr. Maryann Kyle  
Performance at Carnegie Hall with Capital University Symphonic Winds (Soloist), New York City

Siri Nilsen  
Mentor: Chad Payton  
Performance at Ohio NATS Vocal Competition, Second Place (Fourth/Fifth Year Classical Treble)  
Performance on Ohio NATS Masterclass with Frederica von Stade  
Performance at Carnegie Hall with Capital University Symphonic Winds (Soloist), New York City

Samuel Owens  
Mentor: Lynn Roseberry  
Performance at Ohio NATS Vocal Competition, Third Place (First/Second Year Classical TBB)

Baylee Richardson  
Mentor: Jackie Barlow-Ware  
Qualified for National NATS Semi-Final Vocal Competition  
Performance at Great Lakes Region NATS Vocal Competition, Second Place (First Year Musical Theatre Treble)

Olivia Roberts  
Mentor: Chad Payton  
Performance at Ohio NATS Vocal Competition, Honorable Mention (Second Year Classical Treble)

Diana Marie Rose  
Mentor: Andrew Ryker  
Performance at Ohio NATS Vocal Competition, Third Place (Second Year Classical Treble)

Henry Seifried  
Mentor: Andrew Ryker  
Qualified for National NATS Semi-Final Vocal Competition  
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Performance at Ohio NATS Vocal Competition, First Place (Lower/Upper College Musical Theatre TBB)
STUDENT PUBLICATIONS

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Proceedings of the National Conference on Undergraduate Research

Lamara Love with A. Newmeyer, N. Ryan-Wenger, G. Noritz, M. A. Skeens
Lessons Learned in the Development of a Nurse-led Family Centered Approach to Developing a Holistic Comprehensive Clinic and Integrative Holistic Care Plan for Children with Cerebral Palsy
Journal for Specialists in Pediatric Nursing

Lamara Love, with A. M. Anderson, V. von Sadovszky, J. Kusiak, J. Ford, G. Noritz
A Study of Reiki Therapy on Unpleasant Symptoms in Children with Cerebral Palsy
Complementary Therapies in Clinical Practice

Sydney Skeie, Alysa Durbin with Kerry Cheesman
Prevalence and Risks Associated with Foods Labeled “Gluten-free”
Proceedings of the National Conference on Undergraduate Research

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Jiavanni Campbell, Nathan Gibbs, Christina Mickelson, Benjamin Smith  
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Correlation between Polychlorinated Biphenyls and Reproductive Hormone Levels in Men and Women  
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Sarah Fathala, Daryna Zaitseva  
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Kaela Folatko  
Mentor: Christine Anderson  
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The Ohio Academy of Science Annual Meeting

Christine Heckler  
Mentor: Kathy Fernandez  
The Need for Pediatric LGBTQ Education in the Hospital Setting  
Sigma Theta Tau International 2021 Biennial Convention

Caitlyn Hoffman  
Mentor: Olga Shonia  
Association of Teacher Educators (ATE) Annual National Conference

Kati Jackson  
Mentor: Christine Anderson  
Relationship between Environmental Factors and Turtle Activity in Southeastern Ohio  
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Karen Kanke  
Mentor: Kerry Cheesman  
Human Interaction with the Environment Increases Instances of Antibiotic Resistant Bacteria in Soil  
Ohio Academy of Science Annual Meeting

Carlyn Perez  
Mentor: Ramya Ravisankar  
Integrating Art History in the Classroom  
Ohio Art Education Association Conference

Sydney Skeie, Alysa Durbin  
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Prevalence of Gluten Contamination in Certified and Non-certified Foods Labeled “Gluten-free”  
American Society for Nutrition

Maxwell Zawatsky  
Mentor: Ramya Ravisankar  
Molasses Cookies, Digital drawing, 2021  
FRESH LOOKS 2022 at Eastern Michigan University

Maxwell Zawatsky, Grace Ross-Whiterup, Kayden Hauke  
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